

Chapter III

CONNECTING PEOPLE AND MARKETS FOR ECONOMIC TRANSFORMATION

Benin Country Economic Memorandum 2.0



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ABBREVIATIONS AND ACRONYMS

AIDI	Africa Infrastructure Development Index
BN	Billion
CEM	Country Economic Memorandum
CFAF	CFA Franc
COVID-19	Corona virus disease
CPIA	Country Policy and Institutional Assessment
CNSR	National Road Safety Agency, <i>Centre National de Sécurité Routière</i>
DE4A	Digital Economy for Africa
FDI	Foreign direct investment
GDP	Gross domestic product
GVCS	Global value chains
IMF	International Monetary Fund

INSAE	Institut National de la Statistique et de l'Analyse Economique
ICBT	Informal cross-border trade
LICs	Low-income countries
LMICs	Lower-middle income countries
MT	Metric tonnes
MIT	Ministry in charge of Infrastructure and Transport
PAG	Government Action Plan (<i>Plan d'Action du Gouvernement 2016-2021</i>)
PAC	Autonomous Port of Cotonou (<i>Port Autonome de Cotonou</i>)
PIP	Public Investment Plan
PIM	Public Investment Management

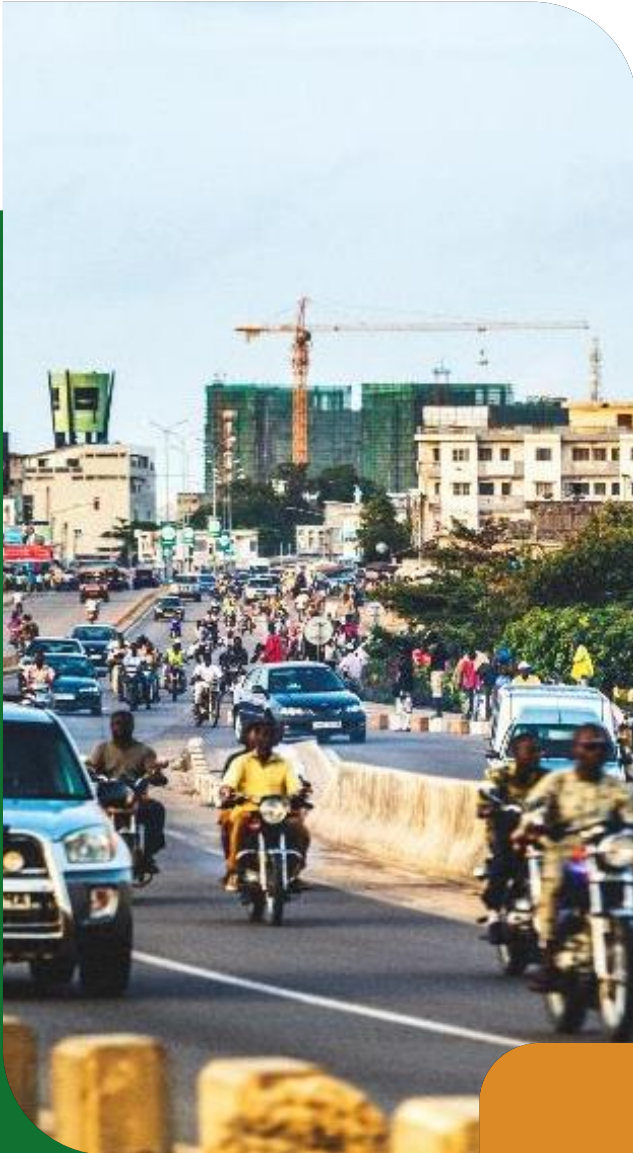
PIMA	Public Investment Management Assessment
PLSCI	Port Liner Shipping Connectivity Index
PPP	Purchasing power parity
SSA	Sub-saharan Africa
SDG	Sustainable Development Goals
RAI	Rural Access Index
ROW	Rest of the world
TEU	Twenty foot equivalent unit
TFP	Total factor productivity
UNCTAD	United Nations Conference on Trade and Development
WAEMU	West African Economic and Monetary Union

Introduction

Increasing Benin's competitiveness through better transport infrastructure and services

Transport connectivity - infrastructure and services - play a vital role in market integration, economic transformation and shared prosperity. Transport connectivity boosts growth and promotes shared prosperity in several ways. First, it reduces economic distances and thereby facilitates trade, powers businesses, and connects workers to their jobs. Modern transport means lower transport costs and improved access to larger markets ([Donaldson 2018](#)). Second, it fosters market integration (of goods and labor) within and across borders ([World Bank 2009](#)). Lowering transport costs allows secondary cities to be integrated into value chains; and connected cities will also create density leading to potential gains from [agglomeration economies](#) ([Duranton and Puga 2004](#)). Last but not least, better transport connectivity enhances service delivery to households. It promotes access to healthcare and education facilities and accelerates much-needed human capital development in a country preparing for its demographic transition ([World Bank 2021](#)). Good transport connectivity therefore not only signifies a fair stock of physical capital, but also lays a solid foundation for market integration, sector transformation and human capital accumulation.

Benin's geographical position and history have privileged transport as an important driver of growth. The Port of Cotonou (PAC), has long been the economic lung of the country, linking it with the rest of the world (ROW) and providing access for neighboring and landlocked countries. Between 2016 and 2019, the formal transport sector was the third largest contributor to gross domestic product (GDP) growth on the supply-side, after agriculture and other services; and represented approximately 9% of GDP. Its indirect contribution to the creation of added value is greater.





Transport connectivity is crucial for Benin's continued growth into a middle-income economy. The current level of infrastructure is insufficient. The government fully recognizes the importance of transport-related infrastructure, which amounts to 25% of total investment in the Government Action Plan ([PAG 2016-2021](#)). It is estimated, however, that the transport sector would need an additional spending of 8.1% of GDP (including on maintenance) to meet the Sustainable Development Goal (SDG 9 and 11) linked to accessibility ([IMF 2019](#)). Ensuring sufficient funding for the sector therefore means not only mobilizing public resources, but also private financing. It is also important to ensure investment in transport services and complementary policies, such as regulations that improve the trucking industry performance, trade facilitation, passenger services and urban mobility. An adequate institutional framework reduces market friction and improves the business environment as Benin aims at greater integration into global value chains (GVCs) and to take advantage of regional markets, particularly in the context of the Africa Continental Free Trade Agreement (AfCFTA) (see Chapter IV). Finally, the investment priority should be to reduce regional inequalities in parallel to the urbanization process, so as to enhance access to service delivery and accelerate human capital accumulation.

This chapter appraises transport connectivity in Benin. It assesses Benin's major modes of transport (roads, maritime, rail and air transport) by benchmarking Benin against comparator countries and regions. It explores the uneven level of connectivity among different regions and between urban and rural areas through the lens of economic distance and transport services. It also examines governance and financing of the sector before offering a set of policy recommendations for both the short and long term.

The chapter is organized as follows: Section 3.1 analyzes whether Benin's transport sector is adequate for a competitive economy linked to the ROW; Section 3.2 discusses its role in improving socioeconomic outcomes within Benin; Section 3.3 analyzes governance and financing needs; and Section 3.4 presents policy options.

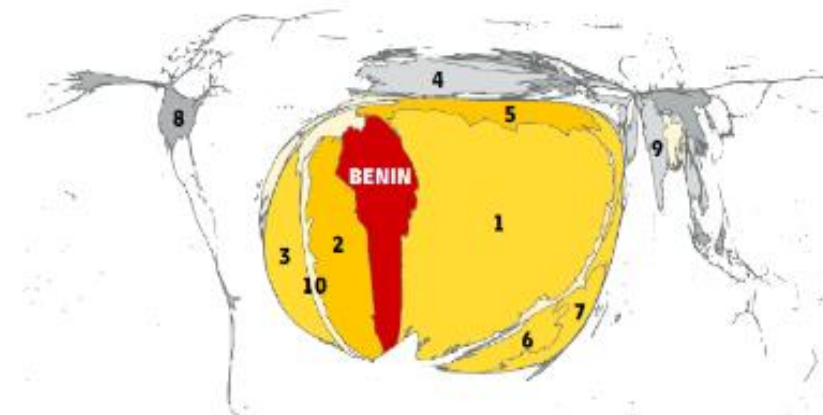
Benin's economy is highly dependent on its transport network

As a small open economy, Benin's economic growth depends on its connections with the region and beyond

Benin's main drivers of interconnectedness are merchandise trade and movements of people (students, migrants, tourists), while services trade, foreign direct investment (FDI) flows, and ICT-related services are less dynamic ([Global Connectedness Index 2020](#)). In 2019, neighboring countries accounted for more than 70% of Benin's official international flows of trade, capital, information and people. Nigeria, by far the largest, accounts for 41% of all linkages (excluding [unrecorded informal trade](#)). Togo is in second place, which together with other countries in the region accounts for 30% of total flows. Benin's main trading partners are regional, although this is not visible from official recorded trade statistics (see Chapter IV).

As with other countries in sub-Saharan Africa (SSA), most of Benin's trade is carried by the region's trunk road network, comprising strategic trading corridors linking deep seaports to economic hinterlands. [Informal cross-border trade \(ICBT\)](#) is also prevalent and has a long history given the region's artificial and often porous borders, a long tradition of regional trade and weak border enforcement ([Golub et al. 2019](#)).

01 Benin is highly integrated within the region



Top 10 Countries Ranked by Their Shares of Benin's International Flows (Country Sizes on Map)		
1. Nigeria (41%)	6. Gabon (3%)	
2. Togo (10%)	7. Congo (3%)	
3. Côte d'Ivoire (6%)	8. United States (2%)	
4. France (5%)	9. India (2%)	
5. Niger (5%)	10. Ghana (1.8%)	

Map Colors: Benin's share of other countries' international flows



Source: DHL 2020; Notes: The "rooted map" produced by DHL in the Global Connectedness Index 2020 depicts the size of countries' international flows in geographic space. Note that the rankings here are not directly comparable to the top 10 trading partners of Benin. This is because of the weight given to each component of the DHL index: trade 35%, capital 35%, information 15%, and people 15%.

BETTER TRANSPORT INFRASTRUCTURE AND SERVICES CAN BUILD THE BACKBONE OF A COMPETITIVE ECONOMY

Transport infrastructure and services can be the catalyst for economic and productivity growth. By connecting Benin with the rest of the world, they play a key role in the process of structural transformation and job creation. This role starts as a connector for trading goods and services, a central element of Benin's economy.

3.1

3.1.1 The Autonomous Port of Cotonou (PAC) is central to Benin's economy

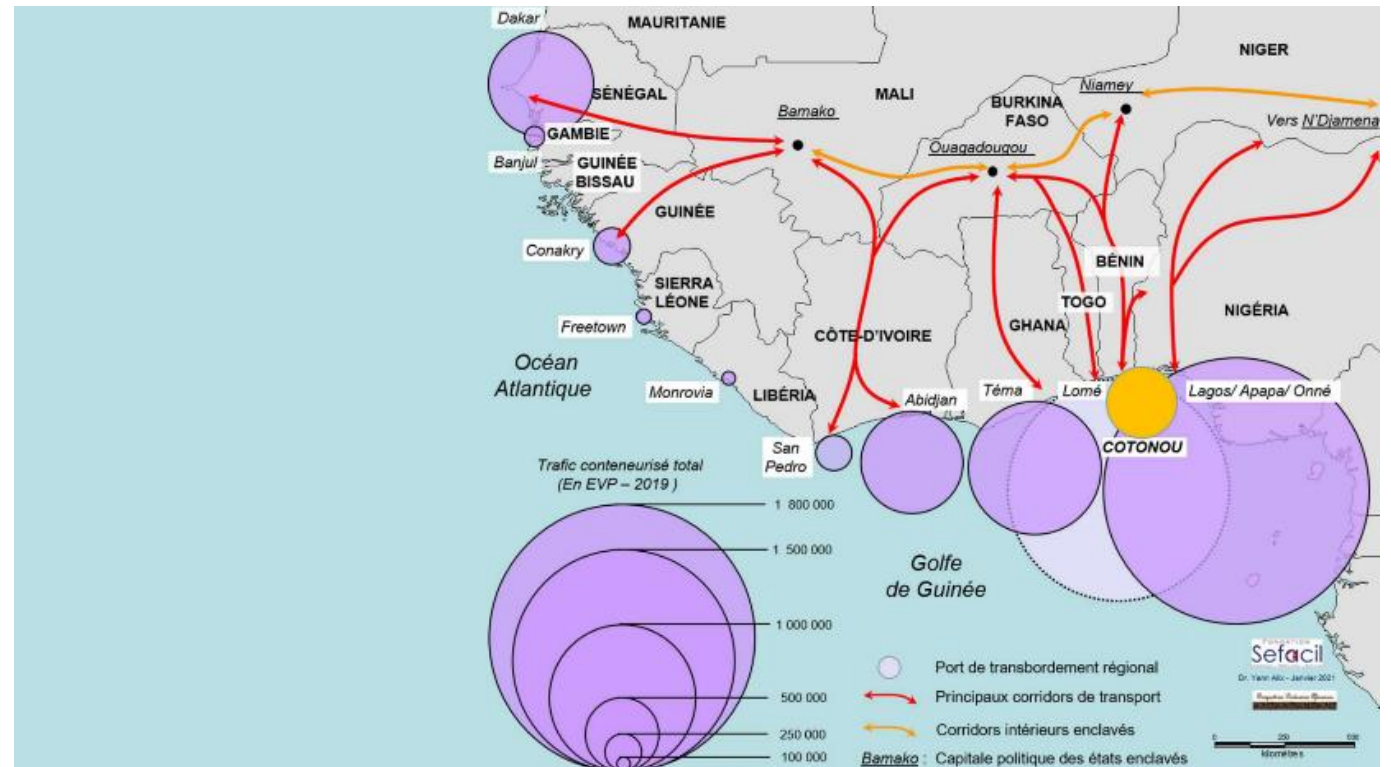
The PAC channels 90% of foreign trade, and contributes to 80-85% of customs tax collection and about 40% of total tax revenues

The Port of Cotonou (PAC) is among the most important ports in West Africa, alongside Abidjan, Lagos, Lomé, and Tema. It is strategically located 150 km east and west of the [Nigerian complex of Lagos-Apapa](#) and the [transshipment port](#) of Lomé; and in 2020 it handled a volume of 10 million metric tonnes (mt) of annual freight and 500,000 containers.

In addition to serving as a preferred supply channel for the domestic market, the PAC has a sub-regional role. It serves the inland landlocked countries (Niger, Mali and Burkina-Faso) for which it is an important transit port. There is a free trade zone at the port at the disposal of the landlocked Sahelian countries, particularly Niger. It also acts as a relay port for the Nigerian economy, which is the second largest transit volume after Niger.

West Africa's relative position in international shipping routes however reduces its port potential. The countries with the most port calls are located at the geographical corners of the continent. Egypt, Djibouti and Morocco benefit from their geographical position. South Africa provides hub port services, and its ports serve as gateways to containerized trade for itself and its neighbors. All four countries are also among those receiving the largest container ships in the continent ([UNCTAD 2019](#)).

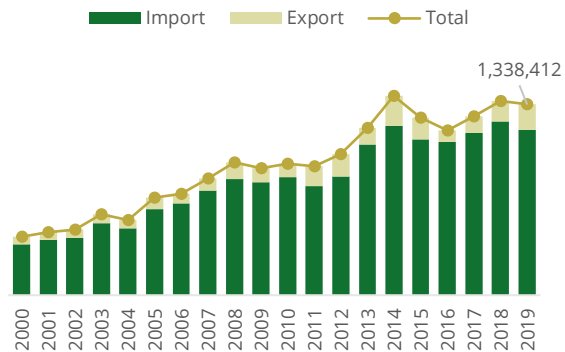
02 Main ports and corridors in the region



Source: Sefacil 2021

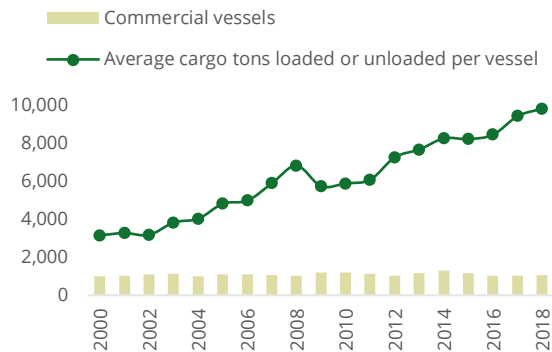
The PAC's performance has improved in the last decade

03 Volumes operated at the port have risen



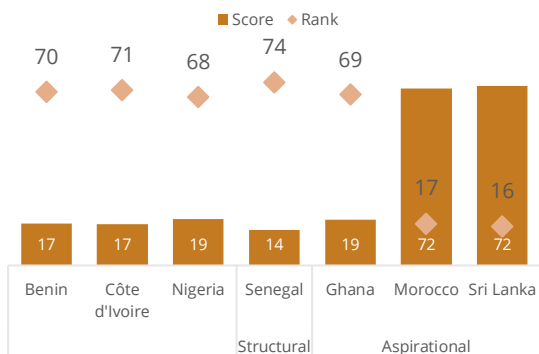
Source: AFDB 2018a and MDP 2020b; Notes: metric tonnes

04 Average cargo has steadily increased



Source: AFDB 2018a

05 Liner shipping connectivity is on par with regional peers (2019)



Source: WEF 2019, Note: The highest the score the better the performance. On the left index, scores are indexed at a 100 at the country with the highest value. On the right, the range is from 1 to 6.

06 Efficiency of seaport services only outperforms Nigeria and Ghana (2019)



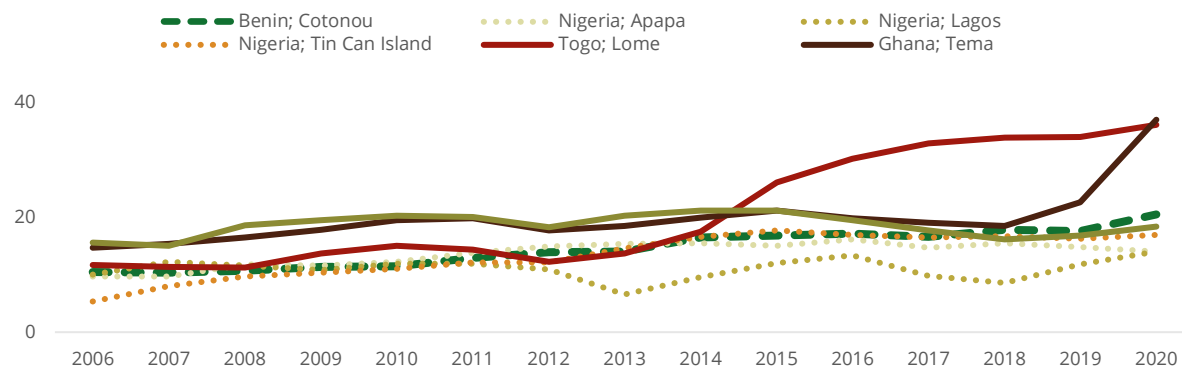
The port has gone through major improvements in the last decade...

The PAC has seen major improvements to infrastructure and has modernized its operations. In recent years, it has witnessed a continuous increase in freight traffic following modernization reforms started in the last decade (Box 3.1). The number of ships arriving at the PAC has remained relatively constant since the beginning of the 2000s, but there has been a sustained increase in the average cargo transported. The size of the cargo flow through the PAC increased by 45% between 2010 and 2019 (a 4.2% annual average increase) driven by the rise of containerized traffic. The general upward trend was temporarily halted in 2014 following the fall in commodity prices, notably oil prices, and again in 2019 following the unilateral [border closure by Nigeria](#) (chapter IV). These episodes exemplify its reliance on the neighboring country.

Benin performs reasonably well on port connectivity and associated services. Even with the differences in the size of each economy, Benin is on a par with almost all regional peers for [liner shipping connectivity](#). The perceptions of port infrastructure quality in recent years have improved as well, and in 2019 the PAC achieved greater levels of efficiency in seaport services compared to Nigeria and Ghana, although it is somewhat below Côte d'Ivoire, another of its main competitors. Finally, the PAC also performs well regionally for the size of the vessels it handles and for turnaround times ([Appendix 3](#)).

But its capacity remains below top performers

07 Liner Shipment Connectivity score (2006-2020) - Selected top ports in the region



Source: UNCTAD 2020a

08 The capacity of the PAC lags behind regional competitors

Country	Port	Depth (m)	Access channel (m)	Number of berths	Length of stay of cargo (days)	Average number of ships per month	Average tonnage handled / year
Benin	Cotonou	10 to 15	15	11	-	85	10,000,000
Côte d'Ivoire	Abidjan	13.5 to 16	18	21	15.70	160	22,500,000
Ghana	Tema	9; 11.50 to 16	18.2 to 19	18	18	129	22,000,000
Nigeria	Lagos	15	-	-	25	95	41,000,000
Togo	Lomé	16.50 to 17	18	13	-	115	30,000,000

Source: Hounsounou, A. et al. 2021

... but it is still trailing its closest competitors and reaching capacity

Lomé and Tema are the leading container hub ports in the region, with Cotonou in third place. The PAC has shown a steady rise in the last 15 years in terms of connectivity of liner services, rising 20 places in the ranking prepared by UNCTAD, and arriving 3rd place among the main ports in the region. The steady improvement has allowed the PAC to outperform its Nigerian peers, which face serious capacity problems and significant delays, and especially Abidjan (Côte d'Ivoire), the best ranked for years. Despite this, it has not kept pace with its closest neighbors, Lomé (Togo) and Tema (Ghana), who have registered rapid improvements, and are emerging as the leading hub ports in the subregion.

Further, despite the increase in freight traffic, the PAC continues to be inefficient vis-à-vis the needs of the hinterland and competition from Lomé. It has the lowest number of berths and the lowest depth of neighboring ports, and handles the lowest tonnage. Both exports and transshipment flows have declined in recent years. The cyclical uncertainties linked to the economic and geopolitical developments in Nigeria, as well as Lomé's ambitious development programs, are some of the main reasons behind this trend. To landlocked Niger, the improved infrastructure, procedures, and distance of the Lomé-Niamey corridor may offer an alternative to the Cotonou-Niamey corridor.

In this context, the PAC's ambitious [expansion project in progress \(2019-2023\)](#) is crucial for it to protect its position, keep up with regional competition and support greater economic competitiveness. Expanding its capacity is becoming all the more important as traffic is expected to increase with the completion of the [Benin-Niger pipeline in 2022-2023](#).

Box 3.1 The modernization of the PAC: 2008-2023

The PAC has gone through various phases of modernization:

2008-2012: This first phase started with adaptation and modernization to manage container and vehicle traffic. This was followed by acquiring modern equipment to operate the terminals by various handling companies, especially private ones. A digital reform also began, with the implementation of various management computer systems and simplification mechanisms. In 2011-2012 the Single Window of the Port (GUP) was put in place. As a result, operations were simplified, streamlined, and made more transparent, thus reducing costs and time for the entire system.

2007 and 2016: the waiting time at the dock for container ships and [Ro-Ro ships](#) was brought down from 46 to 23 hours and from 35 to 15 hours, respectively. The average waiting time in roadstead was reduced from 43 to 16 hours in the first case and from 36 to 8 hours in the second. The delay passage of a container at the port was 19 days on average until 2011 and has been reduced to less than 6 days. Additionally, average waiting time for trucks in 2017 was 27.55 hours, a significant improvement on 2008 when it was 104 hours. Digitization has made it possible to increase the efficiency and reduce the complexity of the processes, their cost and the time required. The complete dematerialization of activities has not been achieved however, and the system still faces many hurdles, such as the lack of a unified digital system among port operators and the incomplete centralized payment in the GUP.

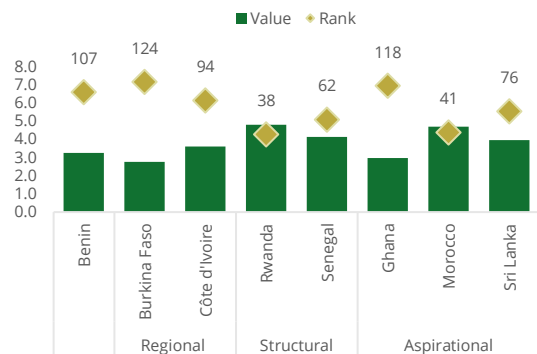
2018: governance changes ([Appendix 4](#)) allowed a private party to manage the port in order to improve efficiency. The PAC, a government institution of an industrial and commercial nature with civil status and financial autonomy, represents the port authority. The Port of Antwerp International (PAI) obtained a management contract, with a three-year mandate, renewable twice. This choice aimed at improving the efficiency of management and services, modernizing installations and equipment, and repositioning as well as transferring skills for the benefit of local staff. Container handling is carried out by SOBEMAP (a state-owned company with financial autonomy), SMTC (Bolloré Group), and COMAN (APM Terminals). SOBEMAP also has a monopoly on the handling of non-containerized products, apart from the used vehicle market, which it shares with the RoRo Terminal (Grimaldi Group).

2019-2023: The current phase involves expansion at three levels: (1) pier; (2) capacity in the berths of container ships, and (3) extension of the hydrocarbon (fuel) zone and port access. After the works, the new PAC is expected to (1) have replaced its old infrastructure, adapt the access for ships to market demand (depth of 15m and length per berth of 340m); (2) container cargo, 340m vessels and 14m draft, annual handling capacity of 1.8 to 2.0 million TEUs; (3) created modern terminals adapted to demand and with an increase in capacity; (4) hydrocarbons: increase in vessel capacity and storage capacity; (5) added a dedicated Ro-Ro berth.

Source: WFP 2018/Afrique Atlantique 2020/ WTO 2018

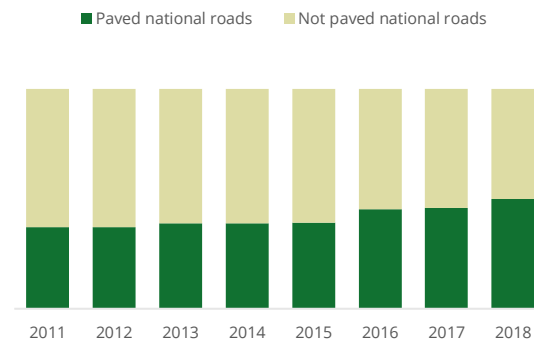
Road transport quality is insufficient

09 Quality of road infrastructure is below peers



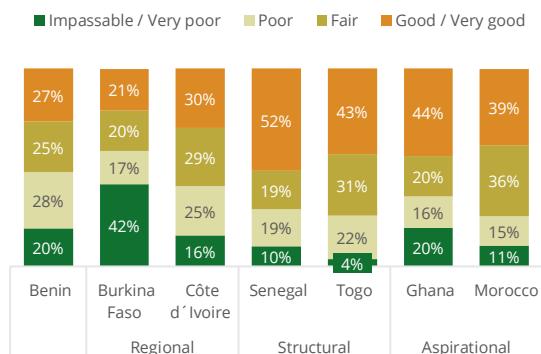
Source: WEF 2019, Note: value (left axis) ranges from 1 (worst) to 7 (best)

10 Benin's share of paved roads is low



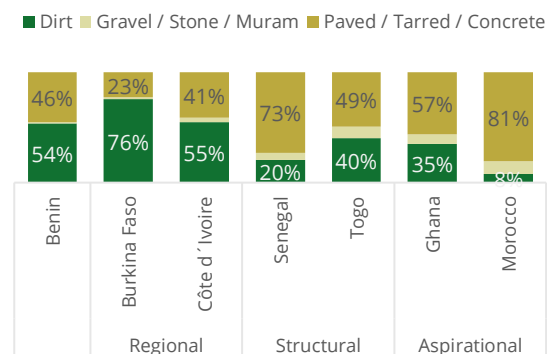
source: INSAE 2018

11 About 50% consider road condition as fair



Source: Afrobarometer 2019

12 Benin has one of the largest share of dirt roads at the start point



3.1.2 Road transport still faces challenges in quantity and quality

Road transportation is, by far, the main mode of transport in Benin. It accounts for 93% of passenger transport and 73% of freight (AfDB 2017). However, despite roads' dominance as the main mode of transport, paved roads account for less than 50% of national roads. Benin lags behind all its structural comparators.

Perceptions of road infrastructure quality are below those of structural peers. For instance, the condition of Benin's roads (based on the last 5 km of a journey) considered fair barely exceeds 50%, while it is 65% in peer countries. The trend has somewhat slightly reverted in the last two years, but quality remains low. The road network condition index (defined as the sum of good and fair conditions), dropped significantly between 2015 and 2017, reaching the lowest level in 2017. While it improved in 2018 and 2019 when it reached 58%, overall quality is still well below the best performing peers. Low and inconsistent development of road paving, lack of maintenance, insufficient oversight and the absence of overload penalties, explains this. There are significant deficiencies in thousands of kilometers of unpaved roads serving villages and agricultural areas.

Previous analysis of Benin showed that road transport investment can have a significant impact on growth and poverty reduction with positive elasticities higher than 1 (Adjovi and Codo, 2019), particularly due to the impact on farmers. The capacity of the government to maintain the road transport network and expand coverage raises some complex trade-offs, particularly in countries with limited domestic revenue mobilization and constrained capacity to attract private investment to the sector.

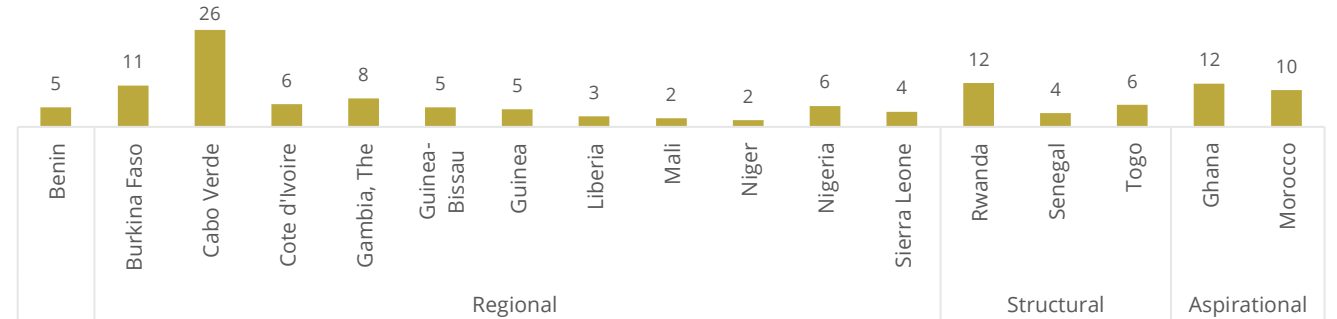
Benchmarking Benin's roads: the Africa Infrastructure Development Index (AIDI)

Benin significantly trails behind its regional comparators for the development of its road infrastructure

The decline of Benin's road infrastructure began in the early 2000s, and has continued to deteriorate, falling in the AIDI rankings both at the continental level and within ECOWAS. In 2020, Benin is behind all structural peers except Senegal. Despite having better indicators than Ghana, Togo and Côte d'Ivoire in 2003, it has been outperformed by these countries since 2010. While Benin's gross investment has increased in recent years, its efficiency of investments has stalled at both private and public levels (see Section 3.3 and Chapter I). Deficiencies in road maintenance are one of the main drivers of inadequate road infrastructure.

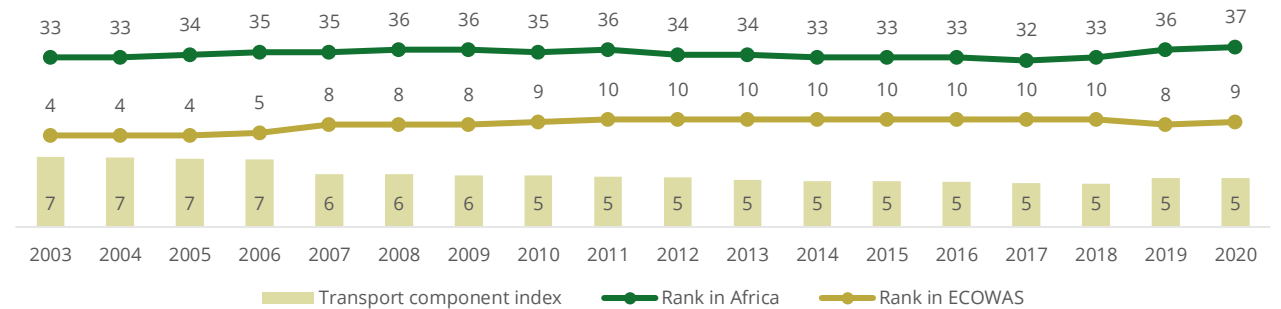
The Africa Infrastructure Development Index (AIDI) transport component is made up of two indicators associated with road infrastructure: total paved roads (km per 10,000 inhabitants) and total road network in km (per km² of exploitable land area). As such, it measures density with respect to population needs.

13 Benin's AIDI transport score compared with peers (2020)



Source: AFDB 2020

14 Benin's AIDI transport ranking in Africa and ECOWAS has worsened



Source: AFDB 2020; Notes: the lower the score the worse the performance.

As with other countries in the region, rail and air modes are below potential

15

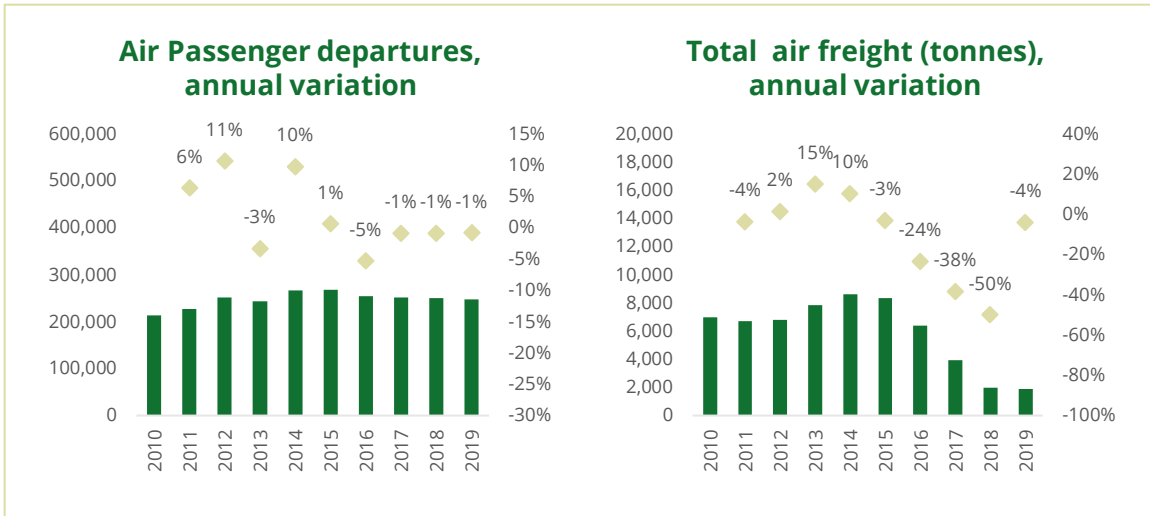
Cotonou International airport is running at half its potential air traffic capacity for both people and goods

Benin has an international airport (*Cotonou-Cadjehoun*) and a set of local community landing strips. The airport runway cannot easily accommodate certain types of wide-body aircraft.

Benin's level of airport connectivity is low, ranking behind almost all comparable peers. This mostly results from its smaller population and nascent tourism development.

The construction of a second international airport is under way in Tourou, in the department of Borgou, and efforts are being made to realize the new international airport (Glodjigbé Airport project).

[See more in Appendix 5: Air fares, charges and taxes](#)



Source: MIT 2017 and MPD 2020b

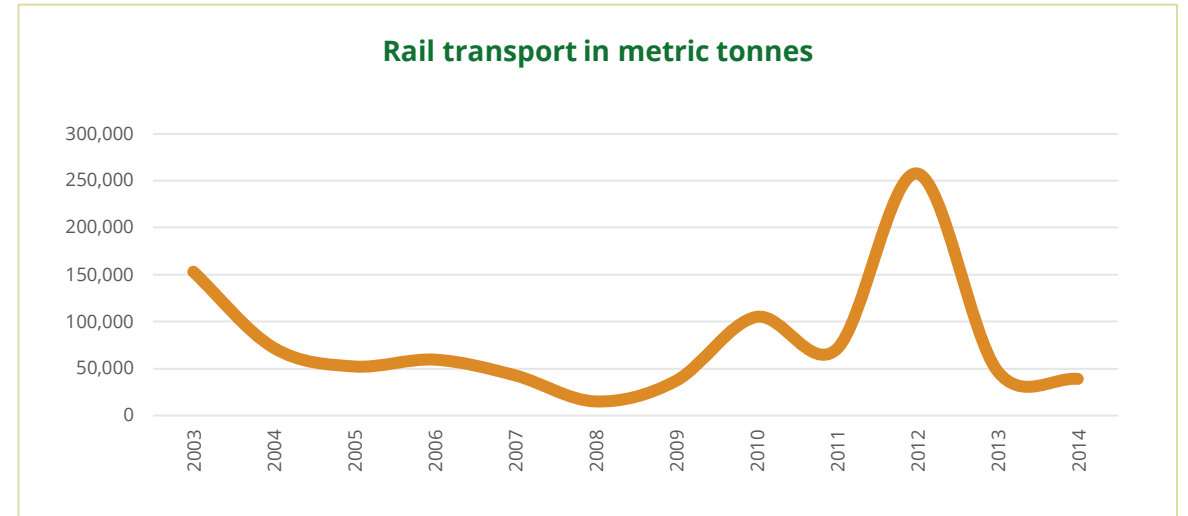
16

The railway density of all the countries in the region is low, with poor service efficiency.

Benin's railway network was constructed between 1900 and 1936. It is divided into three lines: Cotonou to Parakou (438 km); Pahou to Segbohoue via Ouidah (33 km), and Cotonou to Pobe via Porto-Novo (107 km).

The former Benin-Niger Railways and Transport Organization (OCBN) operated the service until 2014, when it was delivered in concession to Béninrail. The track and rolling stock are in poor condition and the line operations are paused due to the cancellation of the concession contract.

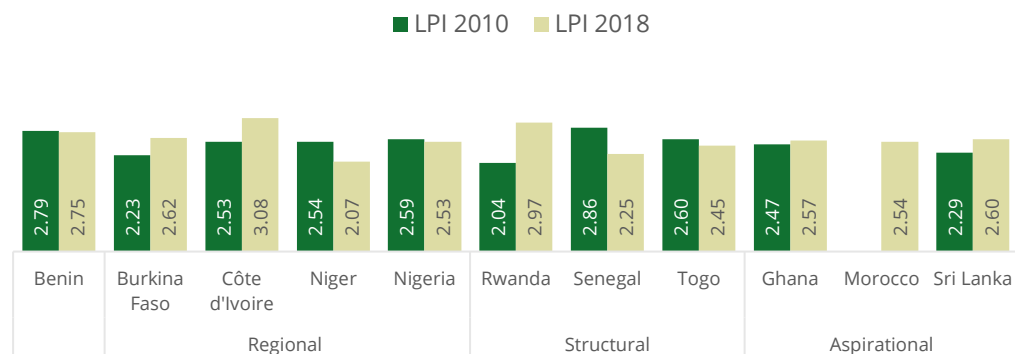
There is a long-standing project to connect the central line with Niamey, Niger: the first part of the plan was the rehabilitation of the existing 438 km Cotonou-Parakou line and building a 625 km extension from Parakou to Niamey (estimated cost between US\$ 1.2 bn to US\$ 2.0 bn).



Source: AFDB 2018a

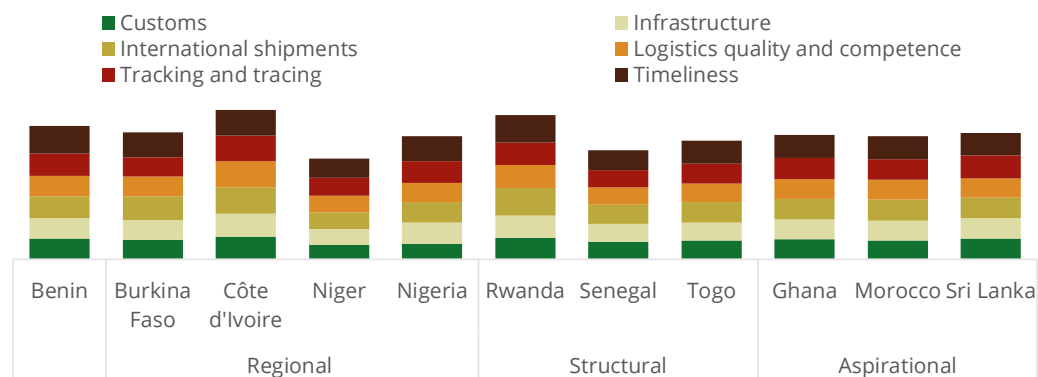
Logistics performance has stalled

17 LPI score deteriorated between 2010 - 2018



Source: WB 2010/2018; Notes: the highest the LPI the better

18 LPI by component 2018



Source: WB 2018 / 2010 Notes: the largest the share in the column, the better the performance of the component.

3.1.3 The quality of logistics and related services has stalled

Transport services along regional trade corridors are essential to improve the competitiveness of the sector. Much of the transport price burden in Africa is related to the overall regulatory and market structure issues of freight logistics and related transport services. While Benin is keeping up with the regional average on [logistics performance](#) – and presents higher levels than almost all its peers, with the notable exception of Rwanda and Côte d'Ivoire, its performance has worsened since 2010.

Chief amongst logistics transportation services is the trucking industry. Some of the major inefficiencies increasing logistics costs relate to the organization of the road transport sector and the determination of transit transport prices without effective competition ([SSTAP 2018](#)). In West and Central Africa, the trucking sector is extremely diverse, ranging from modern operators vertically integrated into logistics groups to individuals (i.e., one man – one truck) and informal truckers who often do not even own their trucks. The latter are predominant and provide transport services for shippers.

In Benin, most of the local transport capacity is from informal truckers, referred to as '*les demarcheurs*'. Their equipment and services are often poor, and the average age of the national fleet is more than 25 years, compared to 17 in Togo. International haulage activities are undertaken by small private operators. Prices are not regulated. Hauliers' unions claim that road conditions (particularly during the rainy season), and systematic empty returns cut down their benefits (small scale hauliers make on average less than 2 round trips per month). Overloading is common practice: about 80% of the trucks are overloaded. While the 2004 regional agreement on axle-loads limits was translated into national legislation, it is only timidly enforced.

To improve logistics and its trade integration with Niger, Benin recently completed a dry port in Parakou, one of the components of [the "Backbone Project"](#) which also includes the extension of the railway network to Niger. It is the second logistics center after the Allada platform, a customs extension of the PAC located 60km from Cotonou. Developing modern transport services offers a great opportunity for Benin. Among the largest African companies, most are in retail, financial and transport services ([McKinsey 2016](#)).

Benin faces competition in connecting landlocked countries through regional corridors

The transport costs on the Cotonou-Niamey corridor are increased by informal costs

The region's ports mostly compete for transit traffic to the landlocked Sahelian countries (Mali, Burkina Faso and Niger). Transport and logistics costs differ quite widely depending on the corridor, which can at least partly be attributed to the corridor length but also to varying efficiency of transit services.

The overall cost of transporting a 20-foot container is lowest on the Cotonou-Niamey corridor. But there are various informal costs at each step of the logistics process. From arrival at the port to finalizing customs clearance procedures at the destination, the Cotonou-Niamey takes longest (19.7 days), while the shortest (11.6 days) is the Lomé-Ouaga corridor. On top of transport services, complementary policies (trade facilitation and policies incentivizing mobility for workers and firms) play a crucial role in transforming transport corridors into economic corridors ([Box 3.2](#)).

19 Key statistics for transport corridors in West and Central Africa

	Cotonou-Niamey	Abidjan-Ouagadougou	Abidjan-Lagos	Dakar-Bamako	Lomé-Ouagadougou	Douala-N'Djamena
Length(km)	1035	1200	1000	1470	1000	1630
MAIN GOODS	Minerals & metals, fuels, manufactured goods, food	Cotton exports from Burkina Faso	Oil & derivatives, cement, chemical, paper, textiles, plastics, rubber goods, cotton, food	Cotton, cement, salt, oil products, cereals, rice, fertilizer, miscellaneous products	Cotton from Burkina Faso; cement, salt, sulfur, fats and oils, cereals, mineral oil	Petroleum products, chemicals, iron, food
COST OF TRANSPORT ON CORRIDOR	Non containerized Cement 30,000 CFA per ton from Cotonou + lumpsum 1.2 M per truckload Containers (include repositioning of the empty) Cotonou, 1.1 millions CFA;	Non containerized Cement / clinker from Lomé 30,000 to 34,500 CFA per ton SONABHY 36 F per m3 per km Containers (include repositioning of the empty) -1.6 M CFA Abidjan	From Lagos to Accra (470 km), the average price is US\$4,200 per 40-ft container	Non containerized Import 38,000 CFA per ton Cotton export 34.5 CFA Containers (include repositioning of the empty) 1.4 M CFA per ton per km	Non containerized Cement / clinker from Lomé 30,000 to 34,500 CFA per ton SONABHY 36 F per m3 per km Containers (include repositioning of the empty) 1.4 M CFA Lomé	\$3,780 to \$4,530 for a 20-ft container
FLEET CHARACTERISTICS	Truck fleet average age is 25 years in Niger and 27 years in Benin; the average truck fleet size is 3 vehicles; involvement in international traffic is higher among truckers in Niger than in Benin;	Average fleet age is 21 CIV and 13 in BFA; 43% of Burkinabe and 15% in Ivorian truck companies own only 1 truck;	Average age of vehicles > 20 years; ~ 90% of the fleet belongs to individuals; cross-border traffic is most intense on the Benin-Togo border (>2,700 vehicles per day)	About 400 trucks per day (85% Malian); 60% of carriers have only 1 vehicle; fleet is newer in Mali than Senegal, where as much as 85% of vehicles are more than 10 years old	Average age of trucks in Togo is 17 years; 30% of the active fleet is of conventional trucks; 64% of container carriers, 6% of tank trucks, and 64% of conventional trucks;	Most operators have old fleets with large trucks (35- 40 tons capacity); the average age of these trucks is younger in Cameroon (15 years) than in Chad; transit truckers employ larger vehicles,

Source: SSATP (2018) and Corridor Assessment Report (2019, TFWA) – data for Dakar-Bamako, Corridors to Ouagadougou and Cotonou-Niamey



Complementary policies, such as to reduce friction at borders, are central to increase competitiveness

There are ongoing efforts to reduce trade and transportation barriers along the different regional corridors. Trade facilitation reforms are crucial to support transport investments. Checkpoints are among the leading complaints for transporters, traders and consumers; they slow the average speed of travel and reduce the accessibility of border cities. With the implementation of the Abidjan-Lagos Trade and Transport Facilitation Project (WBG) the time for merchandise/trucks to cross the borders along the corridor has decreased significantly: from 24 to 10 hours (-58%) at the border between Togo and Benin and from 48 to 31 hours (-35%) on the border between Benin and Nigeria.

In West Africa, both ECOWAS and WAEMU promote the establishment of One Stop Border Posts (OSBPs) on their main inland border crossings, as a solution to streamline border crossing procedures and eliminate unnecessary delays. There are two operational OSBPs, Malanville-Gaya (border with Niger) and Seme-Kraké (with Nigeria), and another under construction in Hillacondji - Sanvee Condji (with Togo). The Malanville-Gaya OSBP has been in operation since 2019 but operational deficiencies have so far limited the benefits. Careful assessment of whether it has added a layer without necessarily removing the steps that should be made unnecessary could help improve its efficiency.

See Chapter IV for more details.

Border Crossing Process at Malanville: Before and After

Before the OSBP

- Mandatory stop at the Koumate parking yard, 11 km from the border
- Documentation control by Police and Customs

After the OSBP

- Seal's integrity and GPS unit check by Benin Control
- Vehicles spend the night in the parking yard and are released in batch the next morning
- Vehicles proceed to the Malanville Customs office for the Exit Customs procedures
- Vehicles proceed to the OSBP facility for Customs procedures and removal of the Benin Control GPS unit
- The Benin T1 is stamped by the Niger Customs and no additional Customs declaration is required in the Niger Customs IT
- Crossing of the border (on the bridge)
- Vehicles proceed to the Kotcha parking yard on the Niger side of the border, and usually spend the night
- C&F agents declare the goods in the Niger Customs IT, domestic transit for goods proceeding to Niamey and the other cities, or border clearance for the local consumption (limited amount as the Gaya office can only clear up to a certain amount)
- Vehicles proceed to the Gaya Customs facility for release under Customs escort
- Vehicles proceed under Customs escort

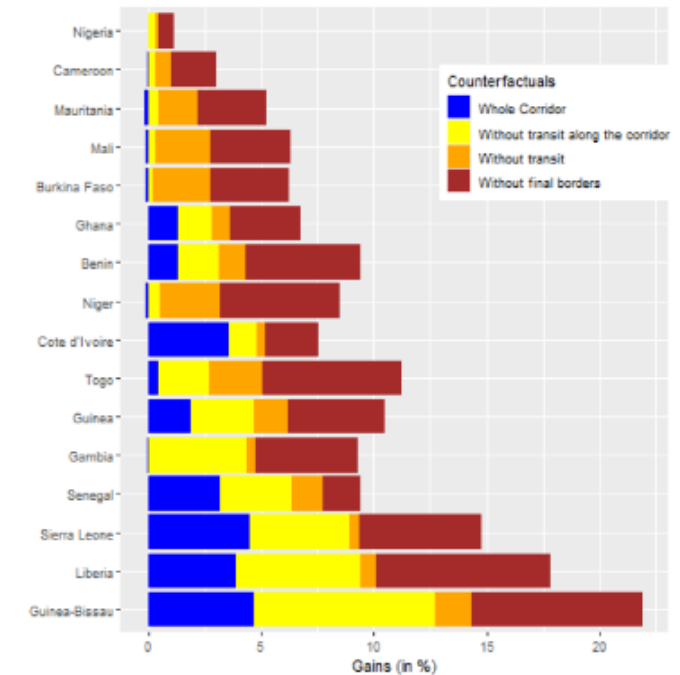
Box 3.2 Investing in complementary policies (trade facilitation and trucking regulations) will boost the gain from upgrades in transport corridors in Benin

Lebrand (*forthcoming*) estimates the welfare gains from upgrading several major regional corridors in West Africa using a quantitative economic geography framework. The impact on five corridors is analyzed, focusing mostly on Lagos (Nigeria)-Dakar (Senegal), including in its Southern part the corridor between Abidjan (Cote d'Ivoire) and Lagos (Nigeria) that connects the most densely populated and economically active par of the subregion and crosses through Benin.

The paper quantifies the direct gains of transport investments needed to transform the road into a highway, for locations along the corridors as well as the indirect spillovers for more distant locations. Overall, it finds that the net gains of regional investments along this corridor is highest for corridors connecting to larger economies while smaller and more fragile countries gain proportionally more from accessing larger markets. Additional investments in reducing border delays would bring large additional welfare gains, reducing spatial inequality in the whole region (but increasing it in some countries). The presence of cross-border spillovers of transport investments call for reduction in border frictions in West Africa.

Benin stands to benefit mostly from lower transport costs in the Abidjan-Lagos portion of the corridor, with benefits on real wages expected to be among the highest. Complementary investments in reducing border delays would increase the gains from road investments from 1% to close to 10%. Benin gains from accessing the Nigerian market more seamlessly. The simulations present income gains at the subnational levels. Reducing transit delays along the corridor brings large income gains for most regions of the countries that are crossed by the new corridor. Similar findings of potential major economic gains when transport investments are supported by complementary trade facilitation policies are also found in Central Asia, in the context of the Belt & Road Initiative ([Bird, Lebrand and Venables 2020](#)).

[See more: Subnational welfare gains \(Appendix 6\)](#)



Gains in real wages from road investment and removing trade frictions along the Dakar-Lagos corridor

CONNECTING PEOPLE, MARKETS AND CREATING AGGLOMERATION ECONOMIES TO BOOST PRODUCTIVITY GROWTH

Transport infrastructure and services are strong instruments to connect people and markets (labor, capital) within countries. If well planned, they can increase access to services and amenities, catalyzing human capital accumulation. As countries urbanize, urban transport policies are also critical for reducing congestion and incentivizing agglomeration economies.

3.2

3.2.1 People and firms are unevenly connected to markets and services

Reducing economic distance through lower transport costs would foster specialization and scale economies

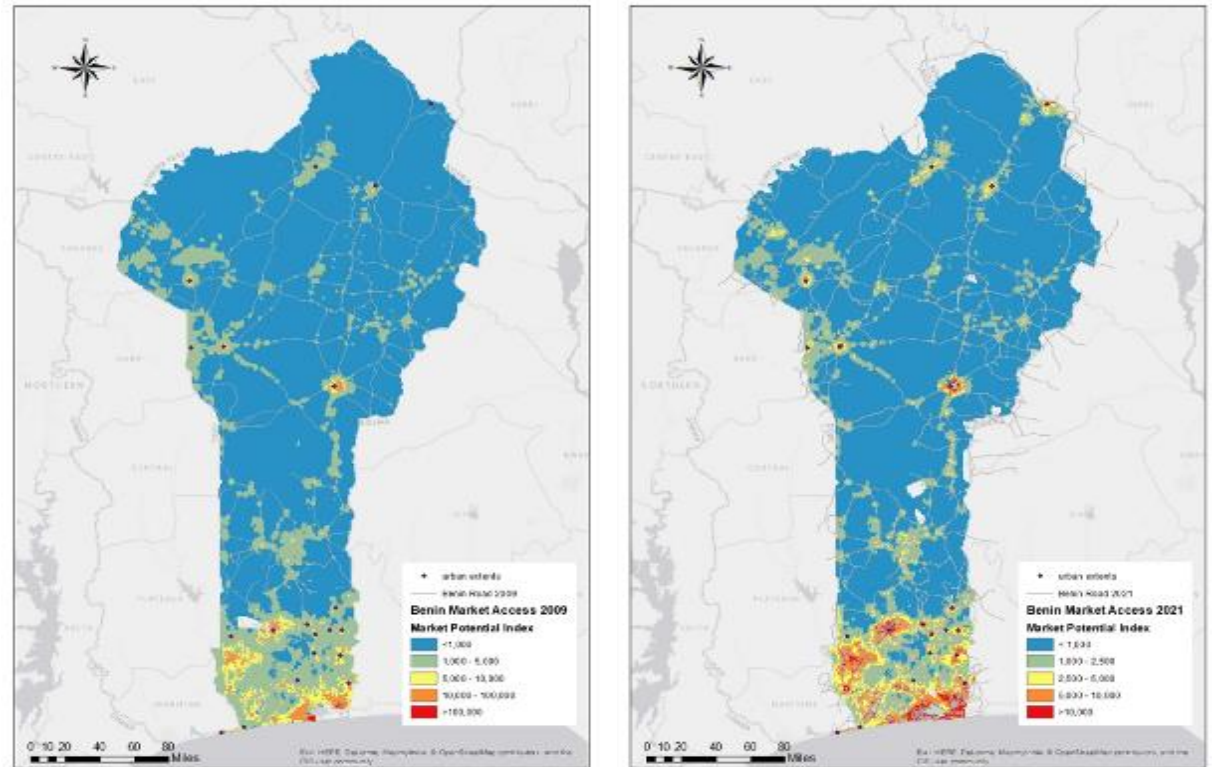
Between 2009 and 2021, [population growth](#), urbanization and investments in infrastructure have improved market potential in Benin's south and near urban centers. Slowly, secondary cities have started to develop (notably Parakou). In contrast, 3/4 of the country – mostly rural, and where half of the population still lives – is trailing behind, accentuating spatial disparities. Overall, distances and transport costs remain large outside of the southern tip of the country where Cotonou and Porto Novo are located. As an example, it takes more than 12 hours to drive from Cotonou to Malanville, on the border with Niger (700km from north to south).

The inequalities in transport infrastructure and services create large *economic distances* between leading and lagging regions ([Box 3.3](#)). Agriculture still represents more than 1/4 of GDP, suggesting connecting rural areas to urban centers remains key for economic growth. At the same time, services have increasingly become the main employer (Chapter I and II), and economic activity is increasingly concentrated in the south, where educational levels, basic services and other measures of well-being are higher. High domestic transport costs, and lack of adequate services, pose a major challenge to the economic integration of subnational regions and limits their potential for economic diversification. Not everyone may benefit similarly from greater integration and distributional aspects need to be considered.

[See more: Appendix 7. the location of economic activity](#)

20

Most potential market gains are concentrated in the south

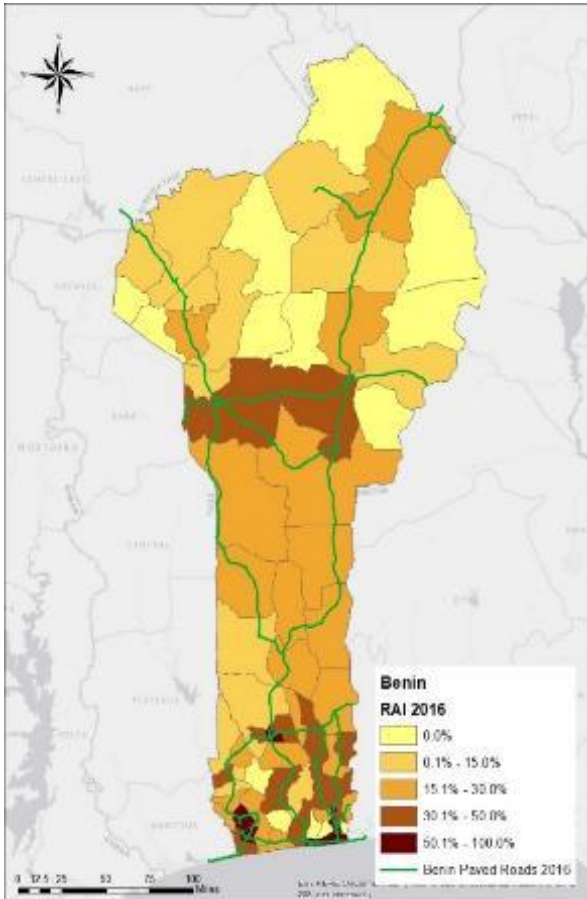


Source: OSM, WorldPop, Open Street Map and authors' calculations.

Notes: This figure represents market access potential, estimated as land-based travel time to the nearest densely-populated area.

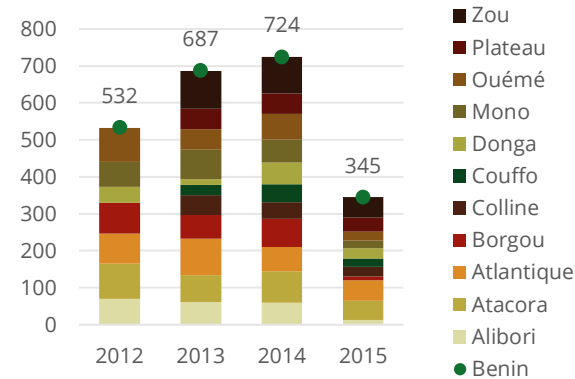
Only 23% of the rural population has access to an all-weather road

21 Percentage of the population within 2km of a paved road (RAI)



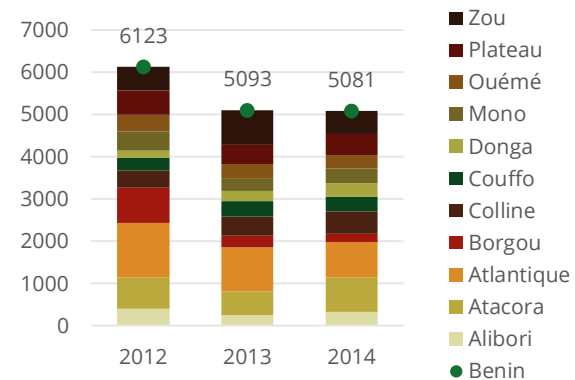
Sources: OSM, MPD and authors' calculations

22 Distribution of national rural roads built - in km



Source: AFDB 2020

23 Routine maintenance of rural roads - in km



Source: AFDB 2020

Rural accessibility remains limited and is an obstacle for agricultural producers

Despite efforts to improve rural roads, only 23% of the rural population has access to an all-weather road. Benin has made some efforts to improve rural infrastructure through various agriculture rehabilitation programs. The latest is the [Strategic Development of the Agricultural Sector \(PSDSA\) 2017-2025](#), which clearly identifies the need to invest in rural roads to ensure the development of key crops. It charges the National Council of Rural Transport (CNTR) with this task. The CNTR only has an advisory role, however. Despite the prominence, the large rural population's needs are not covered when measured by the [rural access index \(RAI\)](#). According to 2016 data, only 22.6% of the country's rural population lived less than 2km away from an all-weather road - a small improvement on the 18.1% recorded in 2009. In 2009 most communes in the country (47 out of 77) had an index lower than 20%, while only 35 did in 2016. The low levels of rural accessibility are below the average for SSA (34%) ([Box 4.4](#)). The monitoring of roads investments and maintenance is poor and has deteriorated since 2016. Currently, Benin uses the GERNIS method, which balances criticality and funding. Developing [tools](#) for improving the prioritization of rural roads would help allocate limited resources according to policy priorities.

Poor rural road connectivity is an obstacle (especially in the north) for transporting produce in good condition to hubs in the south and onward to markets abroad. This becomes especially difficult during the rainy season. The lack of appropriate storerooms and markets are other major obstacles to the sale of crops, leaving farmers with low bargaining power with buyers when supply is high (World Bank 2018). In 2021, the government has improved the airport facilities in Cotonou with cold chain infrastructure needed to accommodate highly perishable items while waiting for onward transport. Further improving this infrastructure is critical to the export of fresh agricultural produce. Due to the size of the domestic market, access to regional and international markets is of paramount importance.

Box 3.3 Policies to capitalize on shrinking economic distance

Economic distance is generally related to the straight-line (Euclidean) distances between two locations and the physical features of the geography separating them. This relationship, however, is not always straightforward. For trade in goods and services, economic distance captures time and monetary costs. The availability and quality of transport infrastructure and services, the regulatory and business environment and the institutions shaping the market structure of the transport services industry play important roles in shaping these costs.

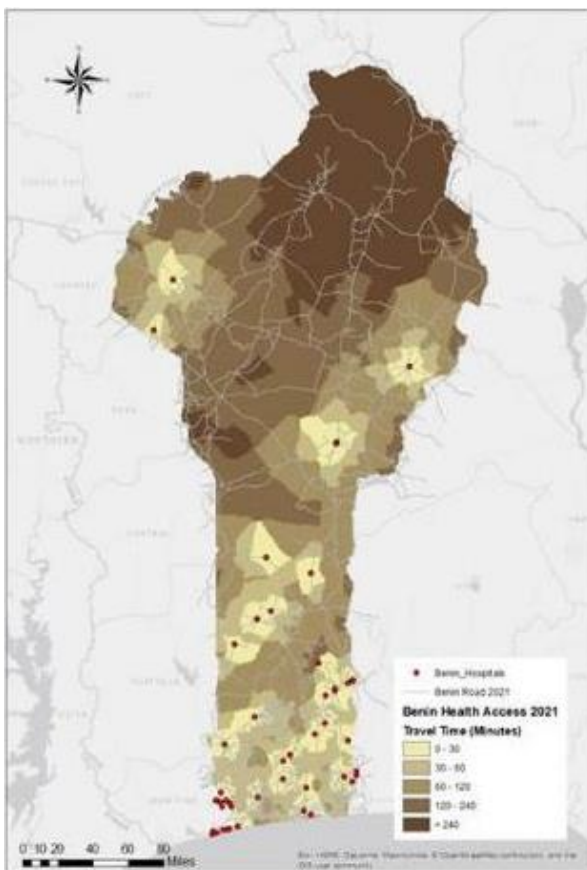
There is overwhelming evidence that declining transport costs can enhance specialization and economic activity. However, as economic distance shrinks, the ability of regions to specialize and stimulate wider economic benefits depends on complementary policies removing spatial frictions and integrating labor and capital markets. At the same time, by enhancing competition and increasing market access for local firms, trade costs can change the spatial distribution of productivity, and thus create spatial winners and losers, exacerbating spatial inequalities. Complementary policies are needed to manage these risks.

There are four sets of complementary policies and investment that can allow cities and other hubs to benefit more from transport investments. These levers are based on the World Bank (2015) Competitive Cities framework and include (1) institutions and regulations; (2) infrastructure and land; (3) skills and innovation; and (4) enterprise support and finance. Investment in transport infrastructure and services, and regulatory changes to support competition in the transport sector, can have major welfare benefits when combined with such policies. In Benin, territorial development policies are managed by the Ministry of Sustainable Development. They are linked together with transport policies in the Government Action Plan (PAG). Priorities include the development of regional hubs and governance of the sector.

Source: Grover, Lall and Maloney (forthcoming); [World Development Report \(2009\)](#)

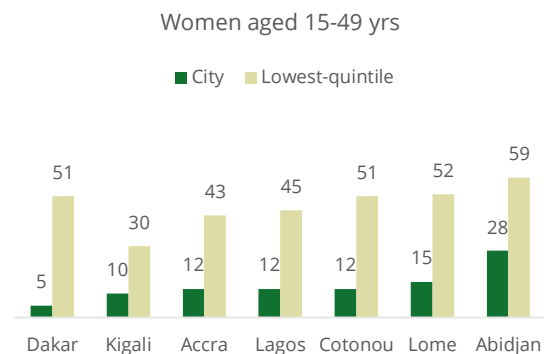
Transport can support human capital formation

24 Hospitals are accessible within a 35-minute drive in only a quarter of communes



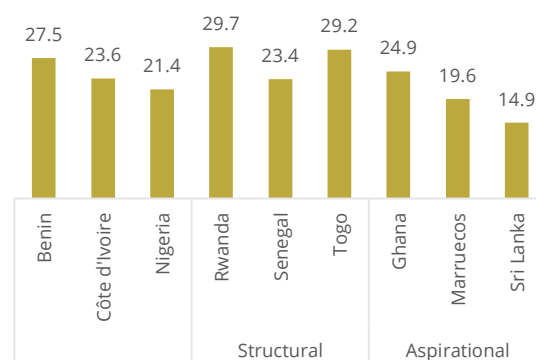
Sources: OSM, MPD and authors' calculations

25 Distance to a health facility is a barrier for seeking treatment



Source: World Bank 2021

26 Benin has one of the highest road traffic death rates of peers



Source: WHO 2018 Note: road traffic death rates per 100,000 people

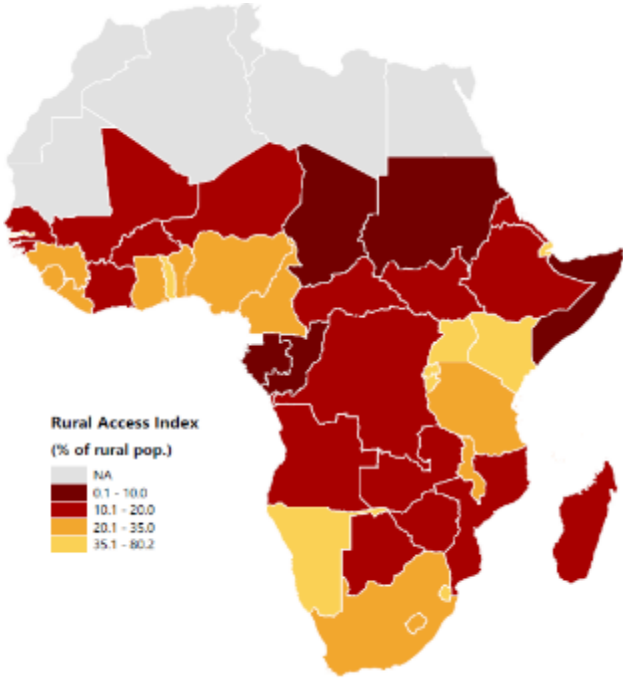
Transport infrastructure and services are needed for equitable human capital accumulation

Human capital formation can also be facilitated by accessible and good quality transport services (Appendix 8). The capacity of the population to access health and education providers is affected by the availability of reliable transport services and its affordability, especially for the poorest (World Bank 2021). In Benin, more than half of women between 15-49 years old from the lowest income quintile report that distance to a health facility is a barrier for seeking treatment. This is a concern when seeking antenatal care, crucial for maternal and infant health (Chapter II). Due to large spatial disparities, the average time to reach a health facility in the country is 3 hours, increasing to more than 7 hours in places like Malanville.

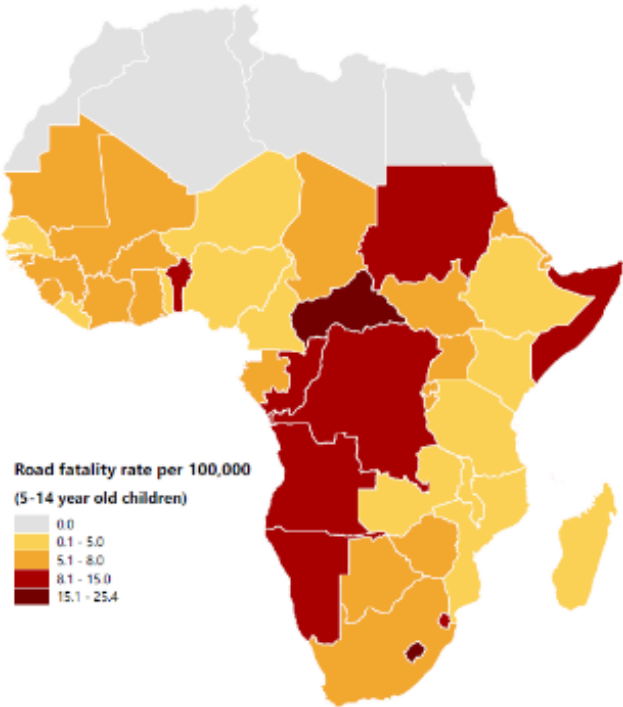
Improving road safety and vehicle quality standards also supports human capital accumulation. SSA has the highest levels of under-5 mortality from air pollution, with 184 deaths per 100,000 children (WHO). Benin is among the worst affected with 85 deaths per 100,000 children. Poorly maintained and old vehicle fleets and absence of clean mass transit solutions means that, despite low motorization rates, average exposure to air pollution in the country exceeds the world average by 34%. Similarly, lack of safe infrastructure and vehicles and enforcement of road safety regulations, mean that SSA has the highest road traffic fatality rate of any region, with Benin exceeding regional averages. These deaths wipe out years of investment in human capital and have long-term implications for the outcomes of surviving female family members. According to the INSAE, almost 1 in 10 accidents are associated with the quality of the infrastructure (in 2015). The condition of the vehicle fleet may also have an influence: 17% of the vehicles monitored by the Centre National de Sécurité Routière (CNSR) are in an irregular condition, mainly defective.

Box 3.4 Benchmarking Benin: roads and human capital

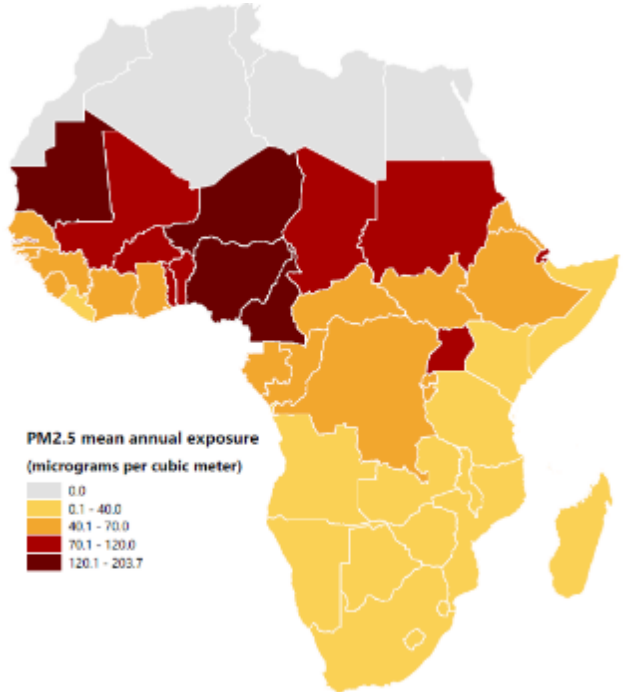
Rural Access Index
(latest available)



Road fatality rate per 100,000
(children 5-14 years old)



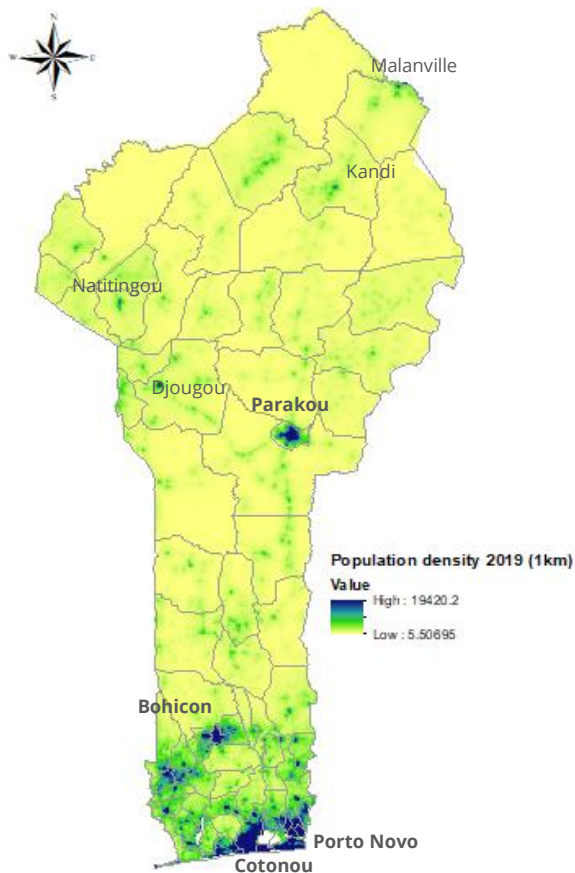
Average annual exposure to
PM2.5



Sources: Transport Global Practice Narrative (2019)

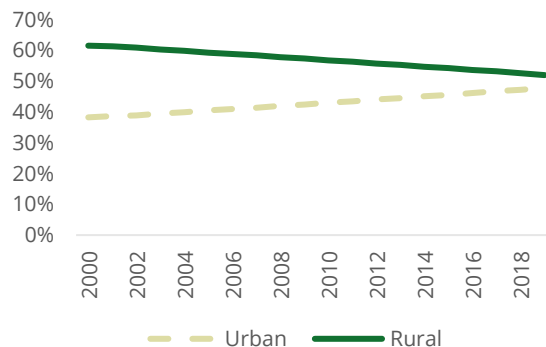
Half of the population lives in cities, above the SSA average

27 Population is increasingly locating in urban centers, particularly in the south



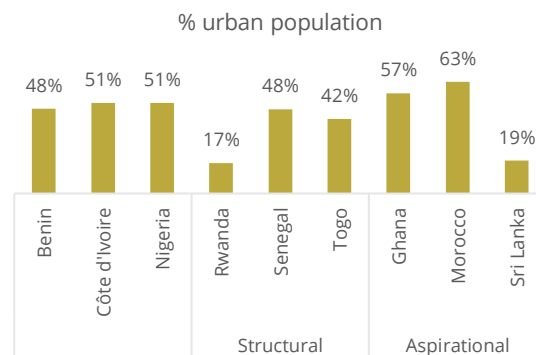
Sources: OSM, INSAE and authors' calculations

28 The share of the urban population has steadily risen...



Source: WDI 2020

29 ...placing Benin close to peers



Source: WDI 2020

3.2.2 Improving urban mobility should help trigger agglomeration economies

Urbanization has been steadily growing. While population growth in the last decade has been widespread across the country, most of the gains have happened in urban centers (notably in Parakou, Benin's third largest city, [Box 3.5](#)) and in the southern tip around Cotonou metropolitan area and Porto Novo. Benin has steadily urbanized as a result, driven by natural growth and rural-urban migration since the early 2000s. Even so, half of the population still lives in rural areas with departments in the center and north having disproportionately large shares of rural populations.

The urban environment is unbalanced, concentrated in four main urban areas (in bold in the map), Cotonou being the most important. The Cotonou metropolitan area accounts for about one-third of the country's GDP and has rapidly expanded to encompass Abomey-Calavi in the north and Sèmè-Kpodji in the east. In 2018, it counted 1.8 million inhabitants spread across 350 square kilometers ([SSTAP 2019](#)). This expansion creates huge volumes of commuter traffic, exacerbated by the fact that the city is a major hub for regional and international transport (either heading for [Dantokpa market](#), the PAC or the international airport, or transiting on the Abidjan-Lagos international highway).

SSA cities offer proximity but limited productivity. Developing country cities are often crowded, congested, polluted and home to few sophisticated firms and skilled workers that would benefit from being together. Evidence suggests a state of "sterile agglomeration"—density without productivity due to limited structural transformation and agglomeration externalities (Grover et al. *forthcoming*). So far, Benin's urban development fits this pattern. Reducing congestion costs and negative externalities could support the development of a more sophisticated private sector able to drive the process of structural transformation through better jobs outside agriculture (chapter I).

Box 3.5. The development of Parakou: The cotton capital

Parakou is Benin's third largest city after Cotonou and Porto Novo. It was home to 255,000 people in 2017 and with an urban extent of 62 square kms, density is much lower than in Cotonou. Located in the north of the country, it is the "cotton capital" and the center of the country's main agricultural region. It is located at the intersection of major international routes connecting neighboring countries (Burkina Faso, Niger, Togo and Nigeria) and is the terminus for the Cotonou-Parakou railway line (now not functioning). The development of Parakou is important for promoting jobs outside of agriculture in related services, thus supporting poverty reduction and structural transformation ([Christiaensen and Premand 2017](#)).

Developing urban transport services and infrastructure can help improve the urbanization process. Motorized two-wheelers are the main form of motorized traffic (more so than in Cotonou). However, the city does not suffer from the same congestion problems. Motorbike taxis, partially regulated by the municipality, provide the majority of "public transport". There are a few car taxi services operated by *Bénin Taxi*, tricycles provide transport services for luggage, and bush taxis offer connections with the neighboring towns and villages.

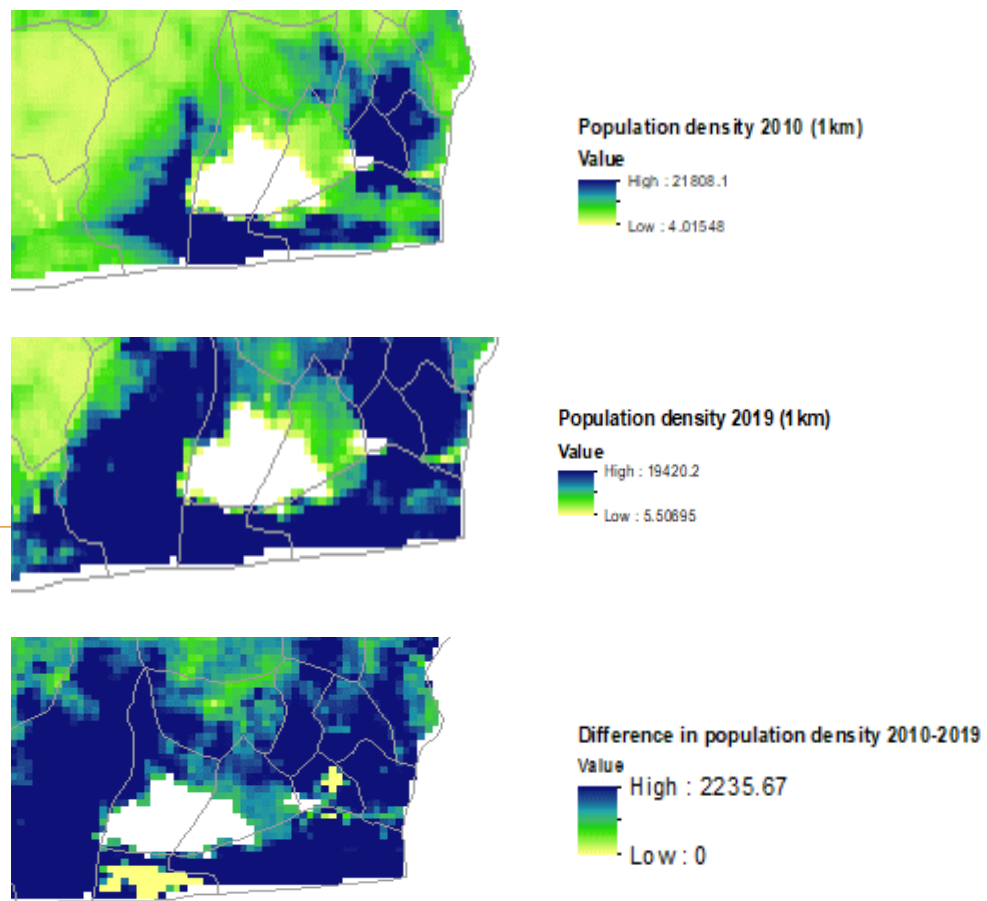
The asphalt road system is limited: 58 km, including 44 km of national roads and 31 km surfaced roads. The total number of unsurfaced tracks, which constitute the wide majority, is not known. As part of the PAG, two projects will particularly benefit the city of Parakou: the extension of a road system, including 68 km for the Parakou urban area; and the development of the Djogou-Pehunco-Kérou road.

As far as planning is concerned, urban development regulations do not appear to be enforced, and there is neither a mobility plan nor a traffic management plan. There are also no projects or policies aiming to create a collective urban transport service; nor is active mobility promoted even though the city's geography would lend itself to this.

Source: SSATP 2019 and AFDB 2014

Cotonou is sprawling outwards

30 The urban extent of Cotonou 2010-2019 proxied by population growth



Source: WorldPop and authors' calculations

In Cotonou, limited transport infrastructure and services reduce mobility

As in many African cities ([Lall and Henderson 2017](#)), urban land in Cotonou is being developed in small and disconnected fragments, sprawling outwards at low density. Limited transport infrastructure and services undermine connectivity and create congestion. This is exacerbated by the fact that the city is a major hub for regional and international transport.

The lack of public funding for collective transport has led to increased individual motorization. A comparatively low taxation and para-fiscal charges on individual transport, and poorly maintained infrastructure with a low number of surfaced roads (14% in Cotonou, 1% to 2% in Abomey-Calavi and Sèmè-Kpodji), have driven people towards individual motorized transport, especially private motorized two-wheelers or operated as informal, poorly regulated taxi services ([SSATP 2020](#)). This contributes to a high number of accidents and air pollution, aggravated by the poor quality of the fuel ([85% of fuel is imported informally from Nigeria](#)). There was an attempt by the company BenAfrik in 2012 to create a scheduled public transport service, that failed, among other reasons, due to high fares, a lack of reliability and frequency of service, excessive and highly variable travel times, and a lack of well-organized stops to promote intermodal travel ([SSATP 2020](#)).

Consequently, mobility remains severely restricted, not only physically but also due to the financial burden that current transport places on family budgets. Non-motorized transport is unpopular and only used by low-income groups, mainly because of safety problems, the absence of policy and planning for pedestrians and cyclists and encroached or badly maintained footpaths ([SSTAP 2019](#)). The urban mobility problem is also linked, to a large extent, to the condition of the streets, their narrow size and the constant risk of flooding. The PAG is addressing these challenges through the *Programme Asphaltage* ([Appendix 9](#)).

Although the situation in secondary cities is less critical, pre-emptive measures should be taken. Municipalities do not seem prepared to face the challenges: they have a broad mandate for urban mobility (organization, investment, management) but limited human and financial resources (Foussemi et al 2014).



Urban passenger transport

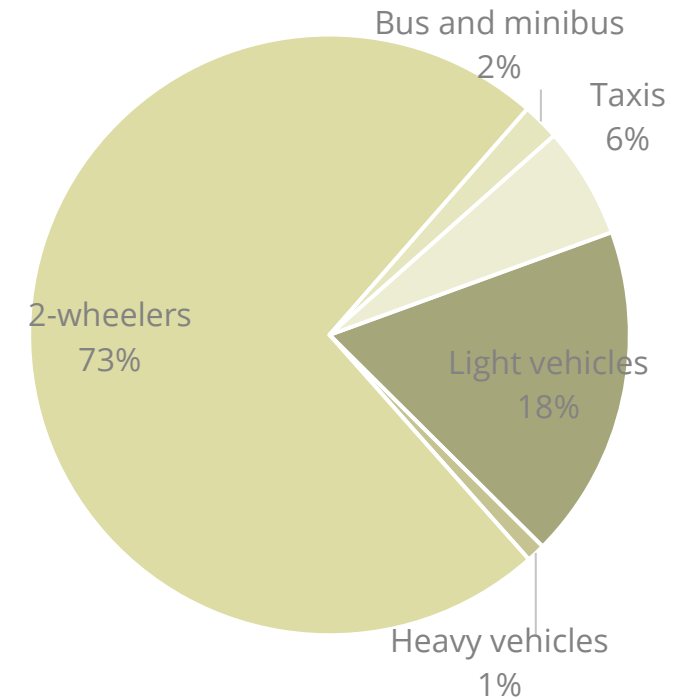
Two-wheelers contribute most to urban traffic

Other than private vehicles, passenger transport includes:

- Motorbike (two-wheelers) taxis (*zemidjans*), by far the main transport service in Benin's urban areas
- Taxi service, with urban taxis (or "Bénin Taxi") and intercity taxis, which have lower appeal due to limited flexibility and relatively high prices.
- Minibuses: these provide intercity transport with a greater capacity than taxis. Although they operate in an unregulated context, they do not offer a service in the urban area.
- Tricycles are currently developing their transport service in the main cities. They offer increased safety for passengers, and higher transport capacity than *zemidjans*.

Standard buses have disappeared with the end of BenAfrique. In a context of limited passenger transport options, two-wheelers dominate, making up three-quarters of traffic in Cotonou. In contrast, heavy vehicles only represent 1% of the total. The prevalence of this mode increase pollution and worsens road safety.

31 Composition of traffic in Cotonou (2017)



Source: EGIS 2018

Improving road traffic management around the PAC will help ease congestion and boost the port's efficiency

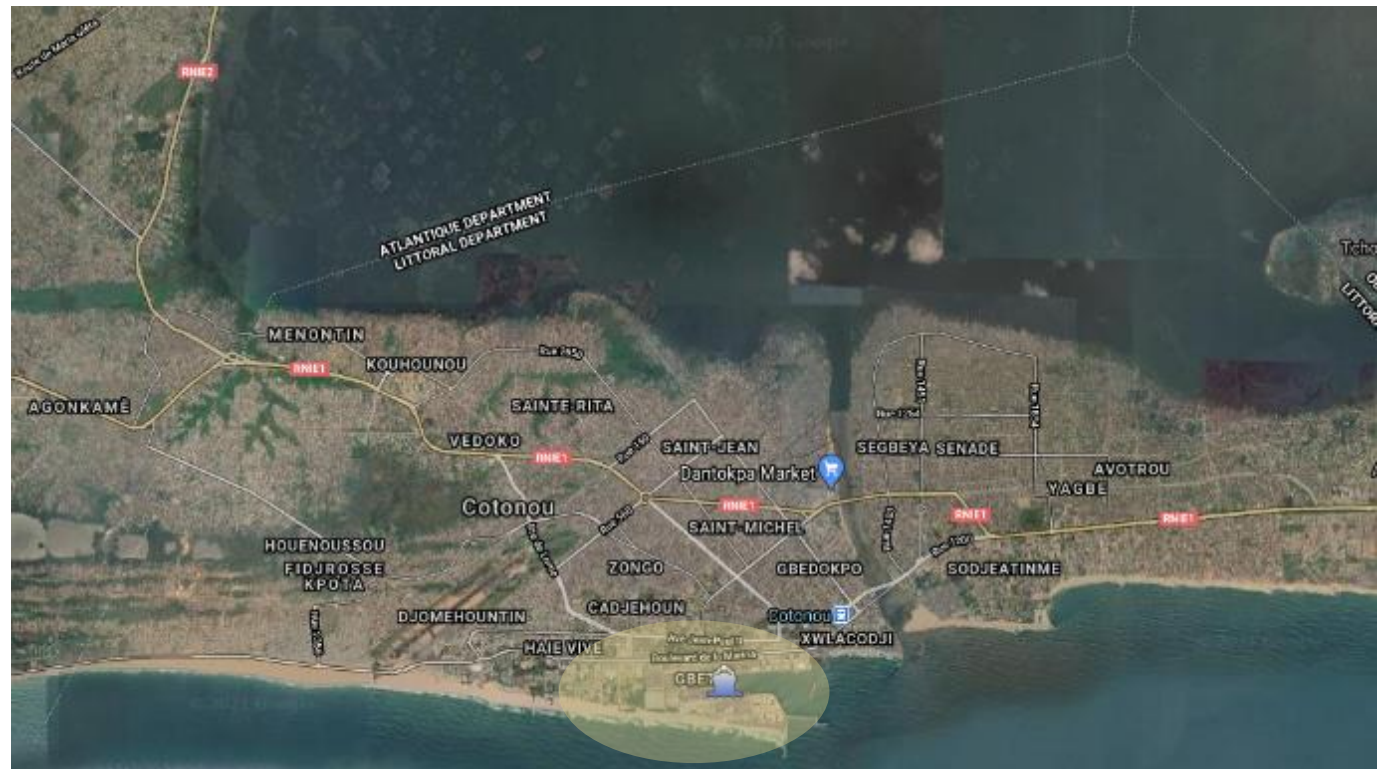
Enhanced traffic management around the PAC will improve the competitiveness of the logistics chain and the urban environment

Cotonou experiences significant levels of congestion, both periodic and occasional, which has a high impact on freight transport due to the uncertainty it generates in travel times.

Road congestion has two main effects on trucking: the time needed to cross the urban agglomeration increases during peak hours and the fuel consumption doubles (average travel time for truckers is 10-15% higher than baseline time during off-peak hours and 65% to 115% higher during morning rush hours). Ultimately, urban congestion increases the average cost per ton of freight carried by CFAF 332, according to 2016 estimates (EGIS 2018). This situation is likely to affect the logistical fluidity and consequently the competitiveness of the PAC. On the other hand, the significant volume of trucks that arrive at the port do not usually enter immediately, a situation that generates significant waiting lines on the side of the road. This greatly reduces the capacity of the adjacent roads and generates security problems and air pollution around the port (heavy vehicles are often very run down; Afrique Atlantique 2018).

The PAG projects *Asphaltage* and *CONOCO* under implementation plan to ease this bottleneck. Continued improvement in mobility around the PAC should further reduce congestion ([Appendix 9](#)).

32 Location of the PAC in Cotonou



Source: Google Maps

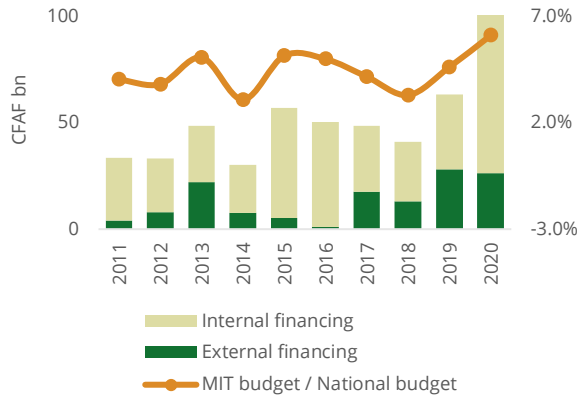
FINANCING THE TRANSPORT SECTOR AND STRENGTHENING THE REGULATORY FRAMEWORK

Financing the transport sector sustainably and improving the regulatory framework are crucial pillars of a modern transport sector that serves both people and firms. As in many LMICs, Benin's financing needs in infrastructure are large – adequate prioritization is paramount, as is increased private participation. Improving the regulatory framework and governance structure can yield large gains.

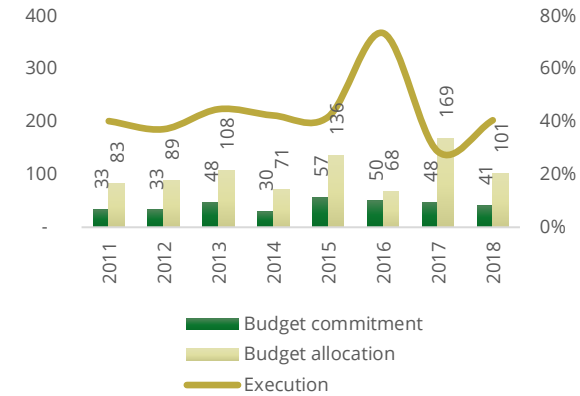
3.3

Public investment in the transport sector remains moderate

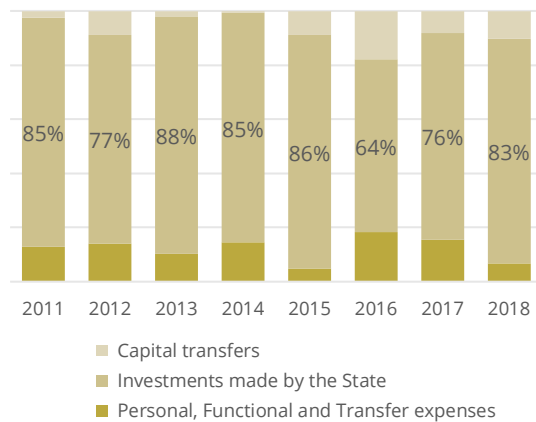
33 External financing averaged 23% of the budget over 2011-2020



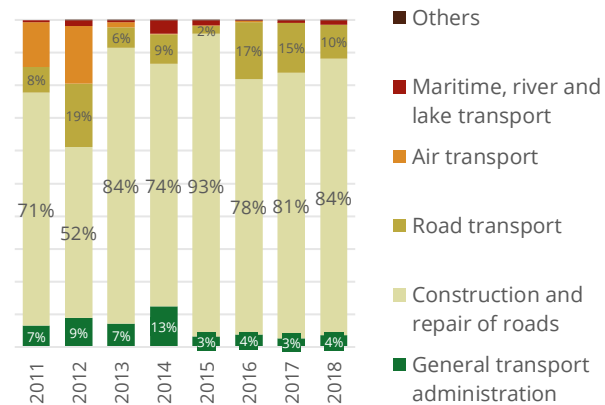
34 Execution is low due to externally financed projects



35 Capital expenditure is the majority of MIT's allocated budget...



36 ... and mostly in the road sector



3.3.1 Large financing needs call for prioritization and stronger planning

With a volatile transport budget and substantial needs, enhanced prioritization and planning are needed. Most of the annual budget of the Ministry for Infrastructure and Transport (MIT) is domestically-financed, with a volatile share of externally-financed sources that has averaged 23% over 2011-2020 (a 33% decline from the previous decade). The overall committed budget as a share of the national budget has seen an uptick in the last two years, linked to the PAG flagship projects. In 2019-2020, it was 5.3% of the national budget, pushed up as the sector was prioritized to support growth and job creation during the [COVID-19](#) pandemic. As the country exits the crisis, the large investment needs in the transport sector will have to be adequately prioritized and planned in a context of fiscal consolidation (chapter I). Strengthening the [Public Investment Management \(PIM\) framework](#) will be crucial to ensure returns on investments, including through adequate prioritization.

Most of MIT's budget is allocated to capital expenses, mainly in the road sector. Capital expenses averaged 80% over 2011-2020. Despite this, the values are relatively low in absolute terms, just over US\$ 60 million in 2018. However, rural roads are financed from [FADeC](#) (commune) funds, which add to this budget. Within the transport function, most of the committed budget (more than 95% in recent years) corresponds to the road sector due to the PAG projects.

Execution appears low, reflecting two things: 1) the time mismatch between programmatic funding allocations and annual spending; and 2) the lesser execution of externally-financed projects, due to complex procurement processes. When measured against annual spending, the execution of domestically-financed transport investments is the highest of all sectors in the Public Investment Plan (PIP). In 2020, it was 98.9% for capital spending and 75.9% for recurrent spending.

Source: Benin Boost, Notes: percent of total

Transport represents one quarter of the Public Investment Plan

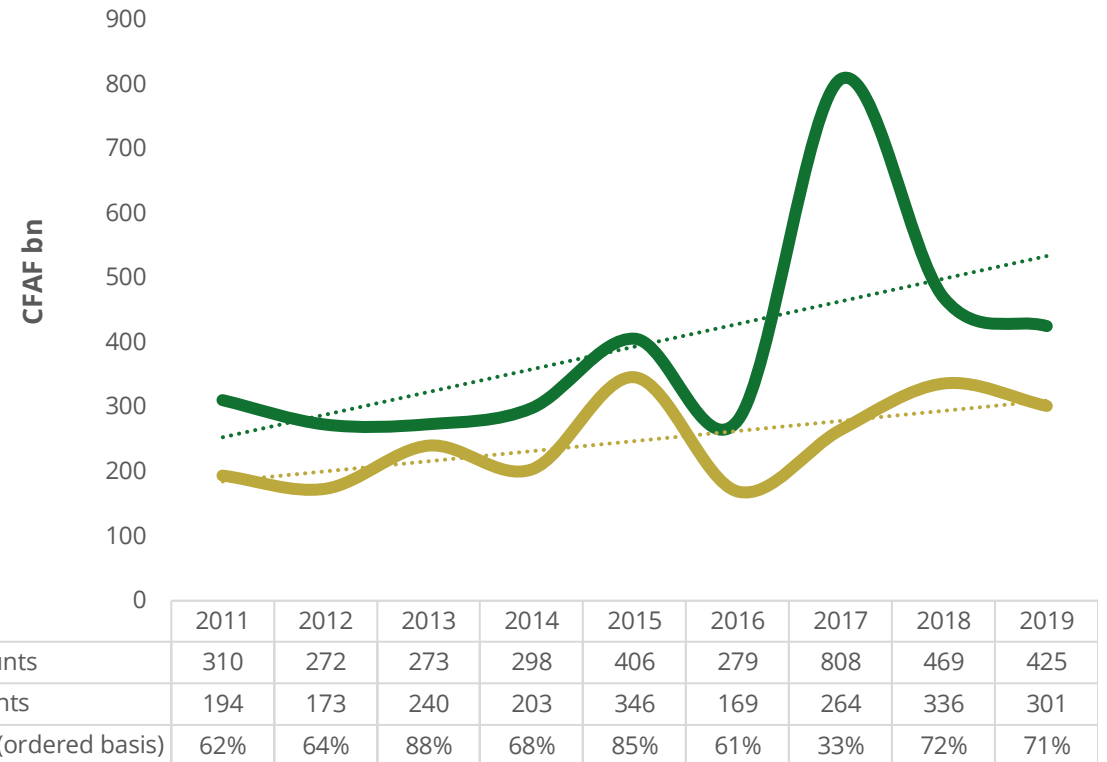
The PIP has increased in terms of both allocated and executed amounts in recent years, with the MIT representing a significant portion

The PIP encompasses three main sectors: productive sectors (59%); social sectors (29%); and public administration (12%), in line with the PAG. Different sources are used to finance it: the national budget finances half, with the remainder split between loans (38.4%) and grants (15.9%). The credits allocated have increased since 2012, peaking in 2017.

In 2019, the PIP included 200 projects and programs for a total allocated amount of CFAF 425 billion (5% of GDP), including 25 projects/programs in the transport sector. The sector is the second-most important for both amount and projects, after the Ministry of the Environment and Sustainable Development.

While the overall level of execution remains adequate, at close to 70% on average (excluding 2017), several hurdles prevent higher execution rates – including problems with the PIM and public procurement processes. Most notably, these include slow processing of public contracts, late validation of working plans, difficult access to the Integrated Public Finance Management System (SIGFIP), weak financial capacity of companies, insufficient budget allocations, insufficient ordered resources, and delays in data transmission (MPD 2020c).

37 PIP amounts peaked in 2017



Source: MPD 2020c

Limited road user charges undermine road maintenance

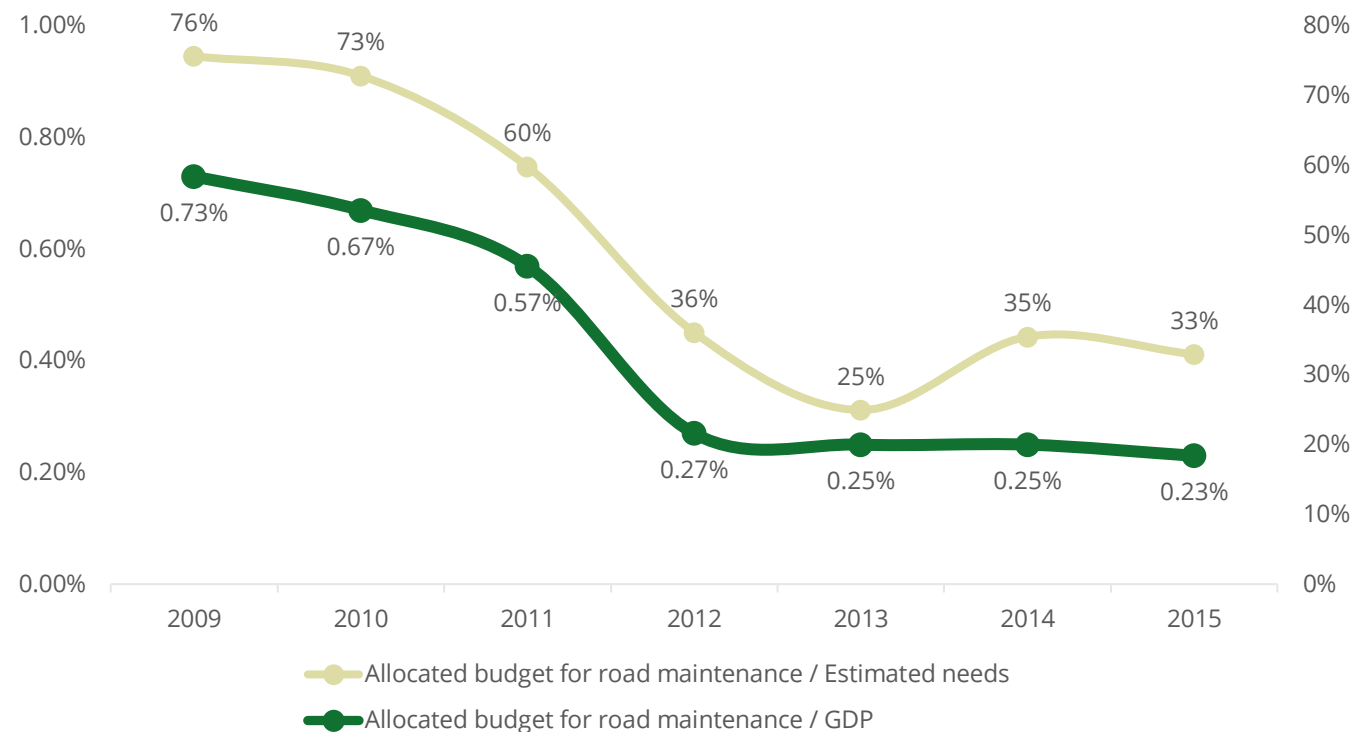
Financing roads, particularly periodic maintenance, is a major challenge due to limited revenue sources

Road maintenance has traditionally been carried out by the Road Fund (Box 3.6), but it is now being transferred to a parastatal. It was initially expected to cover the full cost of maintenance, but limited sources of funding – covering only 30% of needs – have prevented it from adequately fulfilling this role. Fuel taxes, vehicle-related fees and toll revenues are the main funding sources for road infrastructure. On average, the fuel levy makes up to 76% of revenues in SSA, ranging from 100% in Senegal and Guinea to about 30% in Niger (World Bank 2019). In Benin, fuel taxes have historically been low due to fuel smuggling from Nigeria. Other resources are mobilized to supplement that limited income, mostly transit fees and tolls – but are insufficient to cover periodic road maintenance. Recently, the creation of the Society of Road Infrastructures (SIRB) to administer and develop roads (SSTAP 2019) led to the dissolution of the Road Fund. As it is being set up, funding sources should be carefully analyzed in terms of competitiveness and affordability.

Road asset management in general remains weak. Road data management systems are poor and hindered by the lack of annual updates. The SIRGPR (*Règlementation et de la Gestion du Patrimoine Routier*) has the oversight function. However, weak capacity for programming, bidding, contracting and controlling maintenance operations is a continuous bottleneck (BOAD 2015). The standard maintenance works tender takes between 6 and 12 months. Capacity of local SMEs for carrying out maintenance works is low.

38

Financing for road maintenance relative to needs has declined steeply



Source: BOAD 2015

Box 3.6 Towards the next generation of Road Funds?

Fuel taxes, vehicle-related fees and toll revenues are the main funding sources for road infrastructure

In general, these resources can be channeled through a Road Fund (RF) or go to support a budget allocation, in addition to other public funds, whether sourced from tax revenues or debt. Road Funds gather most of their resources from road user charges (RUCs), and the highest share still comes from fuel levy revenues. The second and third largest components of RUC revenues are vehicle license and registration fees, and tolls.

Unfortunately, in ECOWAS, the information on actual spending and on-budget transfers is not always well disaggregated to distinguish maintenance and rehabilitation. Moreover, many road authorities do not publish these figures. However, the levels of resources vary widely across those ECOWAS countries with Road Funds but remain insufficient to cover the cost of routine and periodic maintenance. The constant maintenance backlog forces Road Agencies to undertake spot reconstructions when sections of the road network have reached a condition where maintenance is no longer a viable technical solution. This explains why a growing number of them have requested amendments to their articles of incorporation and by-laws to include these activities.

Given the fragility of RFs in SSA, there have been significant efforts to promote an upgrade to what is known as the 3rd generation of RFs (3G-RF). Compared to 2nd generations, the focus is on strengthening funding sources and amounts, the scope of works to be carried out, and governance and overall autonomy. Increasing private sector participation in the sector is also an objective of 3G-RFs. However, there are still many limitations to achieve this in most countries in SSA. Low levels of affordability by users and relatively contained traffic limit the bankability of many projects. In fact, there are not many cases of toll roads in the region⁽ⁱ⁾ and PPP examples are limited. Traffic along the key regional corridors in the ECOWAS region is moderate to heavy with the most heavily used routes typically in poorest condition (i.e., the two gateways into Burkina Faso, and the Cotonou-to-Niamey route).

3rd generation RFs might be still a long way off in SSA. First, countries need to improve the governance of the sector and focus on domestic revenue mobilization to generate a stable source of funding for periodic maintenance. Overall reforms to develop the business environment, the rule of law and deepening the financing sector will also be crucial to ignite the transformation.

⁽ⁱ⁾ Examples are Abidjan Lagoon Toll Bridge in Côte d'Ivoire, the Lekki-Epe Expressway in Nigeria, and Dakar Diamniadio Toll Road in Senegal, amount to more than US\$1.2b of expected investment at the time of financial closure.

Source: World Bank ECOWAS InfraSAP, forthcoming; [World Bank 2019](#).

Private participation in infrastructure is still nascent in the region

As for other countries in the region, it has been difficult to set up private financing schemes in transport infrastructure

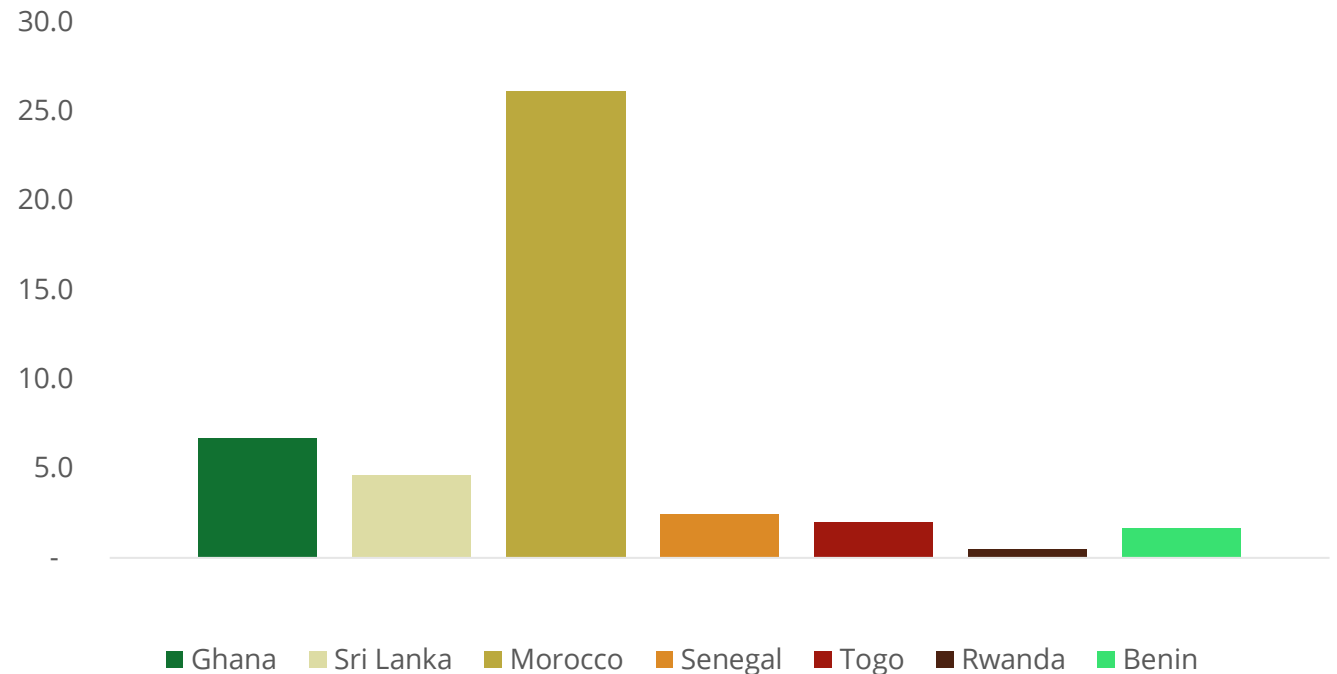
PPPs are emerging as an important mode for financing infrastructure projects in several developing countries.

In SSA, one of the main factors behind the transport infrastructure gap is the difficulty of finding funding due to projects' limited revenue generation capacity. While seaports, airports and some railroad projects (mining) have been able to bring on board the private sector through PPP schemes, roads and secondary infrastructure are more problematic as they often lack the capacity to generate revenues from users, even when they are economically profitable (WB ECOWAS InfraSAP). The creditworthiness of the sovereign to honor the commitment is also key. In fact, even when some funding from users and taxpayers can be collected, the monetization of the future revenues in financing markets could lead to large discount factors due to the inherent risk of this business and its enabling framework. The limited attractiveness of PPP so far in the region, including in Benin, reflects this reality.

As funding is limited, a carefully evaluation of the investment pipeline based on the economic return is crucial. Projects with high potential to develop new business and job opportunities should be also analyzed in the context of their capacity to increase tax collection and user revenues. A strong institutional and regulatory framework is paramount.

39 Total PPP capital stock is limited but on par with structural peers

Public-private partnership (PPP) capital stock in billions of constant 2011 international dollars (2010-2017)



Source: IMF Investment and Capital Stock Dataset, 2020

3.3.2 Institutions and regulations governing transport and investment need strengthening

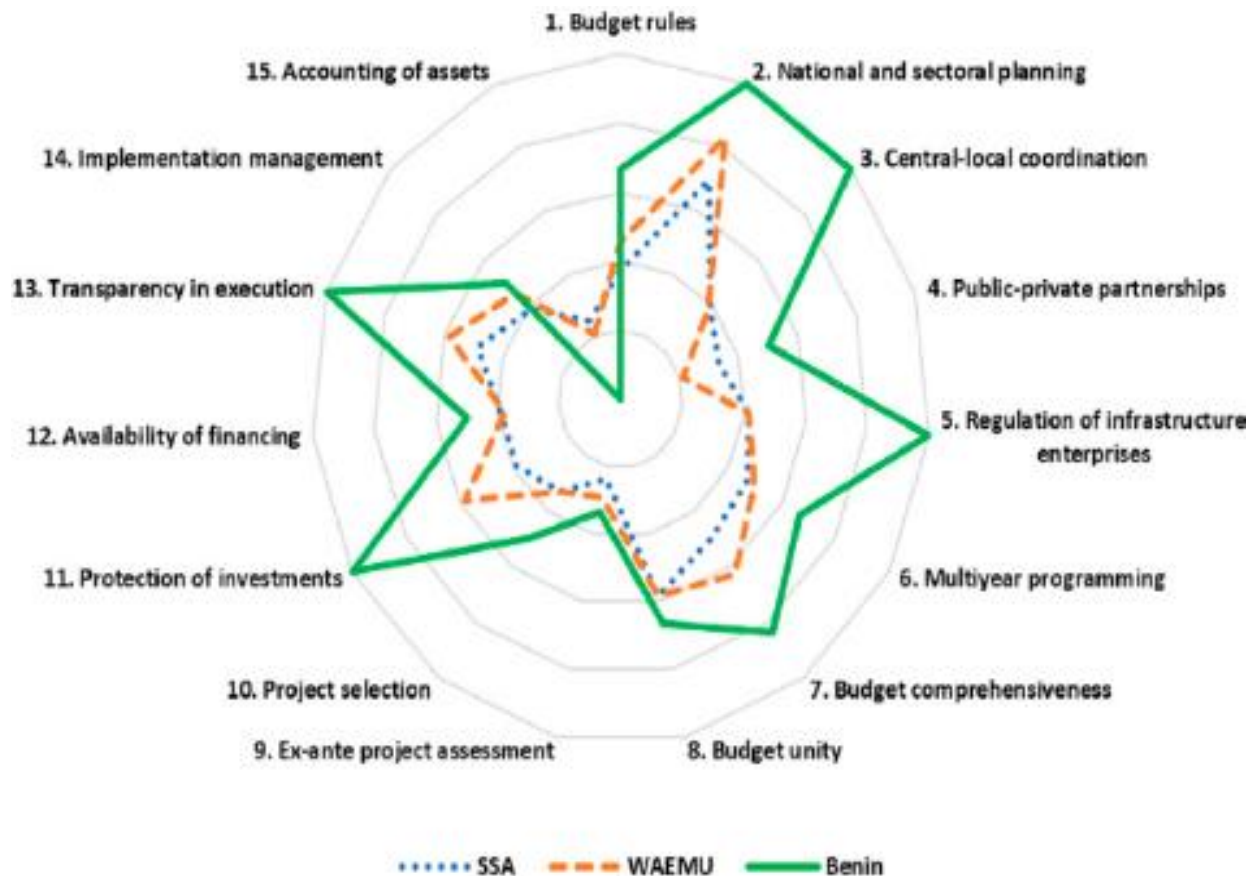


There are several institutions governing the transport sector. The main supervision role falls under the Ministry for Infrastructure and Transport (MIT) ([Appendix 10](#)). The MIT's mission is to develop and ensure implementation, monitoring and evaluation of the state's general policy on land, sea and fluvio-lagoon, and aerial transport. It also oversees public works and other infrastructure, in accordance with the laws and regulations in force in the Republic of Benin. Among the MIT's main roles is its regulatory role, that is, ensuring compliance with technical standards and regulations in all areas of its competence. In practice, many organizations reporting to the MIT are responsible for these tasks (e.g. Road Safety Agency). Meanwhile the Ministry of Planning and Development oversees the PIP, and the PAG projects are housed within the Presidency. In the communes, there is a communal network that governs the agricultural roads managed by the municipalities, partially funded by the *Fonds d'Appui au Développement des Communes* (FADeC) and supervised by the *Commission Nationale des Finances Locales* (CONAFIL)

There is a disconnect between urban passenger transport and other modes. Currently transport legislation is mainly focused on national and extra-urban road networks, intercity and goods transport, and the role of the government and its agencies in these areas. The role of the government in urban mobility is poorly defined, and the concept is not emphasized in the sectoral legislation. The Ministry for Sustainable Development has a more prominent role regarding urban transport. Municipalities have limited regulatory powers for urban transport and management due to lack of funding.

Overall, transport regulations are not well enforced, despite the adoption of regional standards, because of weak implementation capacity and oversight. The weak regulatory framework encompasses road safety norms, vehicle standards, and weight regulations. For example, truck overloading is a common practice (concerning 80% of trucks). The SIRGPR theoretically oversees the norms and procedures for vehicle weights and axel loads of heavy weight vehicles transporting goods – in line with the 2004 WAEMU regulations – but in practice oversight is limited. Benin should rely on regional initiatives and strengthen their implementation to increase standards.

[See more: Leveraging regional initiatives to meet international standards \(Box 3.7\).](#)



Source: IMF 2020a

Stronger public investment management is needed to increase efficiency and returns on investment

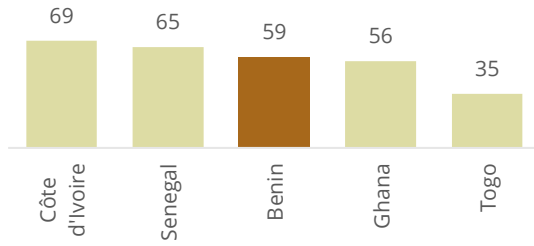
The quality of public investment depends on the efficiency of the PIM framework. On average, countries lose over one-third of potential benefits from infrastructure investment due to inefficiencies (IMF 2019). Globally, poor project appraisal, rent-seeking, corruption in procurement processes, and inadequate maintenance, are all examples of inefficiencies that are costly to societies. Quality infrastructure is closely linked to good infrastructure governance (IMF 2020b). Efficient public investment management has been found to double the growth impact of public investment (IMF 2015). Understanding the quality of PIM is thus crucial to increase public expenditure quality and its contribution to growth and poverty reduction.

Benin's institutional framework is of high quality, but ineffective implementation is limiting the sustainability and quality of investments (IMF 2020a). Benin has a relatively complete and high-quality PIM framework, outperforming its peers, both in the WAEMU and SSA region. However, the effectiveness of this framework can continue to be improved and significant progress has been made since 2017 that can be enhanced.

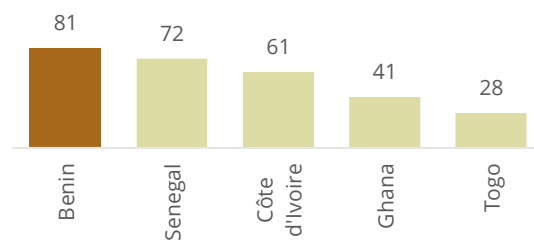
The aim is to make the various phases of the investment management process more efficient. According to the PIMA, project selection and ex-ante and ex-post evaluations are not carried out in a systematic way. Outside of large-scale, externally funded projects, formally established feasibility studies and cost-benefit analyses are not systematically conducted or reviewed. Procurement processes are slow and significantly delayed, although the adoption of the new procurement code in 2020 has simplified procedures, reduced transaction costs, and improved accountability. These changes have made processes more competitive, increased bidder participation, and cut the time to award and sign contracts in half.

Benin's capacity to implement sustainable PPPs is average

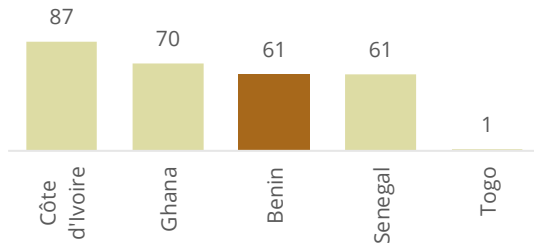
41 Overall score



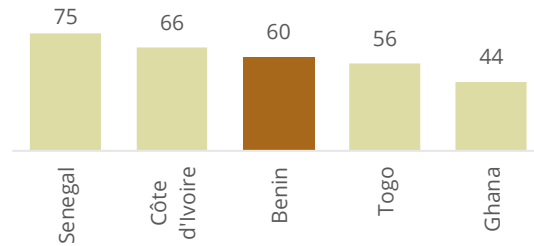
42 Regulations



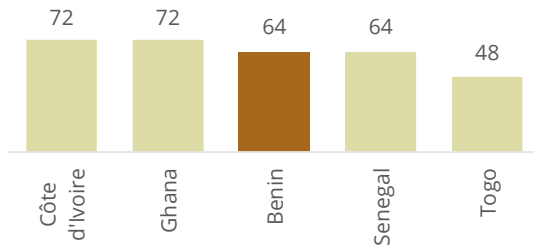
43 Institutions



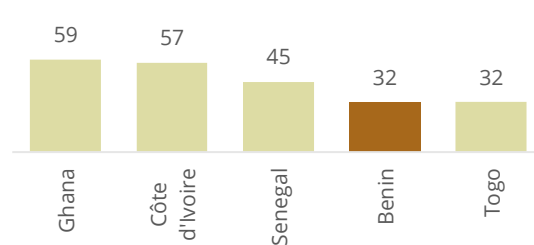
44 Maturity



45 Investment & business climate



46 Financing



Source: EIU 2019, Infrascope Index

Implementation of the PPP framework needs improvement

The PPP framework was put in place in 2017-2018 with the promulgation of the PPP Law 2016-24, and various implementing decrees. Key agencies include the PPP Support Unit, a line ministry level body that reports to the Council of Ministers and is responsible for providing technical support at all stages of the process, including the review of the quality-price ratio; the National Procurement Control Department, overseeing the call for tenders; and the Public Market Regulatory Authority, which mediates disputes between private partners and contracting authorities.

In its current form, the legal framework has shortcomings when compared to international best practices. The main issue relates to the broad definition of PPP, which allows all standard contracts to be designated as PPPs. Rules and oversight are also limited: public disclosure is not required of all contracts signed by the government or commitment authorizations issued by Parliament; nor is the state obliged to respect ceilings on financial commitments in connection with PPPs, whether they are implicit or explicit. Finally, budgetary control during execution is not specified and there are no rules regulating unsolicited proposals (IMF 2020a). According to the [Infrascope Index](#) (a benchmarking tool evaluating the capacity to implement sustainable and efficient PPPs), Benin's performance is average against comparator countries. Its largest deficiencies are in the financing component that measures the financing facilities for infrastructure projects.

In the region, only Nigeria has comprehensive and specific PPP legislation good enough to support private sector participation in infrastructure projects. Institutional and regulatory imperfections notwithstanding, many countries have completed PPP transactions in the port sector. The lack of prior experience in the design, negotiation and award of concessions in the infrastructure sector, and specifically in the port industry, has however given a clear advantage to private negotiators (WB ECOWAS InfraSAP). Although sensitive, knowledge exchange can be enhanced at the regional level – both in WAEMU and ECOWAS – to strengthen the bargaining position of conceding authorities.

Benin adopted Law No. 2016-24 of June 28th, 2017, that set up the legal framework of the PPP. Five decrees have been implemented: Decree No. 2018-028 of January 31st, 2018, related to the ad hoc commissions in charge of PPP procurement procedures; Decree No. 2018-156 of May 2nd, 2018, creating the "Cellule d'appui aux PPP" (PPP Unit); Decree No. 2018-039 of January 31st, 2018, related to the control and regulation of PPP procurement and operation; Decree No. 2018-424 of September 19th, 2018, that set up PPP's catalogue for the whole country; and Decree No. 2018-360 of 31st July 2018 that defines the tax regime of PPP contracts in Republic of Benin. Pursuant to the PPP law, delegations of public service are now governed by the above-mentioned PPP law instead of the Public Procurement Code. (CPCS 2020)

Box 3.7 Leveraging regional transport initiatives

ECOWAS has put in place a transport program to facilitate the movement of people, goods, and services in the region. One of the main activities is the regional road transport and transit facilitation program, which emphasizes a Joint Border Posts (JBP) program (including infrastructure, legal framework and operational manuals). ECOWAS is also working on an axle load harmonization policy, the Road Transport Observatory and the Nigeria-Cameroon Multinational Highway and Transport Facilitation Program developed as part of the Trans-Africa Highway program. Further, the ECOWAS Commission is partnering with the West African Road Safety Organization (WARSO) to enhance the capacity of authorities, road safety management and safety awareness.

The ECOWAS Inter-State Road Transport Convention allows pairs of member states to conclude bilateral treaties. While it is difficult to ascertain whether freight sharing rules are a key cause of high transport prices in the region, they do encourage over supply of transport capacity and collusion among truck operators when it comes to pricing their services. In West and Central Africa where these conventions exist, the price of long-haul trucking was higher than in the rest of Africa because the over supply of transport capacity resulted in chronic underutilization of truck capacity (i.e., lower or lowest average distance per truck per year in all of Africa) which, in turn, resulted in a continuous increase in tariffs to cover higher direct and fixed costs per km operated. ECOWAS transport agreements give specific percentages of the freight passing through a coastal country's port to a landlocked country to the truckers of each of the two countries. Typically, 'strategic' goods are 100% allocated to the landlocked country, while non-strategic goods are allocated 2/3 to the landlocked country and 1/3 to the coastal country. Several such bilateral treaties exist, and shippers' councils from landlocked countries oversee their application.

Some other initiatives also exist at the WAEMU level, though they could be strengthened. For example, in the area of PPPs, the WAEMU Commission holds some oversight capacity. The contested concession of the second container terminal in Abidjan was disputed on the basis of competition regulations both in Côte d'Ivoire, with the public procurement agency, and regionally, with the WAEMU Commission. This raises the option of strengthening the advisory role of the regional commission.

Source: World Bank, ECOWAS InfraSAP forthcoming.

POLICY OPTIONS

3.4

Key policy options (1/2)

	Timeline for implementation	Fiscal costs
Regulations and planning for transport infrastructure and services		
<p>1. Strengthen road asset management. Ensure the new SIRB has identify dedicated and predictable funding sources for road maintenance and rehabilitation based on the ‘user-payer’ principle to apply structured user charges to cover the full cost of road maintenance and rehabilitation, traffic management, and road safety enhancements (for example, a special tax on vehicle ownership or a direct charge on vehicle use if adequate distributional assessment is carried out); and reinforce the capacity of road agencies and asset management systems.</p>	Short term	High
<p>2. Strengthen the prioritization tools for rural road investments. Multi-Criteria Decision (MCD) models have become widely used as the main prioritization tool for road investment in recent years. They have the flexibility of being combined with other mechanisms such as participatory approaches and being adaptable to policy priorities.</p>	Medium-term	Low (with potential fiscal gains)
<p>3. Enhance the oversight and monitoring capacity for road safety and vehicle standards. The most urgent road safety challenge in Benin is protecting pedestrians, who make up most of road fatalities, through the Safe System approach (safe roads and roadsides, safe vehicles, safe road users, safe speeds, and effective post-crash care). Specific recommendations include establishing a high-level national safety council, conducting safety audits on all new road and road improvement designs, and developing a comprehensive national road safety program. Institutional capacity to manage road safety should be strengthened to improve interagency coordination.</p>	Short term	Low to medium
<p>4. Improve efficiency in the trucking industry while preventing road deterioration. Conduct a proper assessment of the bottlenecks to professionalizing the sector, including the functioning of the transport market. Facilitate the renewal of the truck fleet and streamline trade and transit procedures. Effective action against vehicle overloading cannot be limited to the installation and operation of weighing stations, not even with the full enforcement of axle-load regulations. It must be extended to all the sector stakeholders responsible for truck overloading, especially transport companies, shippers, and logistic operators. The issue should be tackled at the regional level and at different subsector levels (transport liberalization, port operation reforms and coordinated regional actions) to avoid distortions in competition and traffic diversions.</p>	Medium-term	Medium

Notes: short-term (1 year); medium-term (2-3 years); long term is +3 years; fiscal implications are estimated as low: affordable within current spending structure; medium: requires budget reallocation; high: need further reform, funding sources and DRM

Key policy options (2/2)

	Timeline for implementation	Fiscal costs
Urban mobility		
<p>5. Improve road traffic management to ease congestion in Cotonou-PAC. The CONOCO and Asphaltage projects address part of this challenge. Continuing to reinforce traffic management can complement the infrastructure investment (e.g. regulations for peak/off peak heavy vehicle traffic for example; and light infrastructure projects to regulate traffic).</p>	Medium term	Low
<p>6. Define the institutions and mechanisms regulating and planning urban mobility, Strengthen the role of municipalities regarding planning and funding of urban mobility, and enhance interagency coordination with key agencies in charge of road safety and environmental regulations/vehicle standards.</p>	Long term	Low
Funding and financing		
<p>7. Strengthen the PPP framework and create knowledge-sharing mechanism to improve capacity. Improving private sector participation in infrastructure will become more important in the coming years as countries exit COVID-19. Priorities in Benin are to enhance the definition of PPP; strengthen rules and oversight mechanisms; and ensure budgetary control during execution.</p>	Short term	Low (with potential fiscal gains)
<p>8. Address the main bottlenecks in the PIM framework and public procurement. To enhance the PIM framework, project selection and ex-ante and ex-post assessments should be regulated and made systematic. Mechanism to regulate the pre-financing unsolicited proposals could be put in place. The new procurement law (2020) needs to be fully implemented with adequate implementing decrees.</p>	Short term	Low (with potential fiscal gains)

Notes: short-term (1 year); medium-term (2-3 years); long term is +3 years; fiscal implications are estimated as low: affordable within current spending structure; medium: requires budget reallocation; high: need further reform, funding sources and domestic revenue mobilization.

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- WHO. 2018. "Global status report on road safety 2018". World Health Organization.

TERMS AND DEFINITIONS

Agglomeration economies	Agglomeration economies are the benefits that come when firms and people locate near one another in cities and industrial clusters. These benefits all ultimately come from transport costs savings: the only real difference between a nearby firm and one across the continent is that it is easier to connect with a neighbor. Of course, transportation costs must be interpreted broadly, and they include the difficulties in exchanging goods, people, and ideas (Glaeser 2010).
Informality	A term used to describe the set of firms, workers, and activities that operates outside the legal and regulatory framework or outside the modern economy (Perry et al 2007). It denotes activities ranging from legally constituted companies to workers in subsistence activities, but the latter are more prevalent.
Market access potential	A measure of market access size, estimated as land-based travel time to the nearest densely-populated area.
Nigeria's border closure	The period between August 2019-December 2020, during which Nigeria unilaterally closed its land border with neighbors.
Port classification	Ports are classified into various types considering a variety of factors such as location, depth, purpose, and ship sized There are five major types of natural or man-made ports: inland ports, fishing ports, dry ports, warm water ports and seaports. Depending on port terminal capacity and logistics, some ports are classified as transshipment ports, where several different shipping lines operate and carry out freight transfers. Dry ports (sometimes referred to as an inland port) are inland intermodal terminals directly connected by road or rail to a seaport, operating as a center for the transshipment of sea cargo to inland destinations.
Rural Access Index	The Rural Access Index (RAI) measures the proportion of the rural population who live within 2 km of an all-season road. It is included in the Sustainable Development Goals as indicator 9.1.1, providing a way of measuring progress towards Goal 9 and Target 9.1. Originally developed by the World Bank in 2006, the RAI is among the most important global development indicators in the transport sector.
Trade facilitation	When policymakers talk about “trade facilitation”, they are referring to a specific set of measures that streamline and simplify the technical and legal procedures for products entering or leaving a country to be traded internationally. As such, trade facilitation covers the full spectrum of border procedures, from the electronic exchange of data about a shipment, to the simplification and harmonization of trade documents, and the possibility to appeal administrative decisions by border agencies (OECD).
World Bank country classifications by income level	World Bank country classifications by income level (2020-2021) classify the world's economies into the following four income groups based on gross national income (GNI) per capita (current USD based on Atlas method exchange rates): low (<1,036), lower-middle (1,036-4,045), upper-middle (4,046-12,535) and high-income (>12,535) countries. In sub-Saharan Africa, high-income countries (HICs) include Mauritius and Seychelles, and upper-middle income countries (UMCs) include Botswana, Equatorial Guinea, Gabon, Namibia and South Africa.
Zemidjan	A <i>zémidjan</i> (or <i>zem</i>) is a type of taxi found in Benin, West Africa. The highest concentration is found in the largest city, Cotonou, where there are an estimated 72,000. Zémidjans are motorcycles that carry one to two passengers for short distances in towns. The fares are entirely negotiable.

APPENDIX

Chapter III. Connecting People and Markets for Economic Transformation

1. Benchmarking – structural, and aspirational peers and regional comparisons

To identify Benin’s comparator countries, the team combined inputs from the Country Scan Tool with local country context. A set of criteria was used to select countries (see Chapter I).

01 Structural peers

Togo, Rwanda and Senegal These countries have similar economic and structural characteristics as Benin.

03 WAEMU & ECOWAS

WAEMU countries include Benin, Guinea-Bissau, Burkina Faso, Côte d’Ivoire, Mali, Niger, Senegal, and Togo.

ECOWAS countries include the WAEMU countries and Cabo Verde, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, and Sierra Leone.

02 Aspirational peers

Ghana, Morocco, and Sri Lanka. These countries are LMICs that set a good development precedent, having started from a similar position as Benin.

04 Other categories

Benin will also be compared with SSA average, low-income (LICs) and lower-middle income (LMICs) country averages.

In this chapter, Benin will also be compared with relevant competitors for road and port infrastructure.



Criteria for selecting structural and aspirational peers

- GDP per capita (constant 2010 US\$)
- Population 2019
- Trade (% of GDP)
- Agriculture, value added (% of GDP)
- Human Capital Index
- Country Policy and Institutional Assessment

2. Informal cross-border trade

Official trade statistics for Benin and Nigeria hide huge unrecorded informal trade between the two countries.

Benin and Nigeria have a long history of informal cross-border trade (ICBT) linked to long-standing cultural affinities ([Golub 2012](#)) common to various countries in West Africa. Togo, Benin, Nigeria and other countries are characterized by north-south ethnic and religious divides, providing an impetus for east-west trade that crosses borders. Nigeria's high levels of protection, poorly functioning ports, and currency controls have incentivized these linkages.

As a result, Benin imports – for re-exporting to Nigeria – a large quantity of consumer goods subject to import protection in this country (second-hand cars, cloth, rice and frozen poultry stand out). In the opposite direction, Benin imports a large proportion of fuel from Nigeria, where consumer prices have historically been highly subsidized. It is estimated that close to 80% of fuel consumed in Benin is informally imported from Nigeria (it is called *Kpayo*). This two-way cross-border trade accounts for a large share of Benin's income, tax revenue (through imports) and employment.

Re-export activities are organized are both official and unofficial. In the first case, imported goods are declared for re-export or for transit to Nigeria. In the second case, imported goods are declared for transit to neighboring landlocked countries or for the domestic market, and later diverted to Nigeria through a network of informal intermediaries. Either way, the import process is fully formal and legal. The unofficial (illegal) aspect occurs when customs rules are bent or when these goods are smuggled into Nigeria. Goods can cross the border by land or water and there is service infrastructure (warehouses, markets, etc.) along the border that supports these operations.

Boosting unofficial re-export trade as a pillar of Benin's economy has considerable downsides, mainly vulnerability to changes in economic conditions and trade protection policies in Nigeria, which can affect government tax revenues and negatively impact on the activities of the Port of Cotonou and other service sectors.

For more details see Chapter IV.

Source: EDI 2019 (INSAE)

3. Port calls and performance statistics

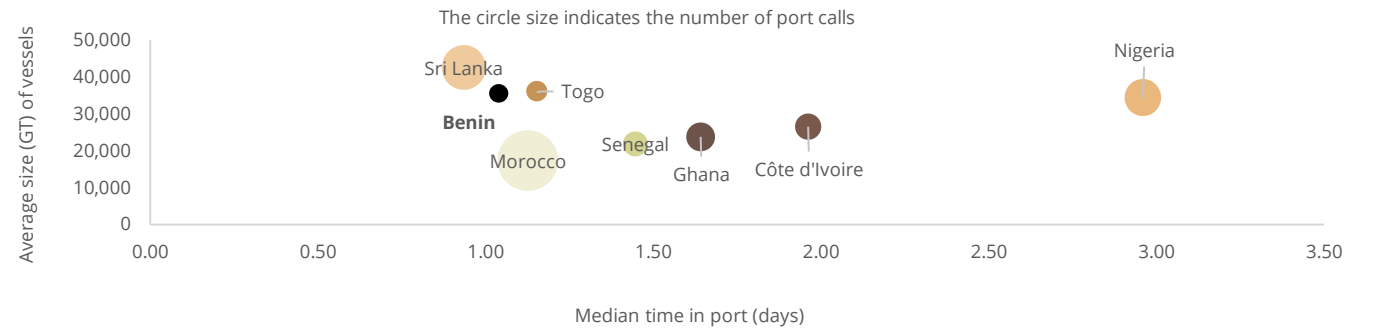
Benin performs well regionally for the size of vessels calling at ports and turnaround times

The figures present the correlation between the number of port calls (for all ships and container ships), the average size of ships that call at the country's ports and the median time spent at the port.

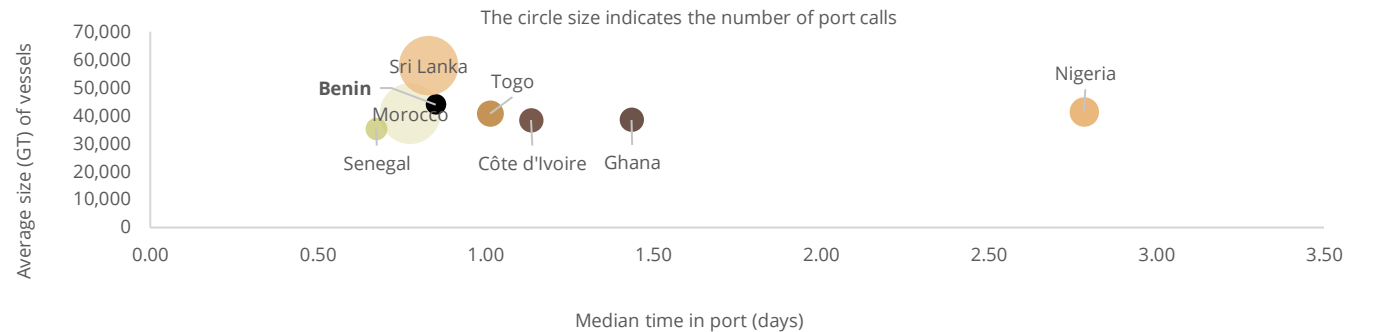
Benin stands out for receiving relatively large vessels on average compared to other regional countries, whether all vessels or only container ships are considered.

It is remarkable that turnaround times are relatively short in both cases, below the levels recorded by Togo, Ghana, and Côte d'Ivoire. On the other hand, if ships are larger, other things being equal, turnaround time should be longer, as there will be more cargo to be loaded and unloaded. Ports with shorter turnaround times tend to be more attractive to shippers and carriers rather than container ships that can generate higher revenue.

All ships: port calls, turnaround times, vessel average size, 2019



Container ships: port calls, turnaround times, vessel average size, 2019



Source: UNCTAD 2020b

4. Port concessions in West Africa

Since the mid-2000s, the spread of port concessions in West Africa has led most port authorities to depart from the “service port model”, in which they are responsible for infrastructure and services, to become “landlord ports” with a focus on core strategic and regulatory functions.

Despite the general move towards the landlord port model, the institutional structure for port management in West Africa differs across countries. In Anglophone countries, a national port authority usually has jurisdiction over all the ports in the country, with varying degrees of involvement in the operations, and sometimes a regulatory role. For instance, the Nigeria Port Authority assumes both landlord and regulatory functions and provides marine and related services across Nigerian ports. In Francophone countries, on the contrary, the norm is a dedicated port authority for each port, under the autonomous port model with more delegation of public decision making. Francophone countries more rarely have several ports, although some countries, such as Côte d’Ivoire, have more than one (Abidjan and San Pedro), with each having a separate port authority. In practice, most ports in West Africa have hybrid structures on the service-landlord continuum, and there are variations in public attributions both between and within countries.

In addition to port authorities and terminal operators, many institutions are involved in port policy and management in West Africa. First, ministerial departments (primarily transport, infrastructure, maritime affairs, and commerce) are responsible for port policy formulation, legislation and planning at the national level. They oversee the activities of port authorities and are represented on their board, which can also include representatives of the Ministry of Finance, Prime Ministry or Presidency for the public sector representatives. Agencies in charge of public procurement regulation and privatizations can also be involved in the awarding and regulation of port concessions. Second, private and public institutions and professional associations represent the interests of port users and logistics service providers and are often represented on the board of ports in several countries. Some ports, such as the Port Authority of Abidjan and the Port Authority of Dakar, have even included on their board representatives of the landlocked countries they serve.

The degree and manner of private engagement in the port sector varies with local conditions (social, economic, political, cultural, geographic, etc.), and different models of inclusion and administration have proved to be efficient. Evidence shows that private sector participation needs to be accompanied by other measures, such as strategic planning, institutional, legal, regulatory, and labor reforms. Even in the case of autonomous ports, central governments usually retain significant control for major decisions, notably for the terminal concession process. Additionally, the port authority may be more effective in enforcing compliance with contract provisions than in limiting abuses from monopoly power, ensuring a fair distribution of privatization gains, or promoting intra- or inter-port competition, as these could adversely affect its own revenue stream. Yet clarifying the roles of and responsibilities of government and its various entities is a challenge across continents.

Source: World Bank, ECOWAS InfraSAP; Making Most of Ports in West Africa (World Bank 2015)

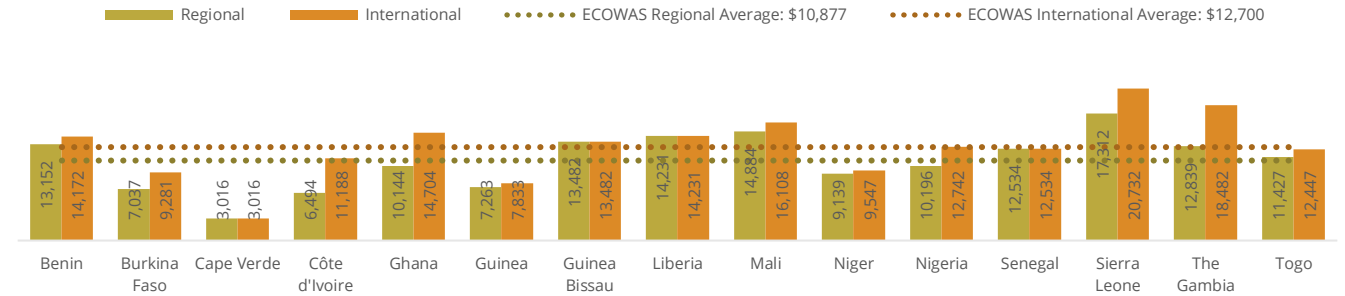
5. Air fares, charges and taxes

Benin's charges and government taxes for regional and international flights are higher than the ECOWAS average, although ticket prices are lower. While the higher taxes are a good revenue source in a context of low domestic revenue mobilization, it should be harmonized within the ECOWAS region to maintain its competitiveness.

According to the International Air Transport Association (IATA), in 2018, ECOWAS average charges and government taxes for regional and international flights were \$10,877 and \$12,700 (two times higher than in North Africa, and more than 80% above the world average). These are slightly higher values in Benin, at 21% and 12% respectively, mainly due to the higher level of taxes in relation to its peers.

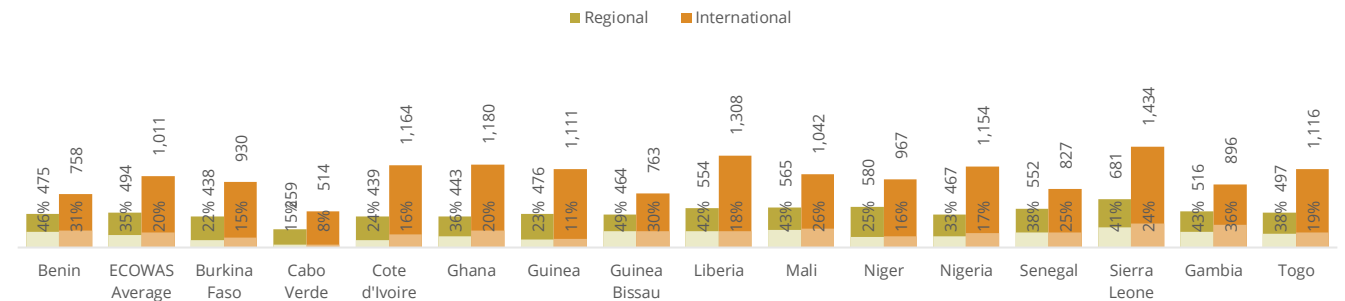
The average total charges and taxes for passengers are \$87.59 (regional) and \$103.58 (international). Although Benin is also above most countries, the average round-trip ticket price is below the ECOWAS average: -2% and -25% for regional and international flights. This allows tax authorities to take advantage of the sector for domestic revenue mobilization in a context of limited domestic revenue sources due to high informality (chapter I).

Charges and government taxes for regional and international flights



Source: IATA 2018,, Notes: CFAF

Average round-trip ticket prices and weight of passenger charges & government taxes

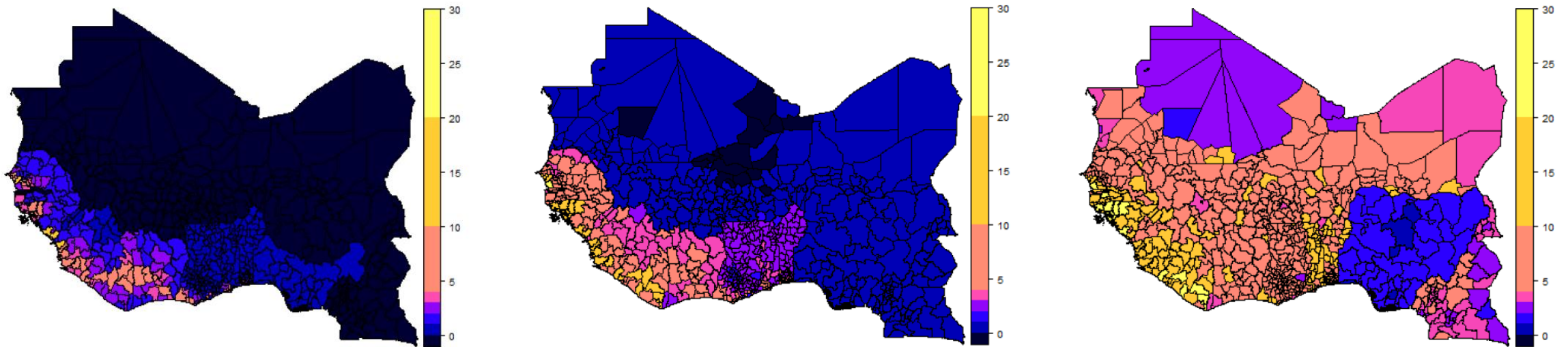


Source: IATA 2018, Notes: CFAF

6. Subnational gains from improvements in the Dakar-Lagos corridor

Lebrand (*forthcoming*) simulates the impacts of these improvements at the subnational level. From left to right the figures show the impact on real wages at the subnational level from (1) investing in transport infrastructure, (2) additionally removing transit delays along the corridor only; (3) removing all transit delays and cutting final border delays by half. Removing all transit delays in West Africa and cutting by half final border delays bring income gains for all regions in West Africa, even the most distant ones. More distant and isolated regions in the Sahel benefit little from all infrastructure investments happening along the corridor and borders. Regions in Nigeria also benefit relatively little from all these investments. The large size of the internal market explains the marginally smaller gains from better regional connectivity.

Spatial gains (%) in real wages from the Dakar-Lagos Corridor and investments to remove transit delays



Source: Lebrand (*forthcoming*)

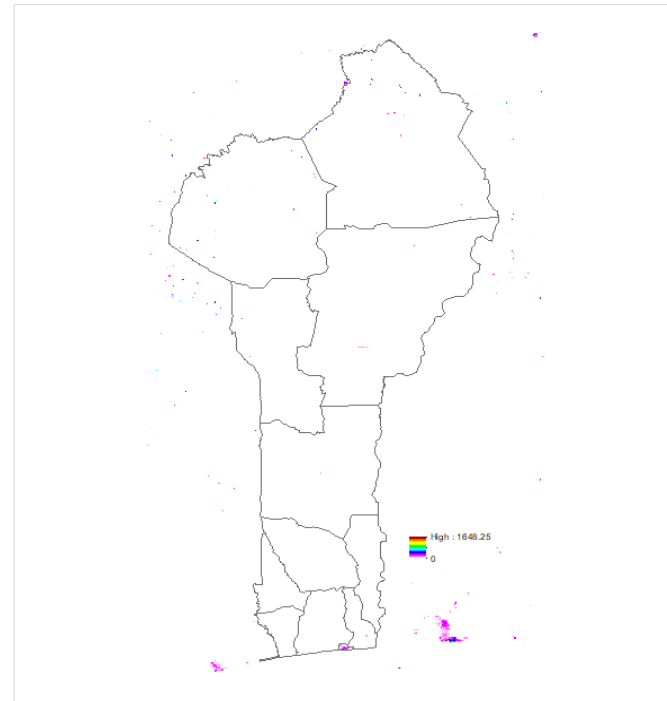
7. The distribution of population and economic activity

Benin's economic geography suggests increasing concentration of economic activity in the south and nascent secondary cities linked to agricultural production.

Benin's population growth in the last decade has been widespread across the country, with very few pockets of negative population growth. However, most of the gains have happened in urban centers (notably at Parakou, Benin's third largest city) and in the southern tip around Cotonou, Porto Novo, and up to Bohicon. This pattern reflects both the growing urbanization of slowly developing secondary cities, and the southern agglomeration, and the prevalence of rural population in a country where 40% of employment is in the primary sector.

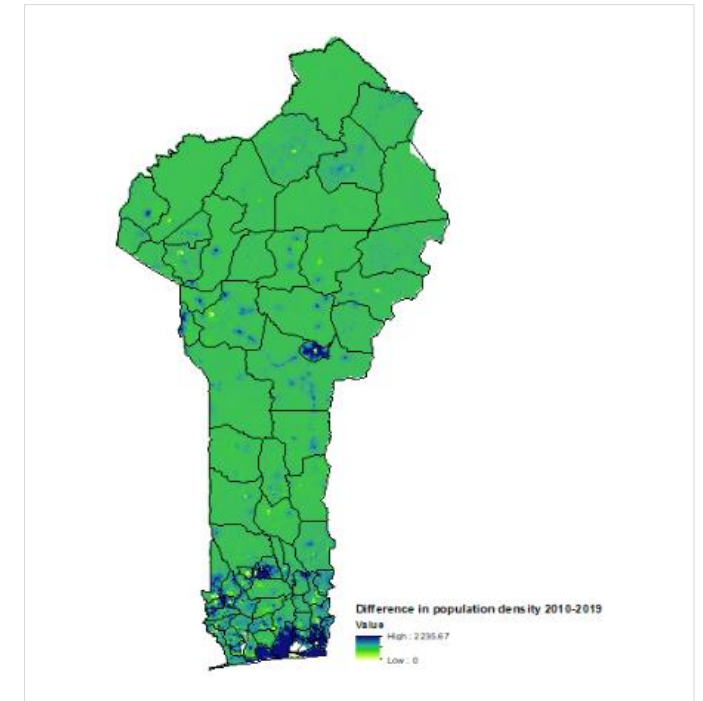
Most of economic activity has increased in the South around Cotonou linked to the port and trade activities (here measured by average night light intensity in 2020). Agriculture is concentrated in the northern-central area around Parakou.

Benin's economic activity is concentrated in the south and near urban centers... while agriculture is in the north



Source: VIIRS and author's calculations

Most population growth has taken place in southern areas and urban centers

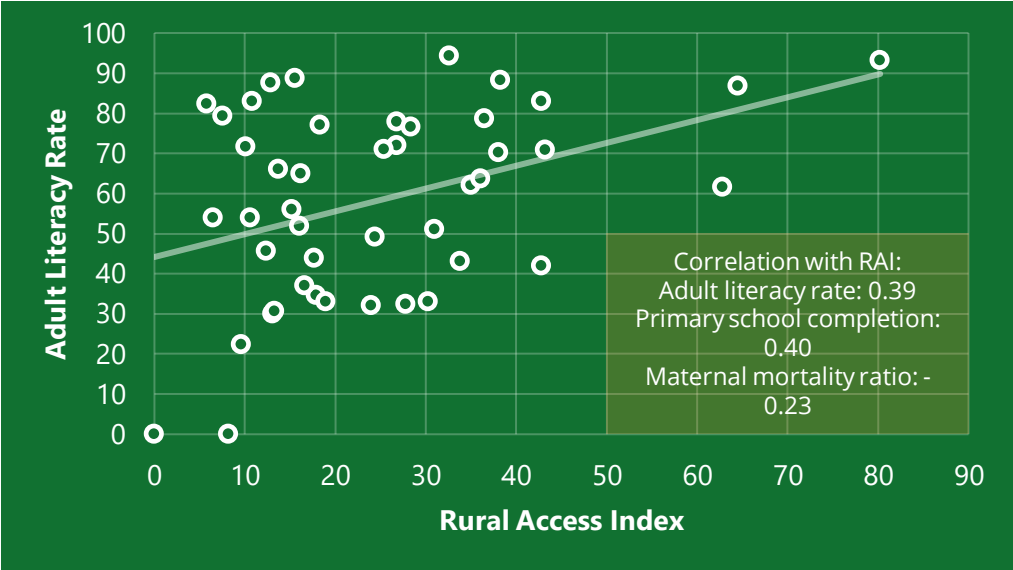


Source: WorldPop and author's calculations

8. Connectivity for human capital

Spatial accessibility in health and education matters because schooling and health outcomes are determined by more than just the availability and quality of healthcare and schooling. They also directly depend on factors governing a person's decision to invest in education and health (benefits and costs). Costs include both direct and indirect ones, with transport costs likely to be among the most important ([World Bank 2021](#)). In the poorest SSA countries, such as Sierra Leone, people spend around the same amount of money on travel to school as on school fees, and almost double the amount on travel to medical centers as the actual medical cost.

Transport is not only a determining factor for accessing basic human-capital related services – it can also influence capital formation for new generations. Poor physical access to health facilities has been identified as an important contributor to reduced uptake of preventive health services, especially in low-income settings. In Haiti for example, [Gage and Calixte \(2006\)](#) find evidence that women living in an area connected to the nearest urban center by an asphalt road are 4 times more likely to complete the recommended antenatal-care visits than those linked by unpaved roads. Improved connectivity can also affect human capital development by reducing gender gaps. In Moroccan villages improved road access resulted in girls' school enrollment increasing from 17 to 54% (Levy 2004). Girls were found to pay almost a third more than boys for their daily commutes to school in Bosnia & Herzegovina due to safety and security considerations. A Stanford study of 15 European cities showed that women rely more on public transport, and their travel patterns are mainly linked to the childcare, which leads to multipurpose and multichain trips. Finally, road crash injuries are the sixth leading cause of death globally for all age groups, and the leading cause of death for the 15–49-year age group (GRSF 2014).



Source: Transport Global Practice Narrative (2019)

9. *Projet Asphaltage*: Enhancing Cotonou's road infrastructure (1/2)

To address the poor condition of the city's road infrastructure, the PAG aims to pave a significant number of streets, in addition to other projects

Cotonou's urban mobility problem is related to poor services and poor infrastructure. On the one hand, the transport service is limited. On the other hand, the condition of the streets, their poor sizing and the constant risk of flooding, contribute to congestion. The main axes are passable, but the streets and alleys serving the districts which offer social services are almost impassable.

In addition, there are traffic jams at all hours of the day. There is also an anarchic parking situation mainly linked to the lack of designated areas for this purpose (the situation is particularly critical around Dantokpa market and the PAC).

To start addressing these, the PAG is boosting the number of surfaced roads with the *Projet Asphaltage* that contemplates paving 234 km of streets. It also contains an explicit effort to curb commuter traffic by relocating certain major traffic-generating centers: it plans to move administrative jobs to the Calavi area, to move the airport and the wholesale market out of the city center, and to create a car park and a logistics area in the immediate vicinity of the port.

Source: MDGL 2017, SSATP 2020, SSATP 2019

A1 Cotonou: Road infrastructure



A2 Cotonou: Projects included in the PAG



... and the CONOCO Project (2/2)

Contournement Nord de Cotonou (CONOCO) is a flagship project in the PAG

One of the most important urban projects included in the PAG is the so-called CONOCO. It includes a 37 km highway bypassing Cotonou's center in the north (linking the municipalities of Abomey-Calavi, Cotonou and Sémé-Podji) and a 5.2 km connection to the port. The aim is to keep vehicles associated with the Port of Cotonou and in transit on the Abidjan-Lagos axis outside the urban environment, freeing up the main axes of the city from this traffic.

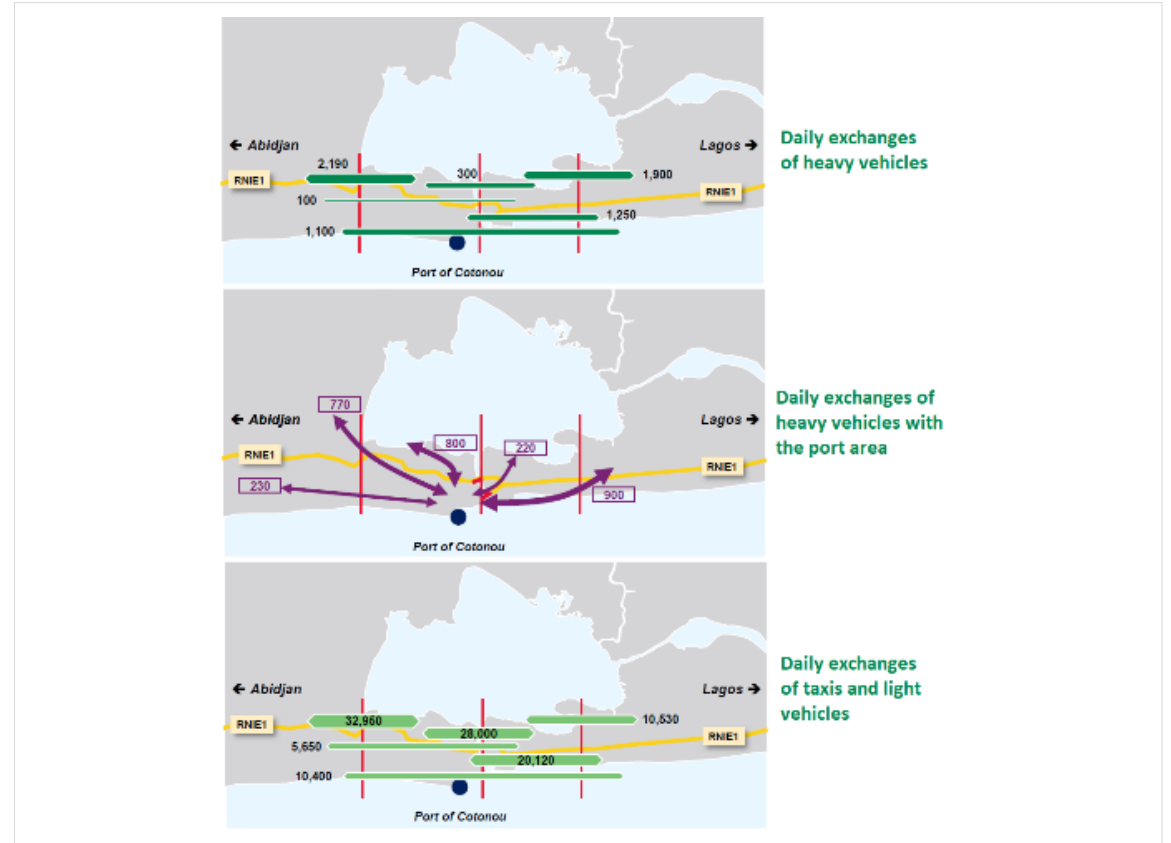
The total costs are estimated at CFAF 337bn (approx US\$ 600 million (XX% of GDP)). (includes land acquisition, construction and other costs). The project relies on private investment for a majority stake.

A3 CONOCO Project



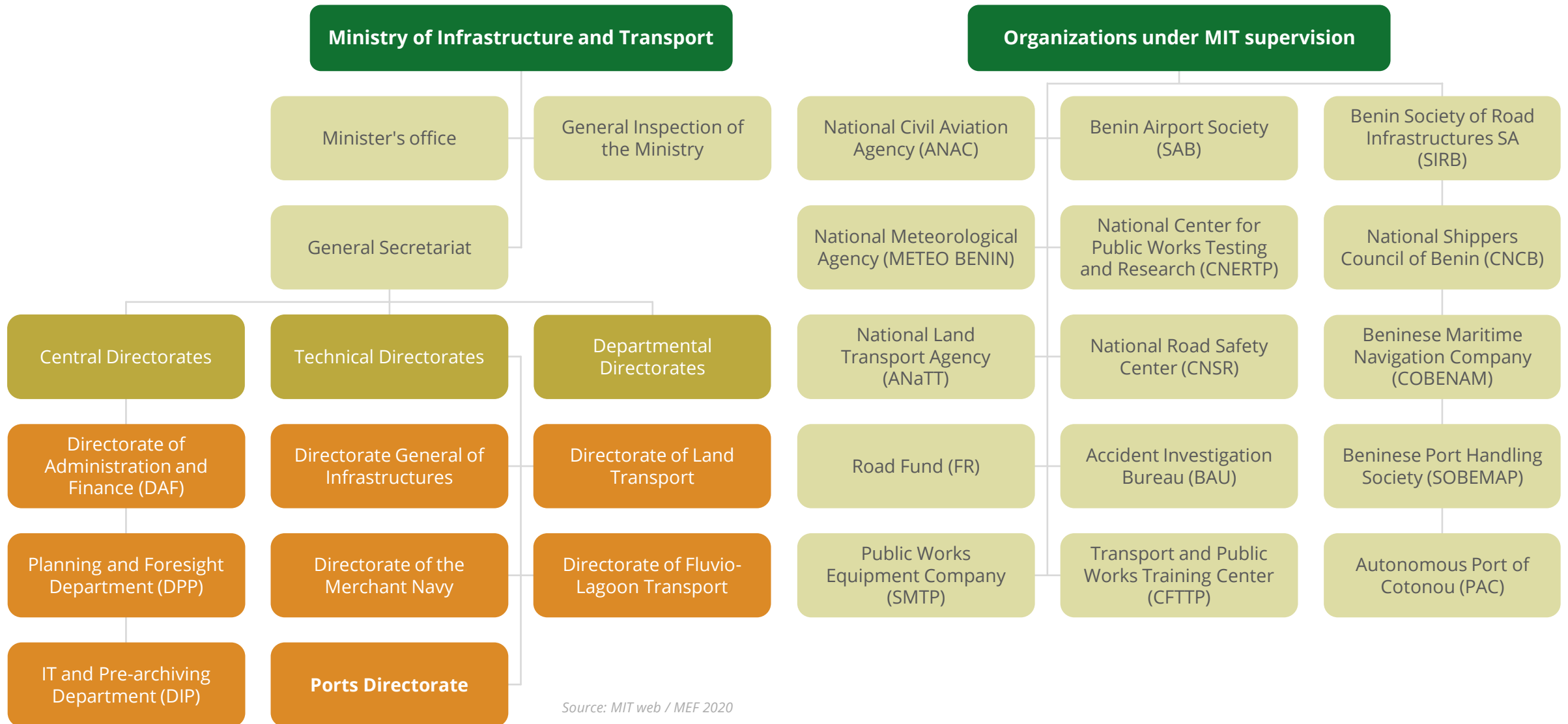
Source: Republic of Benin 2019

A4 Daily exchanges of vehicles



Source: Republic of Benin 2019

10. MIT organization chart



Source: MIT web / MEF 2020

11. Prioritizing rural road investment can be an efficient mechanism

Governments with information and capacity constraints struggle to decide how to allocate limited resources for infrastructure to maximize economic and social benefits.

How and where to prioritize public funds in the rural roads sector?

The methods used by governments to prioritize rural road investments have significantly evolved over time. They have ranged from those strictly considering economic returns, to the inclusion of social dimensions, the use of community consultations, and the development of multicriteria selection methods that encompass the concepts of sustainability and resilience. Multi-Criteria Decision (MCD) models, such as the one shown opposite, have become widely used as the main prioritization tool for road investment in recent years. They can reconcile multiple aspects associated with road investments while systemizing the exercise through relatively transparent data-driven methodologies.

These models can be applied with different degrees of complexity. Some countries, such as China and Mozambique, have used very data-driven models. Others have used a combination of MCDs with community participation (Haiti, Nicaragua).

Prioritizing rural road investment in Mozambique: selecting feeder roads by socioeconomic criticality and flood risk

Province	District:	Assigned Weights					Final Score	Rank	
		0.125	0.125	0.125(max of either)		0.125			0.5
		Network Criticality	Current Agriculture Production	Agriculture Potential	Fishery Potential	Poverty Headcount			Flood Risk
Nampula	Memba	4	2	1	5	4	5	4.375	1
	Moma	5	4	3	3	3	5	4.375	1
	Namapa	3	4	1	4	5	5	4.375	1
	Monapo	5	4	4	3	2	4	3.875	2
	Mongincual	3	4	5	4	2	4	3.750	3
	Ribaue	2	5	2	1	4	4	3.625	4
	Malema	1	3	2	3	3	4	3.250	5
Zambezia	Maganja da Costa	4	5	3	5	2	5	4.500	1
	Morrumbala	2	5	4	3	4	5	4.375	2
	Lugela	3	3	5	3	3	5	4.250	3
	Pebane	3	4	1	4	4	4	3.875	4
	Chinde	5	1	2	3	5	4	3.750	5

Source: Qu et al (2019)

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