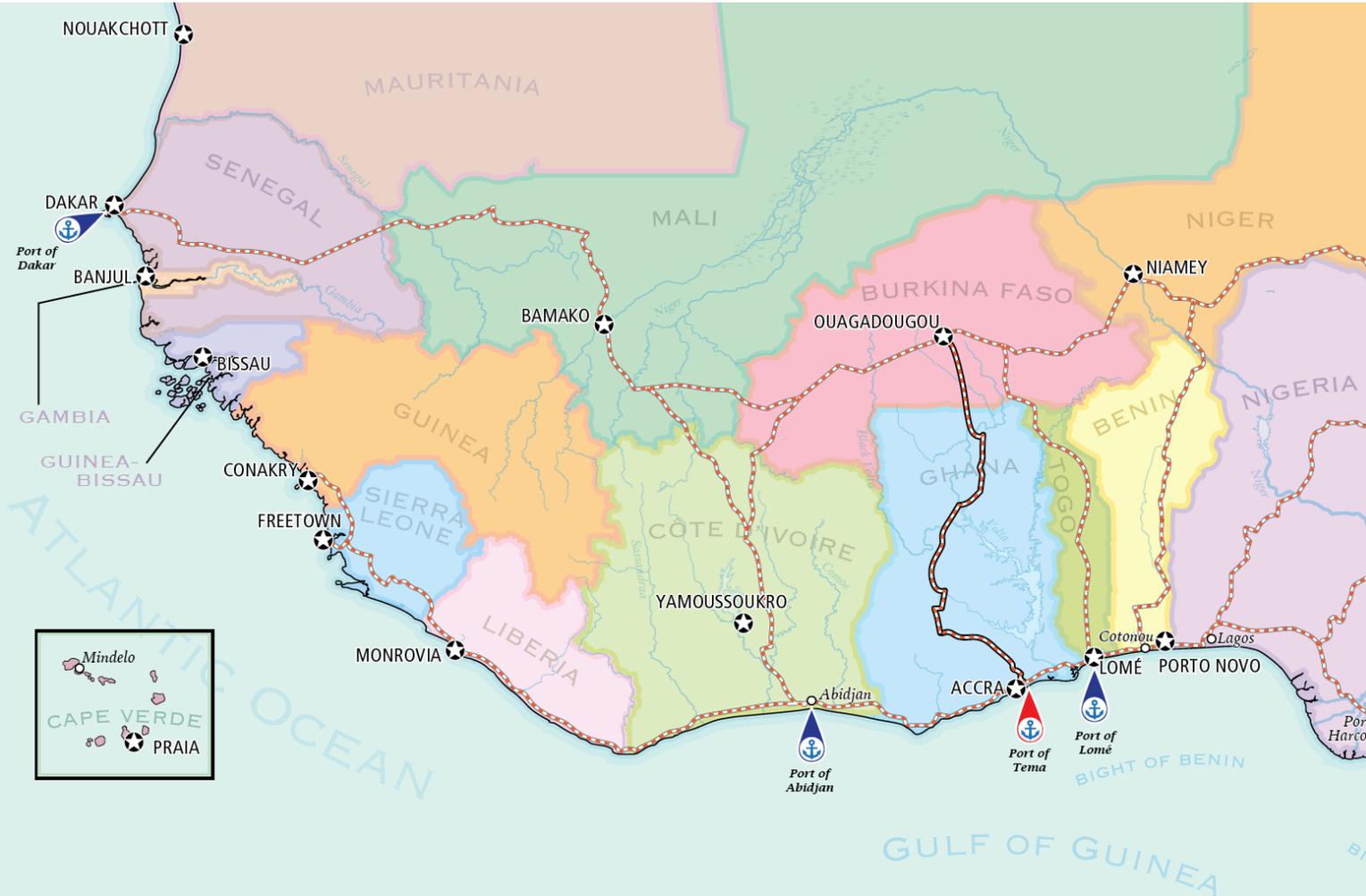




FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

ENHANCING GROWTH THROUGH REGIONAL AGRICULTURAL INPUT SYSTEMS (ENGRAIS) PROJECT FOR WEST AFRICA



FERTILIZER COST BUILD-UP AND PROCESS MAPS IN WEST AFRICA

PORT OF TEMA

August 2019 | Dakar – Abidjan – [Tema](#) – Lomé



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USAID Cooperative Agreement No. 720624181000001

The Feed the Future Enhancing Growth through Regional Agricultural Input Systems (EnGRAIS) project for West Africa is one of the many assistance programs supported by the American people through the United States Agency for International Development (USAID).

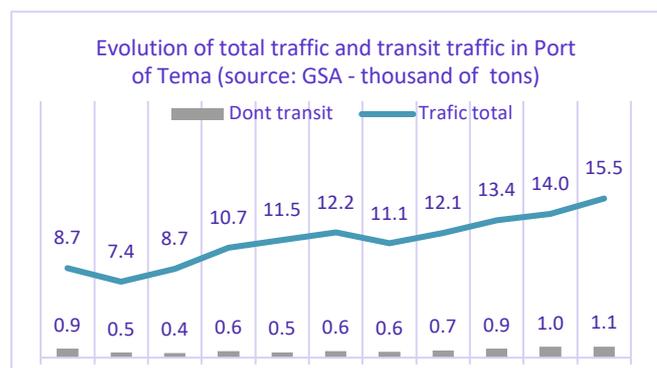
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Tema Port (TP)



Map	1	2	3	4	5	6	7	8
Type of Dock	Container	Container and Break Bulk	RORO and Reefer	Bulk	Valco	Tanker	Fishing	Military
Product	General	General	RORO	General	Minerals (alu)	Oil	Fish	
Dock Size (m)	575 2 berths of 300 m	592: 3 berths of 228, 181 and 183 m	2*183	1,550 4*183m+4*220	175 m			
Draft (m)	11.2	8.7 to 10	7.5 to 8	8 to 8.2	9.6			
Max Bulk Carrier (tons)		Handysize 30,000 (break bulk)		Mini Bulk Carrier 10,000	Handysize 30,000			
Key Data	Storage Area	Bonded Warehouses	Bulk Carrier Unloading Capacity	Bulk Carrier Anchorage Time (days)	Bulk Carrier Time on Dock (days)			
	355,000 m ²	25,000 m ²	3,900 tons/day	Average: 2 Min: 0.1 – Max: 14.2	Average: 4.8 Min: 1 – Max: 9			

Although smaller than neighboring ports and focused on Ghana’s foreign trade, the port of Tema has experienced strong growth in recent years and occupies an increasingly large position in the transit of goods to and from Burkina Faso and, to a lesser extent, Mali and Niger. Disadvantaged by the language barrier, the port of Tema has long been neglected by hinterland exporters, importers, and carriers. However, as a result of the Ivorian crisis of 2011-2012, several hundred thousand tons of Burkinabe products and products destined for Burkina Faso have begun to transit through this port recently.



Thus, in 2017, Burkina Faso’s fertilizer imports transiting through the port of Tema exceeded those through the port of Abidjan. Moreover, Yara, which previously based its logistics in the port of Abidjan, opened a new fertilizer import terminal and blending plant in the port of Tema in February 2019.

Generally, the port of Tema has experienced a rapid growth in port traffic volume over the last decade (on average +5% per year over 10 years), with a strong acceleration over the last five years (+8.5% per year). Over the last five years, the volume of goods transiting through the port has also increased noticeably.

Fertilizer imports through the port of Tema are closely linked to fertilizer subsidies of the cocoa and cereal sectors (maize and rice), since the cotton sector is not that important in Ghana.

In recent years, transit to the sub-region has begun to develop, but transit volumes via the port of Tema are still very variable, especially since some importers in Burkina Faso prefer the second Ghanaian port, Takoradi. In 2016 transit volume via Takoradi exceeded 19,000 tons, while it barely reached 1,000 tons via Tema. In 2018 transit volume via Takoradi was almost equal to that via Tema.

Strengths of the Port of Tema

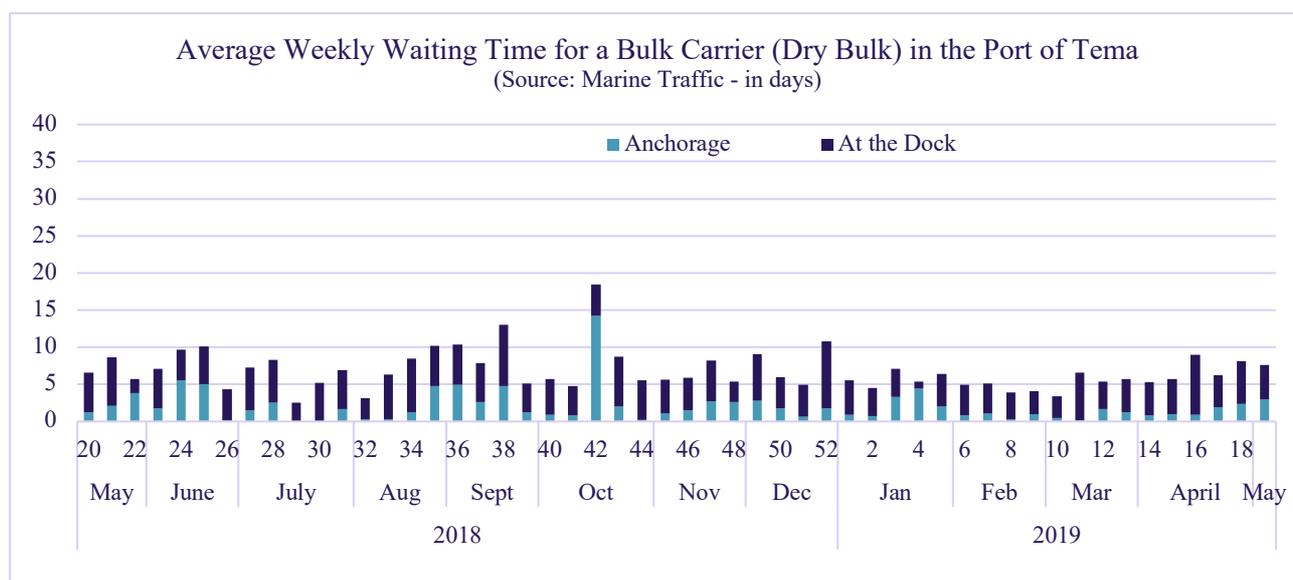
The first strength of the port of Tema is its cost. According to our surveys, it is the cheapest port in the sub-region.

In addition to the savings on port fees, the port of Tema's geographical location gives it a comparative advantage over land transport to Ouagadougou and, more generally, to Central and Eastern Burkina Faso. It also remains very competitive for Western Burkina Faso, even though it is less connected to that area.

Finally, the port of Tema is relatively less congested than the ports of Abidjan or Dakar, which reduces the demurrage risk and, therefore, additional costs for maritime freight and/or port transit. Its remote location from Ghana's capital, Accra, would also allow it to be less exposed to road congestion if the roads around the port were of better quality. The price of land is also lower than in other ports.

Fertilizer Imports via Tema Port Authority			
(Source: Ghana Shippers Authority; in thousands of tons)			
	2016	2017	2018
Tema customs clearance	191	292	221
Hinterland transit	1	190	27
Total	192	483	248

Distance to Hinterland Cities (in km)			
Burkina Faso		Mali	
Bobo-Dioulasso	Ouagadougou	Sikasso	Bamako
1,123	919	1,300	1,674



Weaknesses of the Port of Tema

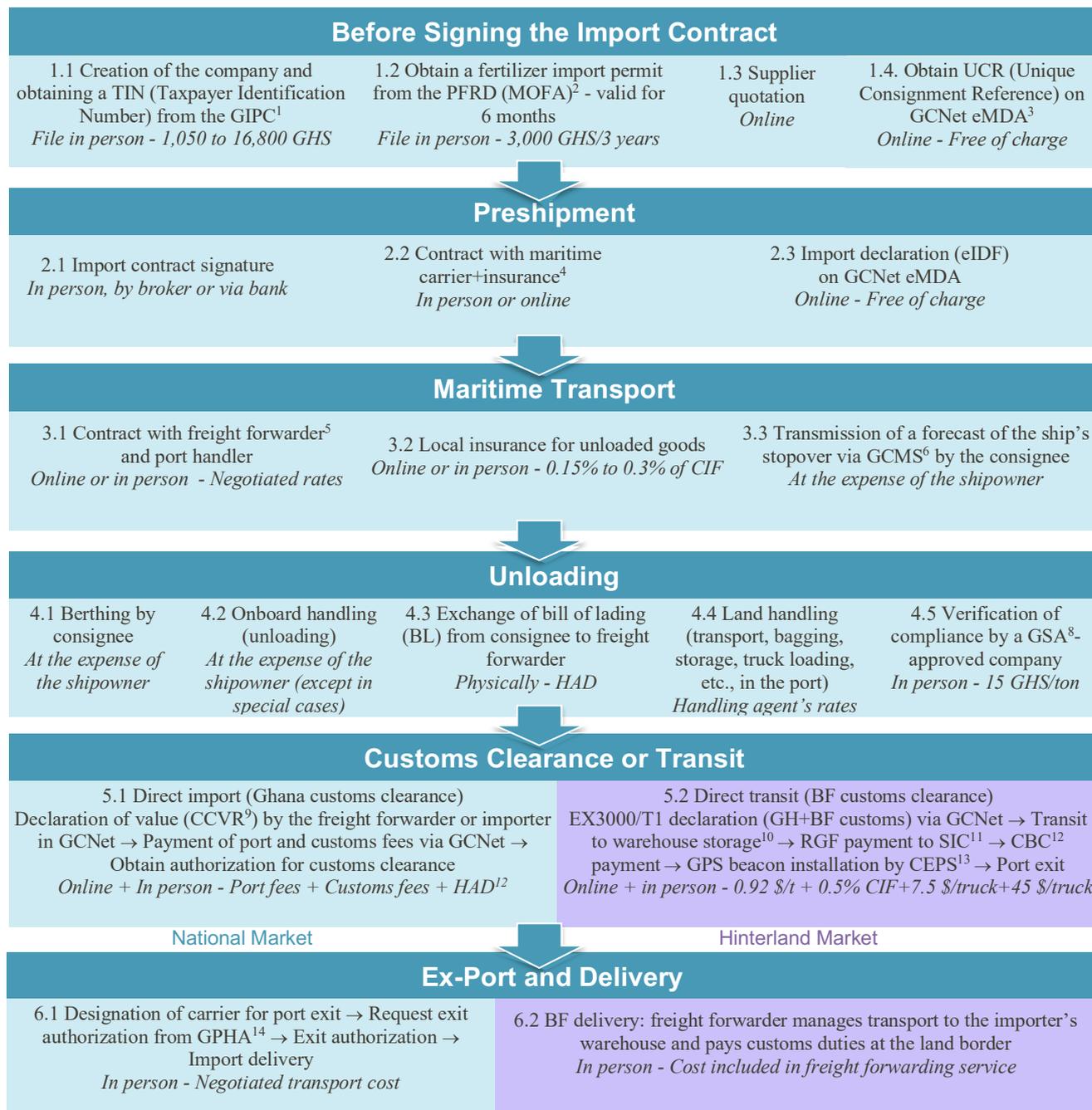
The main weakness of the port of Tema is due to Ghana's non-participation in the West African Economic and Monetary Union (WAEMU), which does not allow it to benefit from the stability of the franc CFA; this can lead to additional costs and exchange risks during import transit. Another disadvantage of Ghana's non-integration into the franc CFA zone is the volatility of the Ghanaian cedi, leading to the extremely high interest rates offered by local banks. While rates vary between 10% and 15% per year for commercial loans with banks in the franc CFA zone, rates are between 15% and 20% with Ghanaian commercial banks.

A slight disadvantage is also noted in terms of road infrastructure in the port area. Even though the main road from the port to Accra and Kumasi is of good quality, the secondary roads leading to Tema-based warehouses and factories are in very poor condition, making traffic challenging and transport relatively expensive.

Aside from these disadvantages, the port of Tema seems to be the most competitive port to date for fertilizer imports into Burkina Faso, and this should increase in the coming years with major ongoing development projects.

Procedures for Importing Fertilizers via the Port of Tema

The following diagram summarizes the main steps to be taken in the import process. Depending on what the importer chooses, all or only some of these steps may be delegated to the contracted freight forwarder.



Notes

- ^{1.} **GIPC:** The Ghana Investment Promotion Center is a one-stop shop for business creation in Ghana. The rates for setting up a business vary according to the sector of activity, value, and origin of the capital. Details are available at <https://www.gipcghana.com/invest-in-ghana/doing-business-in-ghana/starting-a-business.html>.
- ^{2.} **PFRD:** The Pesticide and Fertilizer Regulatory Division, based within the Plant Protection and Regulatory Services Directorate (PPRSD) of the Ministry of Food and Agriculture (MOFA), is the authority authorized to approve fertilizer importers and distributors in the country. In particular, it controls and validates all types of fertilizers authorized to be marketed and transmits the approvals to the West African Fertilizer Control Committee (WAFCC). http://mofa.gov.gh/site/?page_id=4742. It issues annual Fertilizer Registration Certificates to companies and a Fertilizer Import Permit for each import operation. Details of the information to be submitted are presented in [Ghana's Import, Export and Transit Process Manual](#).
- ^{3.} **GCNet eMDA:** Ghana Community Network Service Limited (GCNet) is a Ghanaian information engineering company that manages the Ghana National Single Window (GNSW) online platform. GCNet eMDA (electronic Ministries, Departments and Agencies) is the full name of this platform, on which all steps of declaration and validation of online import as well as some payments are carried out: <https://emda.gcnetghana.com/mda/TraderLogin.do>.
- ^{4.} If the import contract is an FOB contract, transport and marine insurance are paid by the exporter (supplier); if it is a CIF contract, the importer contracts for transport and insurance.
- ^{5.} **Freight forwarder:** The company in charge of representing the importer at the port for all or some of the procedures to be carried out at the port and with customs. Under contracts signed with importers, the freight forwarder can only manage the administrative formalities with the consignee, port authority, and customs or supervise part of the handling and transport to the importer's warehouse. This is particularly the case during transit to hinterland countries, in which the freight forwarder will manage transport at least to the land border of Mali or Burkina Faso and customs clearance there.
- ^{6.} **GCMS:** The Ghana Customs Management System is a platform in addition to GCNet in which consignees report shipping manifests and then report bills of lading. It is largely by cross-checking the information entered in this system with that provided on GCNet (CCVR) that Customs monitors the breakdown of ship cargo and identifies the risk of fraud.
- ^{7.} **Consignee:** Company representing the charterer (shipowner) for all of the procedures to be carried out in the port. The transfer of product liability between the charterer (carrier) and the importer and the end of the contract of carriage occurs during the exchange of bills of lading (also called BL exchange) between the consignee and the freight forwarder representing the importer.
- ^{8.} **GSA:** Ghana Standards Authority is a public body in charge of verifying the conformity of imported products. Unlike the other three ports where conformity control is carried out before shipment, Ghanaian imports are checked upon arrival at the port. The Ghana Shippers Authority is also referred to as GSA. The control costs amount to 15 GHS/ton.
- ^{9.} **CCVR (Customs Classification and Valuation Report):** The freight forwarder or importer (if certified by Customs) enters the required information (the declaration of value) in GCNet eMDA. Customs may request additional information before validating the CCVR.
- ^{10.} **Transit warehouses:** The Burkina Faso Chamber of Commerce in Ghana (BFCC) manages a warehouse with a capacity of approximately 6,000 square meters (m²), or approximately 40,000 tons, within the port of Tema, which serves as a storage area for products in transit. When there is a lack of space, the freight forwarder in charge of transit to Burkina Faso can rent other customs-operated warehouses within the port area or occasionally outside (which requires paying customs officers to monitor the warehouse and is therefore costly). Fees are charged by the BFCC called *Passage Magasin Douane* (PMD fees). If the fertilizer does not go through in-port storage (in the case of direct unloading from ship to truck), the PMD fee is only 0.5 USD/ton, but if the fertilizer must be unloaded in the transit warehouse and then reloaded into a truck, the cost is 0.92 USD/t.
- ^{11.} **SIC Insurance Company** acts as the manager of the ECOWAS Inter-Road Guarantee Fund (IRF) in Ghana. In partnership with the Burkina Faso Chamber of Commerce and Industry, it coordinates and guarantees

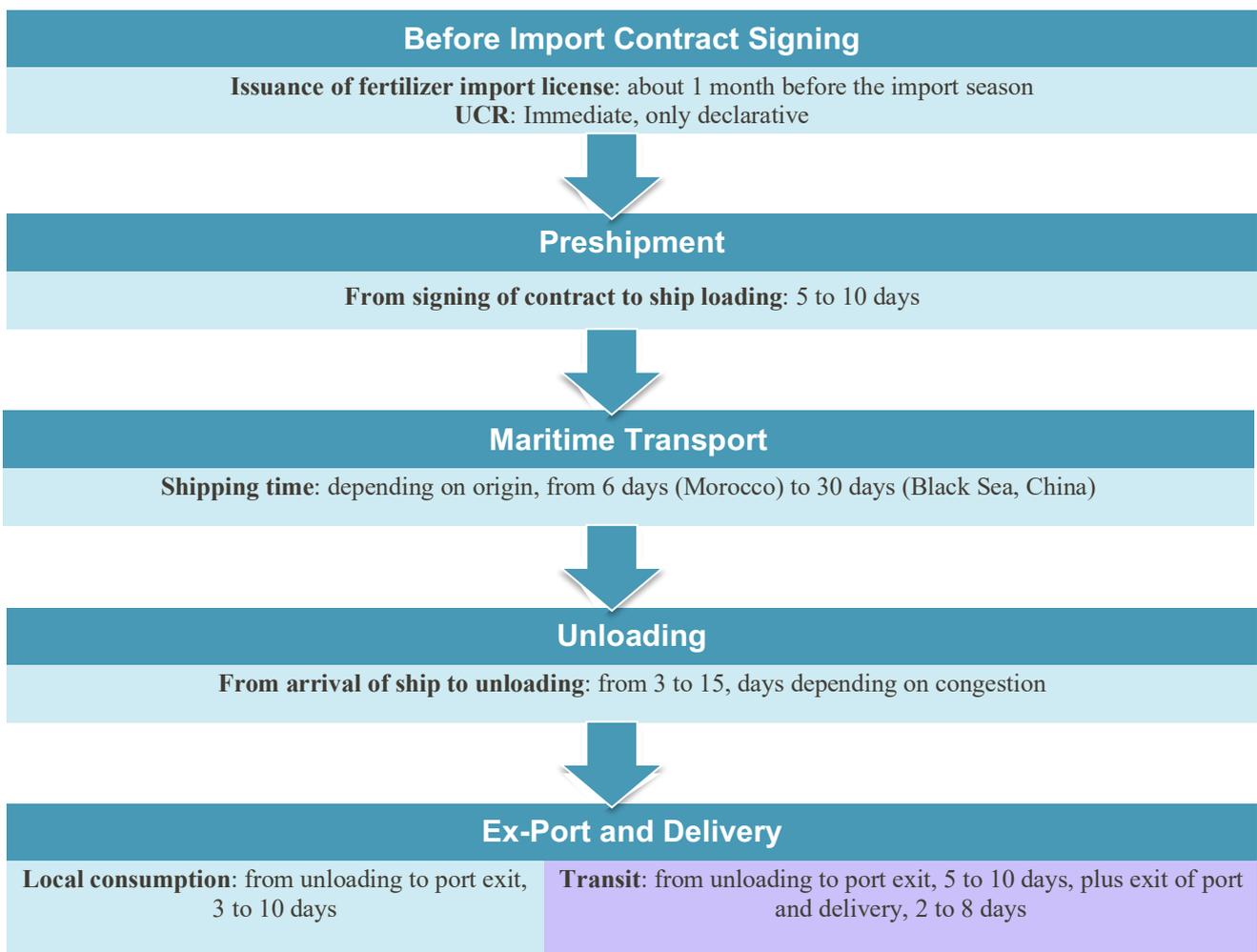
transit between Ghana and Burkina Faso. Therefore, it is the company that receives the levy of 0.5% of the CIF value on behalf of the RGF. <http://www.sic-gh.com/>

¹²**CBC:** The Burkinabe Shippers' Authority levies 7.5 USD per truck.

¹³**CEPS:** Ghana's Customs Excise and Preventive Services is the customs service in charge of checking the content and documentation and placing the GPS that will allow trucks in transit to be traced to Burkina Faso. The GPS service costs 45 USD/truck.

¹⁴**GPHA:** The Ghana Ports and Harbours Authority, which coordinates port activities, verifies payment of all service providers and compliance of all documents via GCNet eMDA before authorizing exit of truck.

Process duration: from the supplier quotation to delivery of the product, from 2 weeks to 2.5 months



Import Charges via the Port of Tema

The following table shows the most common case, bulk import with in-port packaging.¹ However, for blending near the port city, the product is transported in bulk to the factory, which significantly reduces port fees. Sales prices in Ghana are estimated for the northern part of the country (Tamale). Sales prices in Burkina

¹ The data presented are only averages and do not cover all import processes. A comparison matrix produced during the study allows more complex comparisons to be made by port, final market, and import modality. It also gives the minimum and maximum values per step according to the costs specific to each importer, the storage period, the borrowing rate, and the purchase price of the raw material. All values should be considered orders of magnitude that may vary according to the international input market, exchange rates, transport supply and demand in national markets, and supply chain congestion, including unloading at the port.

Faso are estimated for the production areas in the central part of the country. In the case of blending in Bobo-Dioulasso, consideration is given to the southwestern part of the country, which is closer to the blending plant.

<i>Values in USD/ton</i>	Simple Product (import Urea, DAP, MAP, etc.)	Complex Product (import NPK formulated at source)	Formulation in Tema (import 90% of ingredients)	Formulation in Burkina Faso (import 90% of ingredients via PAL, with blending in Bobo-Dioulasso)
FOB reference price	300	300	260	260
Sea freight (bulk carrier) + insurance	41	41	36	36
CIF reference price	341	341	296	296
Port charges	36	36	20	30
Road transit (Tema→Bobo-Dioulasso)				60
Customs clearance	7	21	6	6
Storage and handling costs of the importer	8	8	29	25
Administrative and financial costs of the importer	24	24	31	30
Importer profit	30	30	30	30
Price ex-warehouse importer/blender	446	460	412	477
Transport to the distribution area	→Ghana: 20 →BF Central: 55	→Ghana: 20 →BF Central: 55	→Ghana: 20 →BF Central: 55	→BF Southwest: 5 →BF Central: 15
Administrative and financial costs of the distributor	→Ghana: 8 →BF: 10	→Ghana: 8 →BF: 10	→Ghana: 8 →BF: 10	→BF: 10
Distributor profit	→Ghana: 10 →BF: 15	→Ghana: 10 →BF: 15	→Ghana: 10 →BF: 15	→BF: 15
Price from warehouse to distributor production area	Ghana: 484 BF Central: 526	Ghana: 498 BF Central: 540	Ghana: 450 BF Central: 492	BF Southwest: 512 BF Central: 517
Price ex-warehouse distributor production area in FCFA/bag	Ghana: 14,050 BF Central: 15,250	Ghana: 14,450 BF Central: 15,650	Ghana: 13,050 BF Central: 14,250	BF Southwest: 14,850 BF Central: 15,000

Projects and Developments of the Port of Tema

Tema port expansion project:

Expansion of the port of Tema began in 2016, led by MPS Corporate, which already manages the container and break bulk terminals (#1 and #2 on the map). The first ship unloaded at the new terminal in June 2019. It is a large container quay covering 60 hectares, located 1 km west of the current port. This terminal, built as an extension on the sea, has a quay of 1,400 meters (m) and a draft (depth) of about 16 m. Therefore, very large container ships (Post-Panamax, with a capacity between 8,000 and 11,000 TEUs²) can be accommodated at four to five berths (depending on the size of the ships).

Unfortunately, this terminal is designed exclusively for container traffic and cannot be used for the berthing of large bulk carriers (Handymax). However, it should reduce congestion of the existing container quay and

² Twenty-foot equivalent (number of conventional 20-foot containers or 40-foot/2 containers).

encourage faster unloading for fertilizer importers who wish to import break bulk fertilizer (bagged product in a bulk carrier) on this quay (#2 on the map). It should also reduce road congestion at the current port level.

Aside from this important project, which will soon be completed, the main dematerialization and intra-port logistics improvement projects have been effective since 2016, with the latest version of the GCNet eMDA platform. No other major projects have been announced recently.

Recommendations for Importing Fertilizer via Port of Tema

General Recommendations

1) Improve road infrastructure around the port of Tema:

The port of Tema is now very efficient compared to neighboring ports. As previously mentioned, the road infrastructure around the port area is in a particularly dilapidated state. This situation slows down transport near the port (by concentrating all vehicles on the main road, which is the only one in good condition) and impedes the establishment of storage warehouses and blending factories in the commercial zone around the port. Improvement of this infrastructure is vital to reducing transport and storage costs and promoting quick installation of stores and factories around the port area.

2) Negotiate a priority berthing period for fertilizer loads:

Ghanaian operators and the West African Fertilizer Association (WAFA) and their partners should negotiate with Ghana Ports and Harbours Authority (GPHA) a priority berthing season for fertilizer bulk carriers. This will further reduce the risk of delay and demurrage at the port of Tema and increase the port's market share to Burkina Faso.

3) Improve the transit framework to Burkina Faso:

Although a transit agreement exists between Burkina Faso and Ghana, its implementation is still incomplete. Information sharing and simplification of procedures can be further improved to speed up the exit of goods in transit from the port and the crossing of the Ghana-Burkina Faso land border.

Specific Recommendations

1) Negotiate with Volta Aluminum Company Limited (Valco) the use of its mineral wharf:

The private mineral wharf managed by Valco (#5 on the map) is dedicated to the export of aluminum ore. This infrastructure is ideal for fertilizer imports and can accommodate Handysize vessels (30,000 tons). The use of this quay is very interesting as Valco has an export activity and, therefore, brings in empty bulk carriers to load them with aluminum bauxite.

2) Pay more attention to the port of Tema for the import of fertilizers to Burkina Faso:

Although market share has increased significantly in recent years, the port of Tema remains behind that of Abidjan in terms of the volume of fertilizers transited to Burkina Faso. This means that many actors in the fertilizer sector in Burkina Faso are showing a strong interest in this port and overcoming the language and habit barriers to achieve substantial savings (10 to 15 USD/ton on logistics to deliver in Bobo-Dioulasso, in addition to reduced demurrage fees).

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