

# Discussion Paper

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## **Regional Markets, Politics and value chains**

The case of West African cement

**Bruce Byiers, Karim Karaki and Jan Vanheukelom**

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### Key messages

Regional market integration and value chain development are seen as key to promoting economic transformation across African countries. This study looks at cement in West Africa to better understand the challenges of this agenda.

Cement is a key sector in West Africa in terms of value addition to low-value minerals, construction sector employment, and high levels of public spending. Despite regional trade and industrialisation policies and rising cement investments, prices remain nearly three times the world average.

ECOWAS commitments to liberalise regional trade in cement and clinker are undermined by national measures to limit imports, often under pressure from a major industry player. As such, trade policy and trade dynamics are inherently tied up with company strategies and the political weight that these producers exert, keeping prices high.

Disentangling state-business relations and political concerns within and between countries, and across sectors including transport and energy, are all key to understanding the region's cement market and for assessing the potential of promoting industrial, infrastructural and social development through the cement value chain.



## Table of Contents

Table of Contents .....	iv
List of Boxes .....	iv
List of Figures .....	iv
List of Tables .....	iv
Acknowledgements .....	v
Acronyms .....	v
Executive Summary .....	vi
1. Introduction .....	1
2. The context, sector characteristics and market structure of cement in West Africa .....	2
Context and trends .....	2
Sector characteristics: cement production and trade .....	6
3. Regional and national challenges and opportunities .....	14
3.1. Trade policy .....	14
3.2. Transport dynamics .....	16
3.3. Limited industry competition .....	18
3.4. Energy costs .....	19
3.5. Socio-environmental impacts .....	20
4. Conclusions & implications .....	21
Bibliography .....	25

## List of Boxes

Box 1: Cement production characteristics .....	7
Box 2: Resistance to regulatory reforms in the transport sector in Burkina Faso .....	17
Box 3: Government rules can also reinforce producer dominance - more examples from Nigeria .....	19

## List of Figures

Figure 1: African Construction Trends (2014) .....	3
Figure 2: Cement Consumption by Type of Activity and Country .....	4
Figure 3: Distribution of cement prices in Africa and Location of Plants 2015 .....	5
Figure 4: Simplified Diagram of Cement Production .....	6
Figure 5: Cement production and trade scenarios .....	8
Figure 6: Limestone deposits in West Africa .....	8
Figure 7: Selected country clinker imports 2010-2014 (in millions of USD) .....	9
Figure 8: Share of cement exports in 2014 in West Africa .....	10
Figure 9: Clinker and cement trade flows (est. millions tonnes, 2013) .....	11
Figure 10: Import share of cement consumption 2011-2014 .....	12
Figure 11: Location and capacity of cement and clinker plants .....	13

## List of Tables

Table 1: Sub-Saharan Africa's leading cement producers (million MT) 2013 .....	10
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## Acronyms

AfDB	African Development Bank
AU	African Union
CET	Common external tariff
CFA	Central African CFA Franc
CIMAO	Ciment de l'Afrique de l'ouest
ECDPM	European Centre for Development Policy Management
ECOWAS	Economic Community of West African States
EPL	Exclusive Prospecting Licences
ETLS	ECOWAS Trade Liberalisation Scheme
EU	European Union
FOB	Freight on board
FTA	Free trade area
GCMA	Ghana Cement Manufacturers Association
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GRA	Ghana Revenue Authority
IFC	International Finance Corporation
IPP	Independent power plant
ITAC	Trade Administration Commission of South Africa
MLA	Mining lease agreement
MT	Metric tonne
OECD	Organization for Economic Cooperation and Development
OTRAF	Organisation des transporteurs routiers du Faso
UEMOA	West African Economic and Monetary Union
UNECA	United Nations Economic Commission for Africa
VAT	Value added tax
WACIP	West African Common Industrial Policy
WAEMU	West African Economic and Monetary Union

## Executive Summary

Despite rising cement production across the region, by world standards West African cement prices remain high, while construction demand is rising. This represents a bottleneck to regional, domestic, and aid-financed policies aimed at improving infrastructures, urbanisation and social housing, all policy areas that are key to widening the impact of development interventions and to promoting economic transformation.

However, the importance potential of the cement industry and the construction sub-sector is generally not recognised by development practitioners and policy makers. This stands in contrast to the central role it has in publicly and aid-financed construction of houses, schools and hospitals, not to mention the roads, railroads and factories that are important for regional and national economic development. With growing urbanisation and infrastructure development likely to increase demand, the employment potential of cement and related construction are positive, but rely on a range of policy interventions in support of an efficient cement value chain with strong inter-sectoral linkages.

This study points to the need to view cement not just as a background story to more important development policies or more ambitious narratives. With recent regional and national policies in West Africa increasingly focused on economic transformation and the potential role of low-value minerals-based industrialisation, cement is at the centre of a range of development processes through production, distribution and construction, often funded or co-funded by public money. Further, the cement sector seems to be at the nexus of a range of structural and current issues for development policy in West Africa: high local production and transport costs; cheap cement imports from East Asia; a regional power or hegemon placing national over regional interests; weak competition effects to counteract inefficiencies in production; and unpredictable and politically motivated policy-making. Lessons from the cement sector may be valuable for promoting value chain development in other sectors in the region.

As with other sectors, political and economic interests and incentives operating between and within countries are particularly important in shaping outcomes.<sup>1</sup> Disentangling these different elements of the cement value chain, the cross-sector linkages and the multiple market and government failures therefore seems an important starting point for understanding the region's high cement prices and for promoting industrial, infrastructure and social development at the national and regional levels.

Seeking to better understand the interplay of regional policies and ambitions with national policies, actors and interests, and their roles in current cement market dynamics, the study highlights the importance of understanding market structures and political economy dynamics, particularly when looking at regional industrialisation strategies. While regional market liberalisation commitments aim to encourage economies of scale through enlarged markets, it is important that this translates into lower prices if the wider region is to benefit. Any attempt to promote regional industrialisation strategies must therefore take context and sector specificities into account and consider the power and interests of private sector operators and their influence on public authorities, as well as the dynamics in related sectors such as energy and transport, all of which may undermine the potential benefits of regional approaches. The potential role of regional organisations in promoting competition offers an avenue for further research and analysis.

State-business relations are instrumental in shaping public policy choices in the cement industry and in related sectors such as trade, transport, infrastructure development and environment. Informal, behind the scenes machinations remain under-researched, although the effects can be easily observed in all these interrelated sectors and subsectors.

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<sup>1</sup> See Byiers et al., 2015.

The (lack of) competition between cement producers is a major issue in the region while competition policy appears to be extremely important in the sector given the economies of scale involved. The World Bank (2016) proposes “competition law enforcement and advocacy for pro-competition regulatory frameworks” and raises the point that more imports ought to increase competition. However, as this study shows, the political economy factors around national and regional institutions appear to undermine the potential for such policies to take effect. While government alone may not be able to address these challenging political economy issues, ECOWAS may be able to support third parties such as civil society organisations and coalitions of smaller firms to help alter the current incentive environments in place.

Though it is tempting to suggest that regional policies on trade liberalisation ‘simply need to be implemented’, political economy analyses point to the need to start from an understanding of why things are as they are. The observations in this paper about the range of private sector actors and their potential to drive or block reforms also suggest limited room for manoeuvre for regional policy-makers unless enough cross-country interests can be met in implementing the ECOWAS Trade Liberalisation Scheme (ETLS). The ECOWAS Commission might encourage ETLS implementation through multi stakeholder dialogues, including with sector operators, to align interests around reduced transaction costs and cement trade between a certain number of countries (e.g. Togo as key exporter of clinker, Cote d’Ivoire and Ghana as key importer of clinker, and cement producer, and Mali as a cement importer).

Drivers and obstacles within the cement value chain merit attention, but so to do cross sectoral dynamics that shape the incentive environment. In terms of aligning key public and private stakeholders behind politically feasible reforms for effective transport and trade facilitation, major transport corridors may act as important conduits and can be seen as a means to encourage further (public or private) investments.

Policymakers could work more closely with cement producers to ensure local economic linkages through local content policies and strategies, or building on broader corridor and territorial approaches to development to link to local content producers of inputs but also linkages in other sectors. The ECOWAS Commission and ECOWAS member states might try to leverage cement producers’ investment in transport and energy to achieve further gains in terms of regional energy and transport integration.

Relatedly, further lessons might be learned from the experiences of development partners directly and indirectly involved in the sector: the IFC has been instrumental in investing in and providing loans for cement plants in Ghana and Benin, while other donors such as AFD and GIZ are directly supporting cement production in Sub-Saharan Africa. Partners increasingly work with the private sector to encourage developmental impacts, where cement would appear to offer potential opportunities in a key sector.

The increase in cement production as witnessed during the last decade may push cement manufacturers to lower the price of their products in order to conquer the shares of saturated markets. However, such an outcome will be partly mitigated by the growing cement consumption, strong urbanisation dynamics, and ultimately by the degree of competition that can be brought to market dynamics.



# 1. Introduction

African leaders, policy makers and their international partners all see economic transformation as a key objective for sustainably improving livelihoods and reducing poverty. This is reflected in the Sustainable Development Goals, in the African Union's (AU) Agenda 2063 and increasingly in African national and regional development strategies. Given the small size of most national markets and the number of landlocked countries in Africa, boosting regional integration is also a key continental objective through free trade areas (FTAs), trade facilitation, and infrastructure investments. Together, industrialisation and regional integration are two of the African Development Bank's priority 'high five' areas, with wide acceptance that African economies need to promote diversification away from raw commodity exports to processing and value-addition.<sup>2</sup> All of these issues feature in the regional agenda in West Africa.

Despite high level support for what seem to be mutually reinforcing agendas, promoting regional value chains faces numerous challenges. In West Africa, for example, regional market liberalisation is framed under the ECOWAS Trade Liberalisation Scheme (ETLS) on one hand, while the West African Common Industrial Policy (WACIP) sets out to promote regional value chains as "a pragmatic stepping stone for the region in order to more sustainably link to [Global Value Chains] in the future" (Weigert, 2016).<sup>3</sup> But trade and industrialisation objectives can work at cross-purposes. Moreover, reconciling regional and national goals can be a major hurdle. This underlines the need to understand how these dynamics play out in specific value chains.

This paper focuses on cement. Along with agriculture, UNECA (2016) highlights the transformative potential of minerals in Africa while McKinsey (2016) cites construction as one of six high potential, under-exploited sectors in Africa.<sup>4</sup> Cement and clinker feature in national strategies such as Togo's Poverty Reduction Strategy Paper (Government of Togo, 2014) while construction and minerals transformation are cited as high potential sectors in the regional industrial policy, WACIP. Cement therefore stands out as an important sector to understand the interplay of national and regional market dynamics.

## A star sector

While Africa as a whole is described by White (2015) as "the last great cement frontier", average cement prices in West Africa are estimated at 200% above the world average. Though development practitioners increasingly recognise the potential of low-value minerals-based industrialisation, the limited attention to cement stands in contrast to its central place in public and aid-financed construction of houses, schools and hospitals, not to mention the roads, railroads and factories that underpin economic development.<sup>5</sup> International partners provide massive financial support for hard infrastructure investments, relying on the regional cement market without, however, paying attention to the challenges and opportunities inherent to national and regional cement value chains. Though UNECA examined the role of "the cement-based industries in economies of construction and the prospects of their development in West Africa" in 1966, and while donors such as the IFC, AFD and GIZ do engage directly with the cement industry, development policy makers generally think and do little about cement and construction materials.

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<sup>2</sup> AFDB, 2016 <https://www.afdb.org/en/news-and-events/african-development-bank-accelerates-pace-with-high-5-priorities-15879/>.

<sup>3</sup> For the WACIP see here: [http://old.ecowas.int/publications/en/wacip/wacip\\_final\\_20100622.pdf](http://old.ecowas.int/publications/en/wacip/wacip_final_20100622.pdf); also see Traoré, 2016 [www.europarl.europa.eu/cmsdata/105510/K.Traore\\_Ecowas.pdf](http://www.europarl.europa.eu/cmsdata/105510/K.Traore_Ecowas.pdf); Weigert, 2016, <http://www.ictsd.org/bridges-news/bridges-africa/news/regional-before-global-a-value-chain-approach-to-industrialisation>.

<sup>4</sup> The sectors are agribusiness, light manufacturing, financial services, pharmaceuticals and construction. The potential contribution of low value minerals to economic transformation is also recognised in the Africa Mining Vision (AU, 2009).

<sup>5</sup> Low value minerals are broadly taken to include Limestone, granite, sand, salt and clay are among low value minerals which are very useful for building infrastructural projects in most countries.

Falling or stabilising growth rates in West Africa and the current commodity cycle downturn highlight the potential of low value minerals and materials such as those used in the construction sector in supporting growth as well as employment creation and greater value addition.<sup>6</sup> Government, donor and private sector approaches to foster infrastructure development in West Africa will further increase demand on the construction sector and on the cement value chain with implications for employment opportunities in production and marketing, and in the use of cement in construction.

This study therefore seeks to better understand the interplay of regional policies and ambitions with national policies, actors and interests, and their roles in current cement market dynamics. Though not a fully-fledged political economy analysis, it attempts to identify some key players and influences that merit further attention or research.

Overall, the study highlights the importance of understanding market structures and political economy dynamics, particularly when looking at regional industrialisation strategies. While regional market liberalisation commitments aim to encourage economies of scale through enlarged markets, it is important that this translates into lower prices if the wider region is to benefit. Any attempt to promote regional industrialisation strategies must take context and sector specificities into account and consider the power and interests of private sector operators and their influence on public authorities, as well as the dynamics in related sectors such as energy and transport, all of which may undermine the potential benefits of regional approaches. The potential role of regional organisations in promoting competition offers an avenue for further research and analysis.

### Study overview

The study is organised as follows: Section 2 contextualises cement in West Africa, lays out the key sector characteristics and market structure (with international and regional companies) and sketches the relevance of the sector in the development process and policy discussions. Section 3 then discusses the opportunities and constraints of the sector and the role of regional policies aiming at economic transformation. Section 4 concludes with preliminary implications for policy-makers.

## 2. The context, sector characteristics and market structure of cement in West Africa

### Context and trends

Cement is a primary input for building roads, rail and ports, but also hospitals, schools, factories and housing. It is especially important in post-conflict reconstruction where demand for cement rises along with that of other construction materials. A recent World Bank study (2016) underlines the role of cement in the competitiveness and growth of African economies as well as for the welfare of less well-off households due to its role in infrastructure and housing construction. Beyond the development impact of what is built, construction itself creates employment. Historically, construction is a very important employer, particularly in developing countries and “plays a fundamental role in teaching new on-the-job skills to workers, many of whom had previously been farmers and petty traders” (Maugeri et al., 2015). As such, cement serves as a

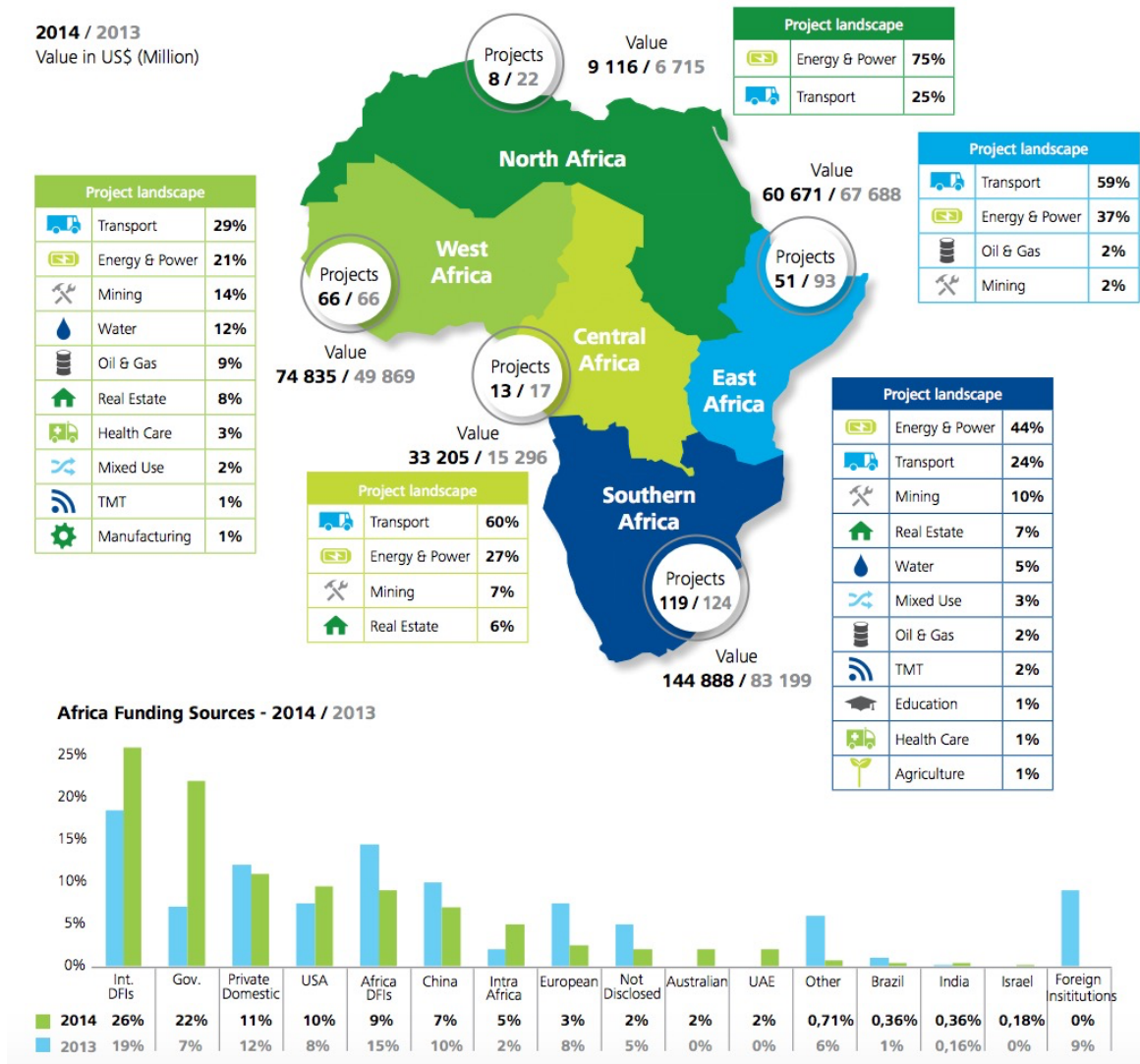
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<sup>6</sup> While the need to transform minerals is well established (e.g. UNECA, 2016), Mckinsey (2016) point to six sectors that are high growth, high profitability, and low consolidation - wholesale and retail, food and agri-processing, healthcare, financial services, light manufacturing, and construction.

key indicator of the performance and trajectory of an economy – “especially those coming off a low base” (White, 2015).

For all regions except East Africa, the value of major construction projects across regions was higher in 2014 than 2013, rising in West Africa from US\$49.9m in 2013 to US\$74.8m in 2014 (see Figure 1). These projects involve a range of sectors where cement is a key input, shown in the inset table. Countries such as Burkina Faso are predicted to see cement consumption rising by 12% per annum over five years from 2015, far ahead of economic growth rates (Le Monde, 2015).

Figure 1: African Construction Trends (2014)<sup>7</sup>



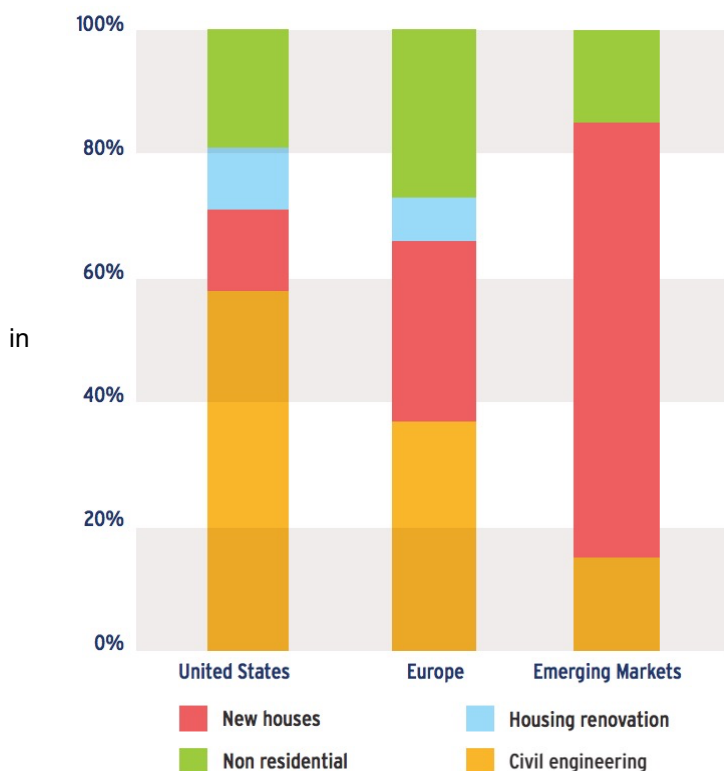
Source: Deloitte, 2014

<sup>7</sup> Deloitte Southern Africa produces the African Construction Trends Report annually in collaboration with our African member firms. The sampling basis requires that to be included in the report, infrastructure construction projects are valued at over US\$50 million and that they had broken ground, but not been commissioned, as at 1 June 2014. Such projects are included on the Deloitte database, which is used to produce the report. The report therefore focuses on projects that are physically under construction, with construction crews on-site at the annual cut-off date.” (Deloitte, 2014).

### A job creator?

Developing country cement consumption is most closely related to housing (Figure 2). Though its role in economic development may be under-discussed, “in developed economies housing is by far the most important tangible asset” (Collier and Venables, 2013).<sup>8</sup> At the same time, there is broad consensus that residential construction creates more employment than other construction (e.g. Collier and Venables, 2013; Maugeri et al., 2015).

Figure 2: Cement Consumption by Type of Activity and Country



The cement value chain also creates employment opportunities. Though cement production is capital intensive, mining low value inputs can also raise employment opportunities. UNECA’s Sustainable Development Report on Africa points to the importance of limestone processing, clinker production and cement terminals in Africa terms of the “opportunities of technology transfer skills development and on-the-job training,... and adaptive capacity to increase job creation” (UNECA, 2015).

Source: Proparco, 2011

### Starting from a low base

While a key sector in development and while cement consumption is likely to continue to rise, the African continent has the lowest level of cement consumption per head in the world. West Africa’s average annual consumption of 115kg of cement per capita is far below the global average of 513kg per person, even if above the Sub-Saharan African average of 92kg per capita per annum (White, 2015).<sup>9</sup> According to the IFC, average cement consumption in sub-Saharan Africa will grow by 5% per year for the next half decade.<sup>10</sup>

<sup>8</sup> See Collier and Venables, 2013.

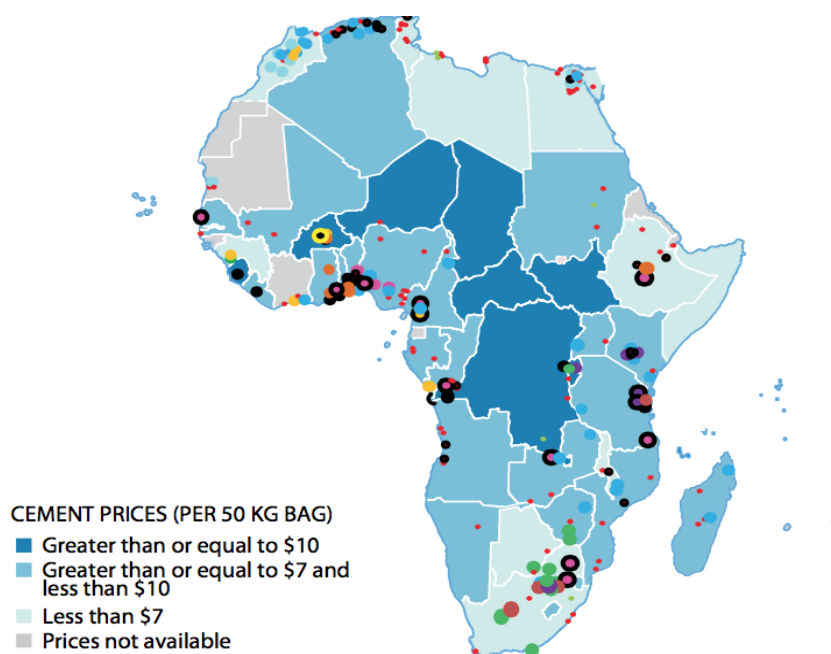
<sup>9</sup> West African consumption is also above Eastern Africa (60kg) and Southern Africa (83kg) (White, 2015).

<sup>10</sup> In: Le Cam, M. 2015. L’” or gris” attise les convoitises en Afrique. Le Monde, 20 octobre 2015.

Low levels of cement consumption are partly shaped by the extremely high price of cement in Africa that are “typically around three times the world price” (Collier and Venables, 2013). This is consistent with World Bank (2016) estimate of an average of \$9.57 (€8.59), per 50kg bag of cement across African countries (where data was available) compared to \$3.25 (€2.92) in the rest of the world. That is 183% higher, on average, than the world price of cement at the end of 2014.

While prices vary within this average, Figure 3 illustrates the higher cost of cement in most landlocked countries in particular, especially in West and Central African. News reports cite prices of FCFA5,500 (€8.40) in Côte d’Ivoire and up to FCFA6,000 (€9.15) in Ouagadougou, Burkina Faso but also lower prices of FCFA3,000 (€4.50) per sack in Senegal, and FCFA4,050 (€6.20) in Togo.<sup>11</sup> In Nigeria, average prices have been around \$9 (€8.08) per 50 kg bag, even with the recent rise in production, with prices reportedly as high as \$10.54 in 2015 (World Bank, 2016).

Figure 3: Distribution of cement prices in Africa and Location of Plants 2015



With low but growing consumption and high prices, much therefore depends on policies and investments to promote production and trade in cement. High cement prices put a brake on the levels of construction that can take place, but also offer a market opportunity for investors, depending on the regulatory environment in place - a key issue discussed below.

Source: World Bank 2016

<sup>11</sup> <http://www.connectionivoirienne.net/110502/uemoa-le-prix-du-ciment-varie-de-3-000-a-dakar-a-6-000-f-en-cote-divoire-le-paquet>.

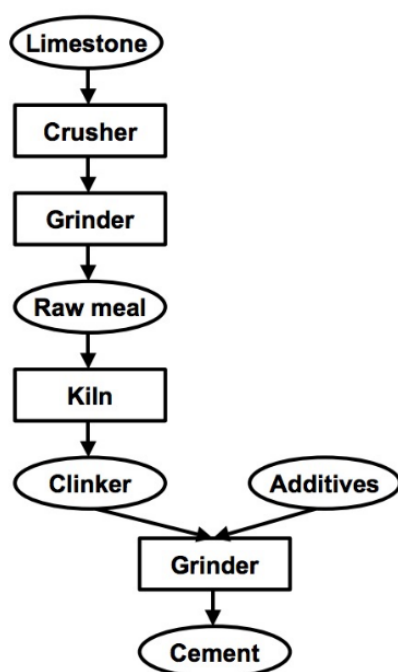
## Sector characteristics: cement production and trade

### The cement production process

To better understand production dynamics in West Africa it is important to start with the cement production process in general.

There are four main stages to the cement production chain (see Figure 4). The *first* involves mining limestone to which is crushed and ground to produce “raw meal”, representing 85% of the raw input of cement; the *second* stage converts raw meal to clinker in a kiln; the *third* grinds the clinker which is then used to produce different blends of cement depending on desired quality and characteristics; the fourth stage is cement distribution (World Bank, 2016). Depending on the desired cement type and quality, other minerals such as clay, shale, sand, iron and/or quartz can also be added in the blending process.

Figure 4: Simplified Diagram of Cement Production



Clinker plants are generally located near limestone mines, with their output then transported to cement factories closer to markets. This means that both clinker and cement are traded goods.<sup>12</sup> Pabon (2014) estimates that the production cost of cement is 30% energy (power and fuel), around 30-40% raw materials (limestone), 10% transport (though up to 18% in Kenya, for example) and 20% other costs (e.g. labour or administration).<sup>13</sup> After energy and limestone, the main cost in cement production is therefore transport, implying that national and regional infrastructures and transport markets are key.<sup>14</sup>

Source: Kema, 2005

<sup>12</sup> Interestingly for limestone producing countries, lime products are used in gold processing and in refining and conditioning metal ores and nonferrous metals such as Copper, Zinc, Nickel, Silver and Aluminium, thus allowing additional industry linkages, particularly given the high level of gold production in Ghana, for example.

<sup>13</sup> See more information at: <http://www.businessdailyafrica.com/corporate/539550-1142730-111od24/index.html>.

<sup>14</sup> This is particularly so for transporting clinker which in dry conditions can be kept for several months without loss of quality. <http://lentrepreneuriat.net/business-news/ciment-une-revolution-nomm-e-dangot>.

**Box 1: Cement production characteristics**

**Limestone** is the essential base input for cement and typically comprises 85% of the raw material input of cement. As a result, cement factories are often integrated with limestone quarrying operations, in order to reduce operating costs. Investors will seek locations with access and ease of extraction for cement plants. The size of the deposit is also important, and most plants are built near deposits that can supply the plant for its full 30-year lifespan.” (World Bank, 2016).

Other minerals: “Key materials used to manufacture cement include limestone, shells, and chalk or marl combined with shale, clay, slate, blast furnace slag, silica sand, and iron ore” (White, 2015).

**Energy** is the second-greatest input into cement production (particularly the production of clinker). In some countries, firms are beginning to vertically integrate into coal mining in order to reduce energy costs. Reportedly, subsidised access to energy has been part of Dangote’s success in Nigeria.<sup>15</sup> “Electricity is astronomically expensive in both East and West Africa” (White, 2015).

Due to **transport costs**, cement factories tend to be located close to sources of raw materials, such as limestone deposits, or close to ports for easy access to imported inputs.<sup>16</sup>

**Product homogeneity.** While cement can be blended with an extender material to produce different strengths or colours, the different blends are generally considered to be substitutable for each other.

**Similar cost structures** in production make it easier for firms to coordinate and agree on a profit-maximizing price or output. Given that technology for cement production is mature and stable, firm costs are likely to be symmetric along the value chain.

**Accessibility** is a challenge, “which brings into play the balance between these deposits, electrical power and water supply, and transport of either clinker, bulk or bagged cement to local and regional markets or ports for export” (White, 2015).

Source: World Bank, 2016 and White, 2015

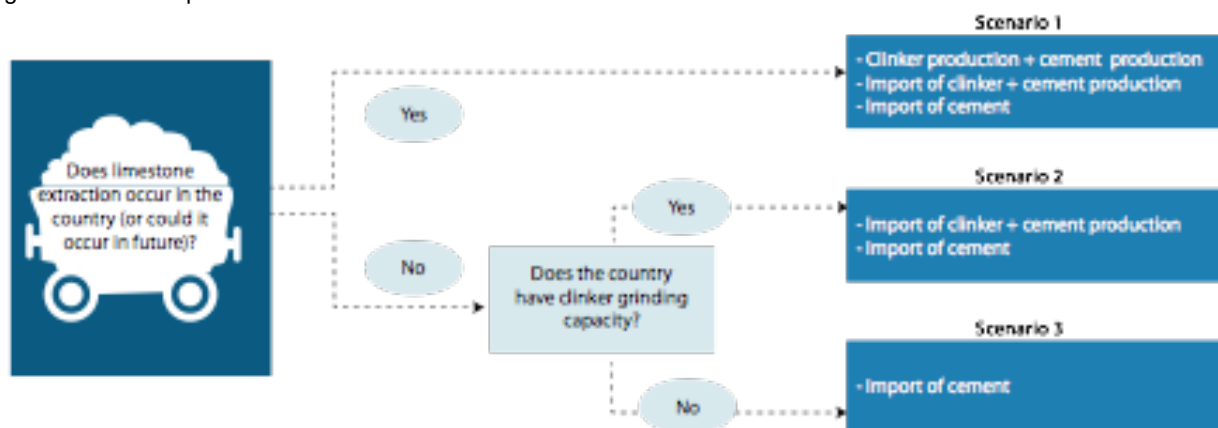
**Production and trading countries**

Sub-Saharan Africa is a marginal cement producer, with output estimated at 116m metric tonnes in 2013, or 2.9% of the world total (Ecobank, 2014). The World Bank (2016) categorises countries according to three different trade and production categories (Figure 5). These are: i) producers of both clinker and cement, ii) cement producers using imported clinker, and iii) cement importers. Seven African countries operate in “Scenario 2”, mixing cement production from clinker imports with cement imports, including Burkina Faso, Côte d’Ivoire, Liberia, and Sierra Leone. The source of clinker and cement can be from the region, while cement is also imported from further afield.

<sup>15</sup> Un approvisionnement optimal en électricité et en gaz - avec l’aide de l’État - lui permet de faire tourner ses cimenteries à coûts réduits. <http://lentrepreneuriat.net/business-news/ciment-une-revolution-nomm-e-dangot>.

<sup>16</sup> For example, Lafarge (2007) puts the maximum radius at which a typical cement plant can remain competitive at 300 kilometers over land. Cement plants with waterborne shipping lanes, on the other hand, have a much greater competitive radius.

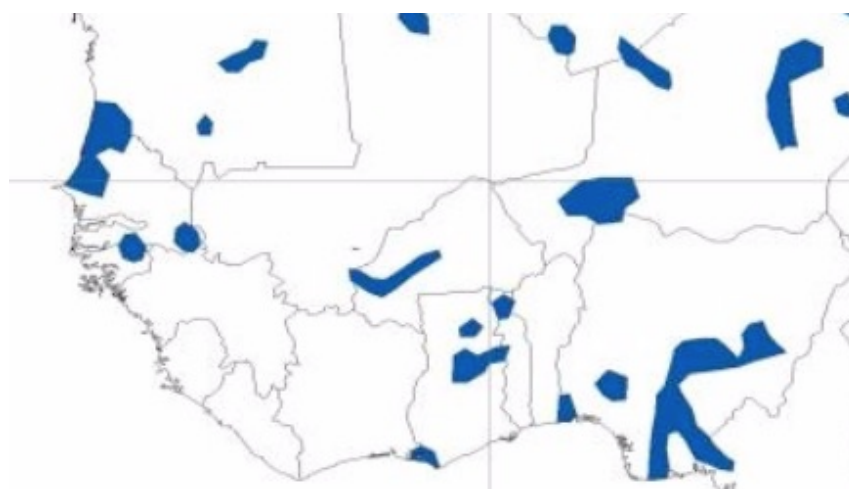
Figure 5: Cement production and trade scenarios



Source: World Bank, 2016

Cement production and trade are highly dependent on the location of limestone deposits, but these are not uniformly located across the region (Figure 6). Not only are they unevenly distributed across West Africa - deposits are found in Benin, Burkina Faso, Ghana, Mali, Nigeria, Senegal and Togo<sup>17</sup> - but they are frequently far from the main urban population that extends from Abidjan to Lagos along the Southern coast.<sup>18</sup> This affects clinker and cement trade flows and helps explain why Africa has a history of cement imports from cheaper producers in Asia and, in the case of Sub-Saharan Africa, North African manufacturers (White, 2015).<sup>19</sup>

Figure 6: Limestone deposits in West Africa



Source: Cantor Fitzgerald, 2014

<sup>17</sup> Though not shown, reports also refer to limestone deposits in Southern Togo. Also in Cape Verde, another ECOWAS member, and Chad in Central Africa.

<sup>18</sup> Minor exceptions are the Southern Ghana-Côte d’Ivoire border, the Benin-Nigeria border and deposits in Southern Togo not shown.

<sup>19</sup> Neman et al., (2016) cite Ghana’s National Industrial Policy that includes measures to “exploit the limestone deposits in northern Ghana for the production of cement and for industry, as well as utilization of the significant clay deposits in the country for the production of bricks and other building materials to support the programme for the construction of affordable housing units”.

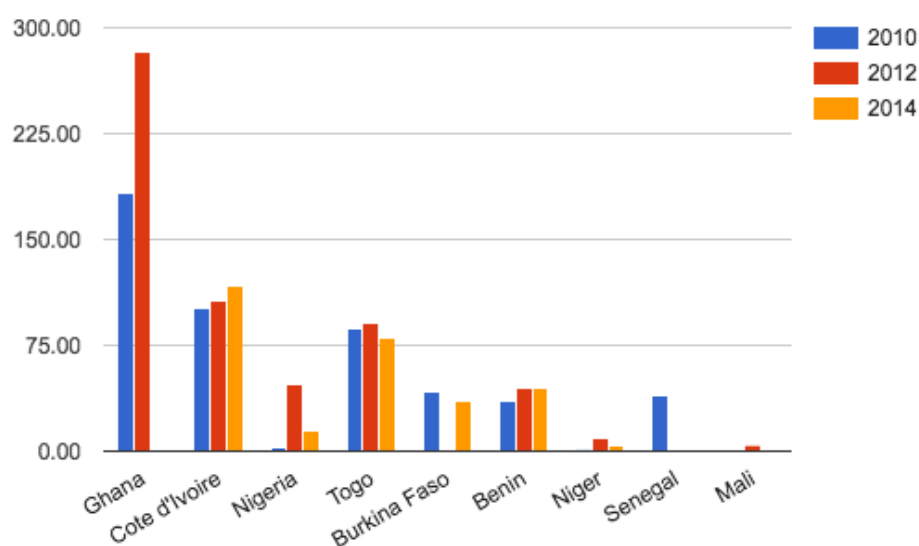


## Clinker and cement production and trade

A combination of the production process and small national markets suggests “it will be attractive for firms to target broader geographical markets to achieve economies of scale” (World Bank, 2016). This raises the importance of understanding what drives or hinders establishment of regional markets.

Regional trade statistics show that West Africa has numerous clinker exporters. Togo exports most clinker in the region, reaching US\$57m of total clinker exports in 2014, 56% of which went to Ghana next door, and 42% to Niger.<sup>20</sup> Other exporters include Nigeria with US\$1.2m, and more recently but more importantly in terms of value, Benin (US\$17.8m) and Senegal (US\$17.4m) (COMTRADE, 2016). While Togo’s high clinker exports reflect its own small domestic market, all of Nigeria’s relatively low clinker exports were destined for Niger. Within Figure 5, this puts Togo, Nigeria and Benin in Scenario 1 with clinker production and the possibility of cement production, though Togo is also a key clinker importer along with Ghana and Côte d’Ivoire, as shown in Figure 7.

Figure 7: Selected country clinker imports 2010-2014 (in millions of USD)



Source: Authors' calculations based on COMTRADE data<sup>21</sup>

<sup>20</sup> By contrast, in 2012, 95% of volume went to Burkina Faso, and 5% to Niger - while those went by road, a rail line linking Lomé to Aflao in Ghana to carry clinker was inaugurated in late 2014, partially explaining this export reorientation towards Ghana. Inauguration of the Aflao rail connection: <http://www.icilome.com/nouvelles/news.asp?id=11&idnews=797074>; Improving the road connection to Niger and Burkina Faso to benefit clinker exports: <http://www.ecovisionafrik.com/togo-ger-pour-gerer-le-troncon-tsevie-tabligbo/#.V6s4IZN96gw>.

<sup>21</sup> The clinker imports data for Burkina Faso (2012), Ghana (2014) and Mali (2014) were not available.

Table 1: Sub-Saharan Africa's leading cement producers (million MT) 2013

Country	Production (million MT)
Nigeria	28.3
South Africa	19.0
Ethiopia	12.6
Angola	8.0
Kenya	7.4
Ghana	6.7
Senegal	6.5
Tanzania	3.7
Uganda	2.6
Côte d'Ivoire	2.5
Benin	2.1
Others	16.4
<b>Total</b>	<b>115.8</b>

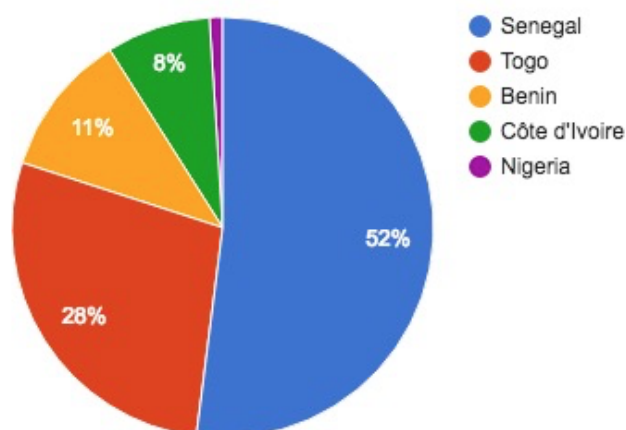
Nigeria has emerged as the continental cement leader, with an estimated total capacity of 28.3m metric tonnes per year (MT/year), equivalent to around one quarter of Sub-Saharan Africa's cement production capacity (Ecobank, 2014). In West Africa, Ghana and Senegal are also important cement producers with capacities of 6.7mn MT/year and 6.5mn MT/year.

Togo comes behind both Senegal and Ghana in cement production terms as shown in Figure 8 below. This is explained by several large-scale importers in Togo that act as re-export hubs, exporting their surplus to neighbouring countries (Ecobank, 2014). Nigeria's share of cement exports is small due to the high local consumption of cement, and the expansion of Dangote Group in West Africa which, instead of exporting, has set up new grinding facilities in underserved markets using imported clinker (see below). More generally, looking at cement exports, 36% of it was between West African countries, showing the importance of interregional cement trade for the region.

Source: Ecobank, 2014

Figure 8: Share of cement exports in 2014 in West Africa

#### Share of cement exports in 2014

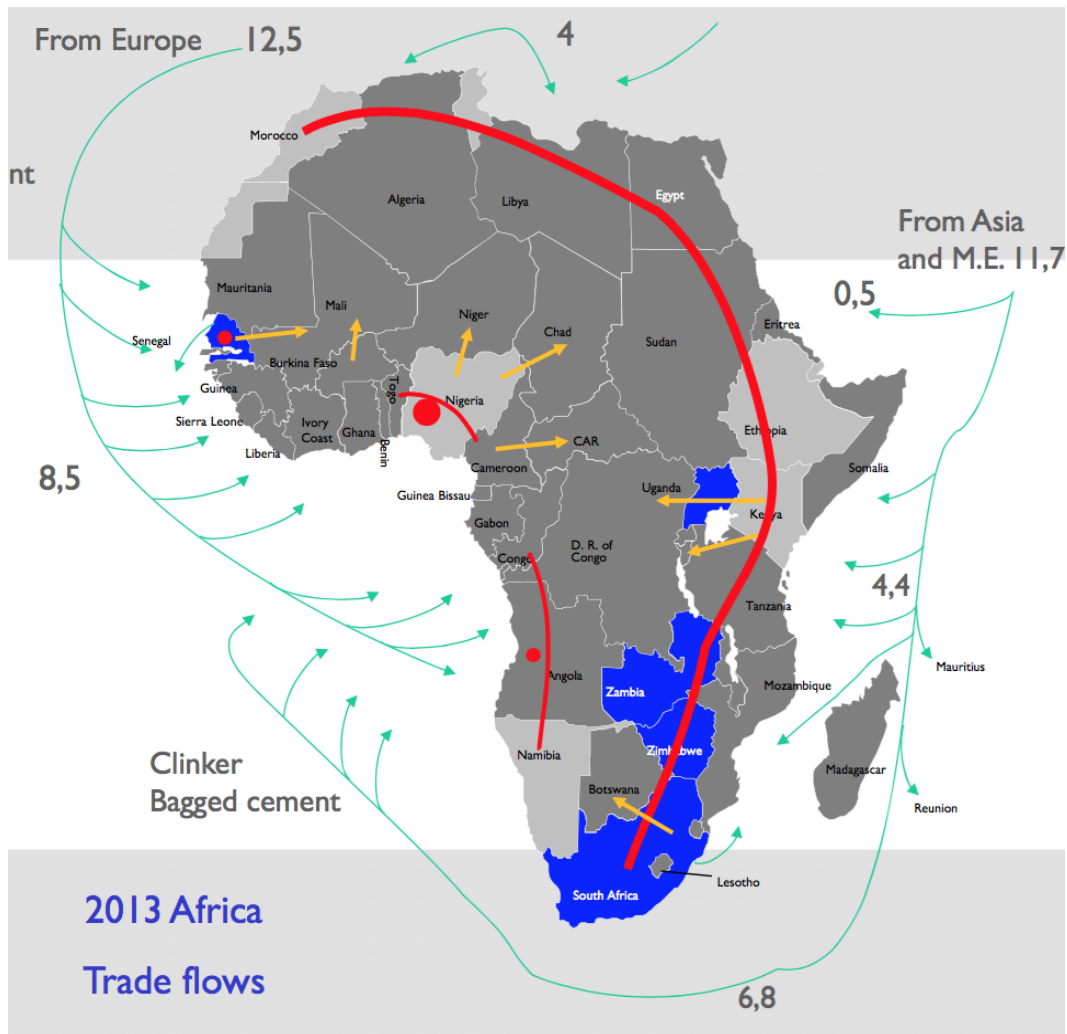


Source: The authors

#### Cement imports

Though cement production is rising, a large proportion of demand in West Africa is met by imports. Figure 9 highlights the main trade flows of cement and clinker within and towards Africa. Much of the flows from Europe to Africa are destined for West Africa (8.5 out of 12.5 million MT), with additional flows from Asia overshadowing the approximately 1 million MT flowing within Africa (Lightart, 2014).

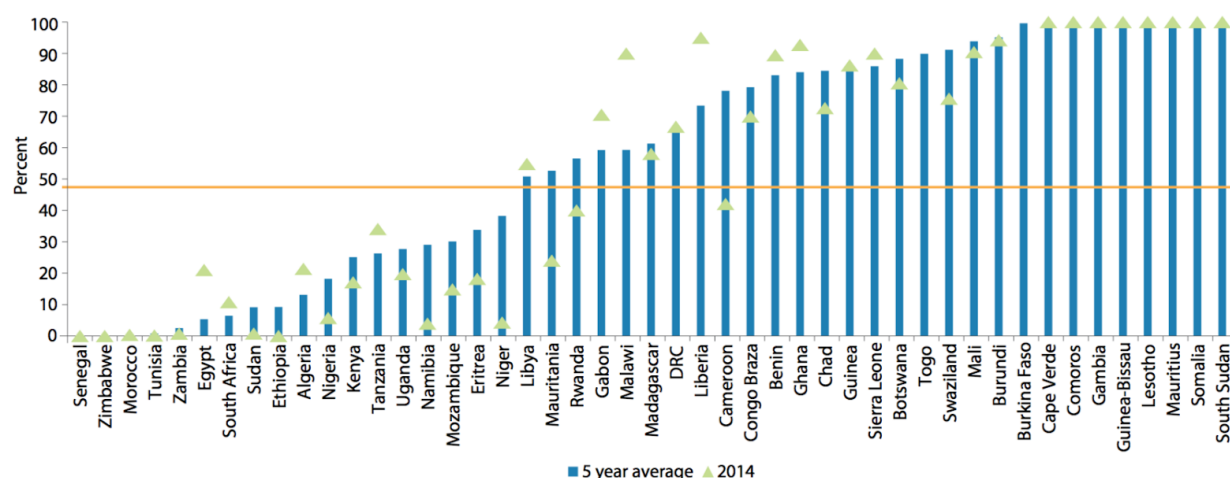
Figure 9: Clinker and cement trade flows (est. millions tonnes, 2013)



Source: Lightart, 2014

As a result of these flows, Burkina Faso, Mali, Togo, Ghana, and Liberia, all met more than 50% of domestic demand for cement through imports while even Nigeria still requires imports to satisfy 15-20 percent of demand (Figure 10). With re-exports, Togo is the source of 42% of imports for those countries that sourced 50% or more of their imports from *African* countries (World Bank, 2016), highlighting the importance of regional trade dynamics in the sector in West Africa.

Figure 10: Import share of cement consumption 2011-2014



Source: Cemnet, 2014, in World Bank 2016

While limestone deposits determine the location of clinker production, high cement import levels indicate a potential for greater production but also the importance of cross-border trade in clinker and cement. That said, the production and trade dynamics ultimately depend on the firms involved.

### Market structure and firms

Moving below the country-level, production and trade dynamics reveal a dualistic cement market.<sup>22</sup> Approximately 54% of Sub-Saharan Africa’s cement capacity is owned (including minority shares) by nine pan-regional firms, among which the two major African firms are Pretoria Portland Cement (PPC) and Dangote.<sup>23</sup> The remainder of the market is smaller suppliers (World Bank, 2016).

The importance of the big players relates to the strategies they adopt: the Dangote group strategy is about “scaling up production of clinker at integrated plants served by plentiful limestone resources, for example in Nigeria and Senegal, exporting this to new grinding facilities in underserved markets, for example in Cameroon and Côte d’Ivoire, and then exporting surplus cement to landlocked countries” (Ecobank, 2014). As such, since 2015 Dangote’s new plant in Senegal is challenging the previous market leader, Sococim (a subsidiary of France’s Vicat), which had a 65% market share; and Ciments Du Sahel, with the remaining 35%.<sup>24</sup> These dynamics have led the likes of Ciments du Sahel of Senegal to invest in a 2.5m Mt/yr plant in Nigeria’s neighbour Benin, with the aim of spreading its production base and lowering dependence on the Senegalese market (Global Cement, 2013).

More recently, Dangote began building a 3m MT/year grinding plant in Côte d’Ivoire to use imported clinker from Senegal and Nigeria, doubling Cote d’Ivoire cement production capacity (Global Cement, 2016). For smaller markets, Dangote has plans to build import terminals in Sierra Leone with a 700,000 MT/year capacity, and in Liberia and Ghana, which will also have a grinding unit (Ecobank, 2014). At Lomé,

<sup>22</sup> While the World Bank (2016) cites government participation in the cement sector as a challenge to competition in the sector, this appears only to be the case in Ghana, with other countries having privatised government stakes: for example, the Togolese government recently privatized the cement and clinker industry and intended to move in the same direction with the phosphate sector (IMF 2014).

<sup>23</sup> The nine are: Lafarge (France), Holcim (Switzerland, merged with Lafarge in 2015), Dangote (Nigeria), Pretoria Portland Cement (PPC - South Africa), Afrisam (South Africa), Heidelberg (Germany), WACEM (West Africa Cement SSA - Togo, with ownership by Diamond, India), CIMAT (Ciment de l’Atlas - Morocco, also linked to CIMAF), ARM (Athi River Mining - Kenya), and Italcementi (Italy).

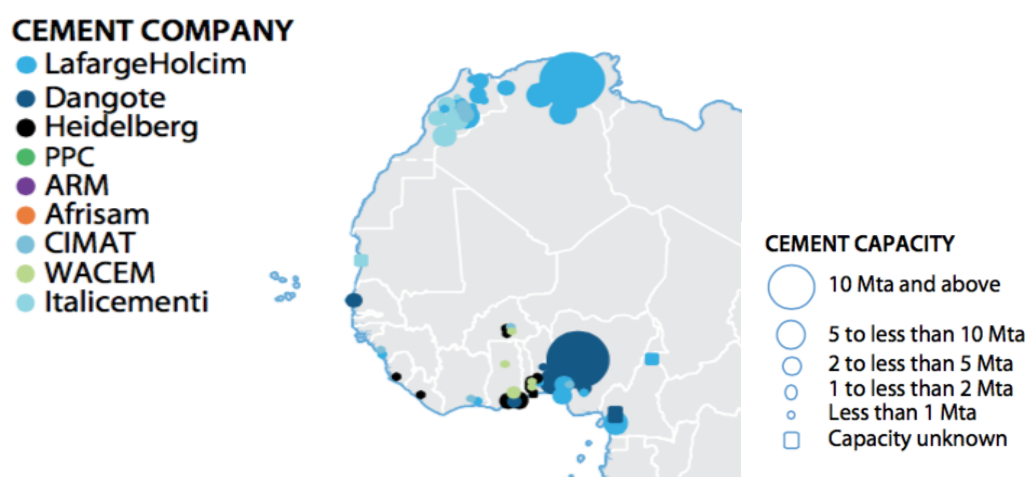
<sup>24</sup> <http://www.globalcement.com/news/item/3474-dangote-cement-commences-operations-in-senegal-and-cameroon>.

Dangote has also been building a cement import terminal and bagging plant with a capacity to process about 500,000 t/yr of cement (USGS, 2013) for the Ghana market. All this helps Dangote to achieve “massive revenue increases”: these rose by 34.5% in the first half of 2017, while Pan-African revenues increased by 63.7%.<sup>25</sup>

Another major player, Heidelberg Cement, from Germany, is taking a similarly regional vision through its investment in Togo, after recently acquiring a 45% stake in Italcementi SpA to expand in the African continent (Bloomberg, 2016). With clinker production in the South and the North of Togo, Heidelberg aims to supply clinker to its own cement grinding mills in Togo, Benin, Burkina Faso, and Ghana, partly replacing expensive clinker that has previously been imported from overseas.<sup>26</sup> At the same time, the multinationals Holcim (Swiss) and Lafarge (French) have merged to build further synergies and compete with Dangote, importing clinker and cement produced in Morocco.<sup>27</sup>

Except for Nigeria the West African wider region is still poorly served by cement and clinker plants (Figure 11). Figure 11 also shows that despite the dominance of Dangote in Nigeria, Dangote is not the only player in the region or subregion.<sup>28</sup>

Figure 11: Location and capacity of cement and clinker plants



Source: World Bank, 2016

While all this suggests a high degree of dynamism in the regional cement market, the production, trade and market dynamics also raise issues relating to competition, industrial policy and trade policy, and how these interact with political dynamics both within and between countries. Given the above overview, the following section raises a range of constraints and opportunities for the cement sector and its role in underpinning regional development.

<sup>25</sup> <http://www.premiumtimesng.com/business/business-news/238646-dangote-cement-achieves-massive-revenue-increase-across-nigeria-african-countries.html>.

<sup>26</sup> Heidelberg Cement Website: <http://www.heidelbergcement.com/en/node/7444>.

<sup>27</sup> The merger was accompanied by the creation in 2016 of Lafarge Holcim Maroc Afrique, a branch of Lafarge Holcim Maroc in charge of investing in the clinker and cement production in francophone Sub-Saharan countries such as Burkina Faso, Côte d'Ivoire, Gabon, Mali, Mauritania and Senegal, and as a result, Lafarge Holcim Maroc Afrique recently acquired la Société ivoirienne de ciment et des matériaux (SOCIMAT), leader in the cement market in Côte d'Ivoire (Jeune Afrique, 2016).

<sup>28</sup> Lafarge has 7.5mn MT/year of capacity with its two subsidiaries, WAPCO and Ashaka Cement, and over 70% ownership of Unicem with Lafarge Holcim (Ecobank, 2014).

### 3. Regional and national challenges and opportunities

While Africa is now the world's fastest growing cement market (AUHF, 2015), the expected price reduction from rising supplies may be dampened by high energy and transport costs, but also by lack of competition within the sector. Collier and Venables (2013) blame the high price of African cement on "dysfunctional ports which provide considerable natural protection, the uncompetitive organisation of domestic production, and the hostile climate for domestic business activity."

As this suggests, there are many policy areas that might help lower the cost of cement, with important multiplier effects in other sectors. The following are discussed in turn: trade policy, transport dynamics, energy, market competition and socio-economic impacts.

#### 3.1. Trade policy

##### The policy. . .

According to the ECOWAS Common External Tariff, cement imports from outside the region face a tariff of 35%, clinker 25%, and limestone 20%, with VAT added.<sup>29</sup> This regulation is relevant for all imports to the region as cement is excluded from the West Africa Economic Partnership Agreement (EPA) with the EU (Bilal and Ramdoo, 2015).

In principle, the ECOWAS region also operates as a free trade area under the ECOWAS Trade Liberalisation Scheme (ETLS), with duty-free access for originating goods to member markets. Though not without implementation challenges, The ETLS aims to promote the free movement of people and goods within the community, implying that trade in locally produced cement between members of the Community is tariff free, as long as it complies with the rules of origin, meaning:

- Wholly produced goods, whose raw materials completely originate from the region.
- Goods which are not wholly produced but their production requires the exclusive use of materials which are classified under a different tariff sub-heading from that of the product.
- Goods which are not wholly produced but their production uses materials which have received a value added of at least 30% of the ex-factory price of the finished goods.<sup>30</sup>

Although some progress has been made, implementation of regulations governing cross-border trade remains mixed. This is further confused by the overlap between ECOWAS (15 member states in total) and WAEMU, whose eight member states are also ECOWAS members: the domestic value added required for a product to be granted originating product status is 35% for ECOWAS, 30% for WAEMU.

##### . . . in practice

Cement production dynamics are closely tied to the prospects of individual producers. Cement imports have led to complaints from West African producers. For example, Dangote representatives in Ghana are reported to have complained to government "to address the low quality bagged cement, imported from China into the country" to ensure the viability of their plant (Construction Review, 2016).<sup>31</sup> West African producers have also complained of cement dumping by Pakistani producers, also an issue in Southern Africa. In 2015, the Ghana Cement Manufacturers Association (GCMA) called for anti-dumping duties on

<sup>29</sup> Though the CET was agreed in January 2015, 'effective application' has been agreed from 1 January 2017 (see <http://allafrica.com/stories/201608171114.html>).

<sup>30</sup> It must be noted that goods manufactured in free zones or special economic schemes involving suspension or partial or total exemption of entrance fees do not qualify for originating products status (ETLS, 2016).

<sup>31</sup> <http://constructionreviewonline.com/2016/05/dangote-group-to-construct-a-new-cement-plant-in-western-ghana/>.

imported cement “to rid the industry of unfair trade practices by importers and protect investments by local cement manufacturers and the employment of locals” (Global Cement, 2015).<sup>32</sup> In Ghana and Mali, this competition has also led to tensions between cement importers and producers, where importers are accused of under-reporting factory-gate prices in order to pay lower VAT.<sup>33</sup> Similarly in Nigeria, Dangote complains that Ibeto, its competitor, uses imported clinker, though there are rules of origin to deal with this (Oxford Business Group, 2013).

At the same time, Dangote’s success in the cement industry largely stems from the Nigerian government’s ban on cement imports, even from within the region. Nigeria has an Import Prohibition List that enumerates products that cannot be imported, including cement, violating the ETLS. No further cement import licenses have been granted since early 2012, while those companies with existing licenses can only import with a planned mandate to develop their domestic manufacturing (AFK Insider).<sup>34</sup> This is in the face of calls by the Cement Producers Association of Nigeria to lift the suspension and amid accusations of favouritism of the government towards Dangote.<sup>35</sup>

Similar processes are going on outside Nigeria. Sococim, a subsidiary of Vicat in Senegal has difficulties selling cement in Mali and Niger and has brought a case to court at a regional level, citing unfair advantages provided to the Nigerian group.<sup>36</sup> In Côte d’Ivoire, the two main producers are protesting against Dangote’s import projects on the basis of unfair advantage while “illicit cement imports” are a regular news feature.<sup>37</sup>

In response, Ghana has been accused of blocking duty-free products from ECOWAS countries by “applying additional high tax rates and sundry fees which are not custom duties but are charged on all imports such as statistical fees, processing fees, and, or sometimes, export levy fees”.<sup>38</sup> Following the protectionist trend in the region, the Ghanaian Minister of Trade and Industry instructed all cement importers in the country to apply for permits. According to the Association of Ghanaian industry, this should “ensure that the right Cost, Insurance and Freight (CIF) could be determined to avoid the cement war that had affected GHACEM and other cement manufacturers, on one hand, and the Ghana Revenue Authority (GRA), on the other, over the accurate values of the imports”.<sup>39</sup> The Ghana Revenue Authority (GRA) increased their valuation of Freight on Board (FOB - the basis on which tariffs and VAT are calculated) from \$25 to \$60 per tonne on imported cement in September 2015, thus doubling the value of additional fees due. Though similar to the Nigerian approach, in Ghana Dangote contested the new valuation, arguing

<sup>32</sup> They reportedly “urged the government to take its cue from South Africa, which recently imposed provisional anti-dumping duties on cement originating from Pakistan. South Africa imposed provisional anti-dumping duties on cement from Pakistan from 15 May 2015 following investigations initiated by the International Trade Administration Commission of South Africa (ITAC) on 22 August 2014 after a number of local cement producing companies submitted an application on behalf of the industry” (Global Cement, 2015).

<sup>33</sup> <https://revuedepressecorens.wordpress.com/2015/11/28/la-guerre-du-ciment/>.

<sup>34</sup> <http://afkinsider.com/74842/cement-next-hot-industry-africa/2/>.

<sup>35</sup> It also explains why what reportedly took global players like PPC “over 100 years to achieve in terms of size and geographical presence, has taken Dangote a fraction of the time” (White, 2015) Also see <http://newsrescue.com/paying-double-the-world-price-dangote-cements-nigerians-in-poverty/#axzz4FV9MTyFF>.

<sup>36</sup> <http://lentrepreneuriat.net/business-newsciment-une-revolution-nomm-e-dangot>.

<sup>37</sup> See for example <http://www.connectionivoirienne.net/117362/cote-divoire-limportation-non-reglementee-ciment-menace-emplois-securite-constructions-investissements-gouvernement-impuissant> and the following: <http://lentrepreneuriat.net/business-newsciment-une-revolution-nomm-e-dangot>.

<sup>38</sup> The Ghana Investment Promotion Centre Act, 2013 takes a similar approach to the Nigerian Prohibition List in “protecting the average Ghanaian products and nationals vis-à-vis other foreigners or products”. Section 18 of this act provides a list of enterprises wholly reserved for Ghanaians though cement does not explicitly appear here. <http://lentrepreneuriat.net/business-newsciment-une-revolution-nomm-e-dangot>.

<sup>39</sup> <http://pulse.com.gh/business/association-of-ghana-industries-agi-applauds-spio-gabrahs-decision-to-cut-cement-importation-id4880545.html>.

that removing the regulation would make cement more affordable to consumers.<sup>40</sup> In sum, despite commitments to free internal movement of goods, ECOWAS member states are raising barriers to protect domestic producers from cement imports, including intra-regionally. Such measures help some producers, but harm consumers as prices remain high. With confusion around regulations and weak policy implementation, a regional market for cement seems far off.

### 3.2. Transport dynamics

On top of trade policy and implementation concerns, transport makes up a large part of the cost of cement due to the costs of moving clinker and cement bags around the region. Recent studies on the transport sector in West Africa have highlighted the numerous actors and factors at work in the transport, port and rail sector that raise the costs and prices in that sector in the region (e.g. Byiers et al., 2016). These partially explain the price of cement, and the policy and investment choices in the cement sector. Yet some contextual features have changed and may create space for regulatory reforms while altering the incentive environment for public and private actors in the transport sector.

The production costs of cement for non-limestone endowed landlocked countries such as Burkina Faso and Mali are higher than for coastal countries due to excessive transport costs of limestone or clinker. Transport costs of clinker - often imported from the Mediterranean - add between €53 and €61 per tonne.<sup>41</sup> When the Burkinabe cement market was liberalised in March 2015, Diamond Cement Burkina was no longer the only producer, and prices fell from CFA140,000 per ton of cement (€213) to CFA117,000 (€178) in October 2015, equivalent to a small drop from €10.65 to €8.90 for a 50kg bag.<sup>42</sup> Nonetheless, recent articles from June 2017 have prices reaching CFA6000 per sack, equal to €9.13.<sup>43</sup>

Given the high transport prices in West Africa, many private sector actors outside the transport industry have started to invest in transport themselves. In the cement industry, the likes of Dangote, have started to purchase their own trucks, reportedly importing new trucks to facilitate distribution of cement products around Ghana in 2016.<sup>44</sup> That approach is also potentially intended to sidestep complicated relations within the transport sector in many West African countries due to the way it is managed through transport sector unions and multiple regulations governing cross-border freight distribution.<sup>45</sup>

Given the importance of weight in transporting clinker and transporting, axle load regulations and how these are applied becomes a major issue with the majority of mainly small sized truckers breaching axle loading limits. As of 1 June 2016, the UEMOA axle load regulation should have entered into force in the latest of many attempts over the past decades.<sup>46</sup> If applied or enforced this would reduce the harmful impact of overloaded trucks on road infrastructure but also reduce the average tonnage per truck from 40 tons to 28 tonnes, thus increasing transport costs, with knock on costs for cement producers in UEMOA member countries that have to import limestone and/or clinker. In April 2017 the Burkinabe government together with the *Association des cimentiers de Burkina Faso (ACB)* agreed to keep cement prices at CFA5000 (€7.60). However, with prices rising up to CFA6000, the difference is blamed on transport costs.<sup>47</sup>

<sup>40</sup> <http://kasapafmonline.com/2016/05/31/cut-taxes-will-reduce-prices-cement-dangote-begs-govt/>

<sup>41</sup> Ousmane Diallo, CEO of Cimaf in: Le Cam, M. 2015. *L'or gris" attire les convoitises en Afrique*. Le Monde, 20 octobre 2015.

<sup>42</sup> Idem.

<sup>43</sup> <http://www.rfi.fr/emission/20170628-burkina-faso-le-prix-ciment-flambe>.

<sup>44</sup> [punchng.com/dangote-cement-recruit-5000-workers-ghana/](http://punchng.com/dangote-cement-recruit-5000-workers-ghana/)

<sup>45</sup> More presented here: <http://lefaso.net/spip.php?article71731>.

<sup>46</sup> In fact, Regulation 14 goes back much further but has so far failed to achieve successful implementation.

<sup>47</sup> <http://www.rfi.fr/emission/20170628-burkina-faso-le-prix-ciment-flambe>.



Poor quality and high road transport costs and prices have created incentives for investors and public authorities to shift the attention from road transport to railway transport. The colonial idea of a railway belt in West Africa connecting coastal and inland capitals and cities between Abidjan and Lomé - Abidjan, Ouagadougou, Niamey, Cotonou and Lomé is being revived, principally driven by the French group Bolloré Africa Logistics, which holds a strong position in transport logistics and a quasi-monopoly in container terminals in West African ports. Its interest in investing in the Abidjan-Lomé railway belt was triggered by the high volumes of clinker and cement handled by the port of Abidjan - currently, two million tonnes of clinker and cement are offloaded in Abidjan port each year destined for cement factories in Niger, Mali and Burkina Faso.<sup>48</sup> Along with an agreement to transport high volumes of manganese by rail to Abidjan, both factors have been conducive for investments in the Tambova-Ouagadougou-Abidjan railway line, in which Bolloré Africa Logistics and two successive governments in Burkina Faso have taken an interest. There are now four producers in the Burkinabe market, located near the railway line connecting Ouagadougou with the gateway port of Abidjan; however, prices remain high.

Despite efforts by multiple governments and private sector actors - with support from a number of donors - reforms in the transport sector that might help lower both transport costs and prices and raise sector quality are evolving in rather slow, unpredictable ways. Some of the resistance encountered is highlighted in Box 2.

**Box 2: Resistance to regulatory reforms in the transport sector in Burkina Faso**

A zinc mine in Perkoa in the Sanguié zone of Burkina Faso hired a local subsidiary of the logistics multinational Damco to reduce transport costs and price. In 2013 Damco Burkina subcontracted a large contract to a Burkinabe trucking company Cotradis to transport zinc from the Burkinabe mine to the port of Abidjan. To reduce costs, Cotradis started back haulage of truckloads of clinker from the port of Abidjan to the Burkinabe cement producer CIMAF. This way costs for both transporting zinc and clinker were reduced. As of mid 2015, smaller truckers associated with one of the key federations in the trucking industry, OTRAF (Organisation des transporteurs routiers du Faso) started pressuring the Burkinabe road transporters federation to take measures against a perceived "unfair competition" by Damco and Cotradis. Yet, the president of OTRAF was reportedly reluctant to pressurise government and other private actors on what truckers perceived to be market capture by bigger players.

A second case involves OTRAF and Burkinabe cement factories, and relates to the import of Togolese clinker. A Benin based professional transport company obtained a large contract to transport clinker from the port of Lomé (Togo) to the Ouagadougou based cement factory Cimburkina. The transporter bought 150 modern trucks in order to execute the contract. Affiliated truckers pressured OTRAF to demand the application of the ECOWAS and bilateral arrangements on freight distribution between landlocked and coastal countries. According to these formal rules, the clinker and cement should have been transported by Togolese and Burkinabe carriers, excluding the Benin based transporter. The deal between the latter and Cimburkina allowed the transporter to raise the cost recovery and profitability of his investment. The OTRAF president engaged with Burkinabe authorities and sealed a deal that allowed the Benin transporter to continue its operations by setting aside 10% of the total volume for Burkinabe transporters, thus sharing the freight more widely.

Both examples illustrate that the transport market is slowly transforming in rather unplanned ways as the incentive environment is changing. All this is reflected in pressures within the umbrella transport body of OTRAF, the tensions between professional operators or companies and more informal ones, as well as the pressures from both sides on government.

Source: *Transport de minerai: le président de l'OTRAF accusé de trahison, l'Événement*, 30 Mai 2016  
<http://www.evenement-bf.net/spip.php?article1433>

<sup>48</sup> Serge, M. 2015. Dossier Le Monde. *La conquête de l'Ouest (de l'Afrique)*, Octobre 2015.

### 3.3. Limited industry competition

Beyond transport and trade-related costs, high cement prices are shaped by limited competition in the sector. Though varying in quality and type, different cements are typically considered to be substitutable and therefore part of one market. While this should increase competition, cement's resource-consuming manufacturing process, reliance on limestone sources, and high transport costs, and the size of demand in Africa together mean that "the industry shows features that are conducive to high barriers to entry and potential anticompetitive practices" (World Bank, 2016).

Further, the cement industry is closely linked to and affected by political actors, including host and home governments.<sup>49</sup> In the 1970s, governments directly intervened and tried to structure cement production on a regional basis - Ghana, Togo and Côte d'Ivoire created a joint venture, Ciment de l'Afrique de l'ouest (CIMA), which soon after went bankrupt. Engaging and even working with governments and policy-makers is part of the practice of businesses, especially where powerful private players have privileged access to key government actors.

It is not rare to see global players from Europe and Africa competing on commercial but also on a political basis, by lobbying host governments (sometimes supported by their home governments) and even through introducing court cases. One newspaper article regarding Dangote in Senegal reports the French President calling his Senegalese counterpart to discuss competition issues between French Vicat and Dangote Cement.<sup>50</sup> In Nigeria, Lafarge Holcim is lobbying the Nigerian government to benefit from the same electricity access as its rival. In 2015, Lafarge Holcim met with Heidelberg and Ciments de l'Afrique to make an association to denounce or prevent what they call anti-competitive practices of Dangote.

According to White (2015), Ibeto, the last remaining importer of cement into Nigeria claims they have not been granted the same treatment as Dangote. "The company has accused Dangote of bullying the federal government to continue the ban on imports of clinker cement or drastically increase the duties and taxes on clinker imports", claiming that this puts smaller producers and cement bagging companies at a disadvantage as they try and grow to become self-sufficient manufacturers (White, 2015).

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<sup>49</sup> Governments also play important roles in fostering an environment of peace and stability, or post-conflict reconstruction. In all these spheres, West Africa offers ample examples, including a post-conflict reconstruction boom in Cote d'Ivoire and business uncertainty during the political instability after the ousting of President Konaré in neighbouring Burkina Faso.

<sup>50</sup> "African tycoon draws Nigeria, France into 'cement war' in Senegal"  
[http://www.newvision.co.ug/new\\_vision/news/1338958/african-tycoon-draws-nigeria-france-cement-war-senegal](http://www.newvision.co.ug/new_vision/news/1338958/african-tycoon-draws-nigeria-france-cement-war-senegal)

**Box 3: Government rules can also reinforce producer dominance - more examples from Nigeria**

Dangote holds the Mining Lease Agreement (MLA) for the limestone quarry feeding Sub-Saharan Africa's largest plant, the Obajana plant, and at least six Exclusive Prospecting Licenses (EPL) for limestone resources. Together, these represent a total of 569 million tons of limestone and 119 million tons of additive materials in the area, which is proposed to last for more than 90 years. This is longer than the cement plant's expected life of 50 years and would indicate that there may be some room to either award a license to more than one firm in the area or to retender the lease agreement and licenses in future (Obajana Cement 2005). Under national regulations, however, the MLA has a duration of 25 years and is renewable for further periods of 20 years provided that the holder has complied with minimum work commitments and that other legal and regulatory requirements have been met (GEUS 2011; KPMG 2013). It is generally acknowledged that the high-capacity limestone with which Dangote has been awarded in Nigeria has helped the firm establish new grinding and import facilities across the region.

Another example of state intervention on behalf of Dangote involves the Standards Organisation of Nigeria (SON). This state body adopted a new standard in 2014 that greatly limits the use of widely produced 32.5 grade cement (to plastering only) and imposes 42.5 grade cement as the new standard for general purpose use (including block making). SON has cited safety reasons for the restriction, despite the fact that 32.5 grade cement is commonly used around the world and has characteristics that are desirable for various uses. The new standards have negatively affected the Lafarge brands in Nigeria, which produce large quantities of 32.5 grade cement. Consequently, brands that compete against Dangote—Lafarge Africa, Ashaka, and Unicem—have filed a suit against SON challenging the order. Dangote, the main producer of 42.5 grade cement in Nigeria, has supported the new standards (Meristem 2014).

*Source: World Bank, 2016*

Alliances between governments and cement producers can generate negative externalities. In a context where the cement prices are high, civil society often complains about anti-competitive business practices, which contribute to high prices.

The opportunity for sector reforms then relates to how regulations and incentives to improve competition might be designed and implemented. Further, although much of production is dominated by large producers, the sector remains fragmented with a substantial part of the market still in the hands of small producers. This fragmentation offers potential opportunities for smaller operators to invest in the industry and create additional jobs.

### 3.4. Energy costs

An important driver of economies of scale in the cement industry is the large share of energy in cement production costs - fuel and electricity account for 70% of cement production costs in Nigeria (compared with the global average of just 30%, Ecobank, 2014) due to excessively high energy costs. Apart from the large quantities of energy required, the African Union Housing Forum points to the need for regular energy supplies, which are not readily available in many African countries. This constrained supply of electricity reduces outputs, and results in plants operating below capacity (African Union Housing Forum, 2015). While frequent power shortages cost 6% of turnover on average for formal enterprise (AfDB, 2011), it went up to 11% for Dangote Cement in the first semester of 2014, following gas supply issues boosting production costs.<sup>51</sup>

<sup>51</sup> <http://www.bloomberg.com/news/articles/2014-08-15/dangote-cement-profit-declines-as-gas-supply-issues-boost-costs>.

Importantly, energy price variations can impact on cement company decisions to produce or import clinker. While energy is used for crushing, milling, agitation, burning, grinding and bagging operations (see Figure 4), kiln operations to transform limestone into clinker represent around 90% of the total energy used to produce cement (Ohunakin et al., 2013). This can give an incentive to produce clinker locally when the energy price is low, or import clinker when the energy price is high.<sup>52</sup>

Energy raises further issues of political interest. In Nigeria, Lafarge was reported in 2015 as lobbying government to benefit from the same preferential electricity tariffs as their rival Dangote, which according to Lafarge benefited from anti-competitive practices.

With high energy costs and insufficient and unreliable supplies in many countries and regions, the main responses to energy scarcities may go against wider commitments to sustainability. Dangote has recently declared it will shift to coal rather than gas to fire the kilns which produce clinker<sup>53</sup> to cope with gas shortage and reduce energy costs although this strategy goes against ECOWAS Renewable Energy Policy (EREP).<sup>54</sup> At the same time, Ashaka Cement, a subsidiary of Lafarge Africa is setting up an Independent Power Plant (IPP), using a coal mine in Akko Local Government Area of Gombe State, Nigeria.<sup>55</sup> Reports also cite Dangote in Nigeria as building their own pipelines from different gas fields to ensure access to gas.<sup>56</sup>

Further, while the AfDB finances coal fired plants, the World Bank is under increasing pressure by environmental lobbyists to stop funding such operations.<sup>57</sup> But from an economic perspective, and looking at the cement industry in Egypt, for example (Oxford Business Group), switching to coal based energy will be a positive move overall for the industry in the medium to long term based purely on cost measures.<sup>58</sup> This focus on cost over environmental factors then reflects a wider tension, that of promoting the sector vis-a-vis socio-economic and environmental impacts.

### 3.5. Socio-environmental impacts

While trade policy discussions are generally framed in social terms relating to employment, the direct impact of limestone mining and cement and clinker production has so far not been mentioned. Research shows that because of the energy and water-intensive nature of the industry, cement engenders significant environmental, climate and social impacts; as demonstrated by its total share of global carbon dioxide (CO<sub>2</sub>), amounting to 5% (Rubenstein, 2012).

<sup>52</sup> In 2014, the problem of power shortages and gas allocation has led many within the industry to turn to imports to meet their clinker needs. Back then, local clinker utilisation was hovering around 50%, while cement utilisation was close to 70%, suggesting a significant reliance on imported clinker. "Starting in 2015, however, after the domestic cement price got hit, it became really unfeasible to import clinker. Companies would break even at best. So at the moment, companies are only phasing out the inventory of imported clinker. With improved fuel supply to the industry, following progressive coal transformation steps, clinker utilisation rates have already picked up significantly in 2015, and hence low cost supplies are hitting the market with producers competing aggressively over market share," OBG reports. <https://www.oxfordbusinessgroup.com/analysis/not-set-stone-cement-producers-overcome-energy-challenges-using-coal>.

<sup>53</sup> <http://www.reuters.com/article/nigeria-dangote-cement/corrected-update-1-gas-shortages-turn-nigerias-dangote-to-coal-to-make-cement-idUSL8N1C62VZ>

<sup>54</sup> <http://sweetcrudereports.com/2016/07/16/dangote-cement-switches-to-coal-to-power-plants/>

<sup>55</sup> <http://www.nigeriaelectricityhub.com/2016/03/22/lafarge-subsiary-to-establish-coal-power-plant-in-gombe/>

<sup>56</sup> See more at: <http://afkinsider.com/74842/cement-next-hot-industry-africa/#sthash.ZuW4hbnO.dpuf>.

<sup>57</sup> <http://constructionreviewonline.com/2015/04/coal-power-plants-for-africa/>

<sup>58</sup> <https://www.oxfordbusinessgroup.com/analysis/not-set-stone-cement-producers-overcome-energy-challenges-using-coal>.

The wider potential conflicts around limestone mining and clinker production are highlighted by various examples. One Togolese case involving Heidelberg Cement points to the violation of labour rights (association and collective bargaining; collective dismissal); health and safety measures; tensions between communities; suspicion of collusion with the public sector;<sup>59</sup> pollution of plantation and water; air quality causing pneumonia, among others.<sup>60</sup> Another case is Dangote's investment in Senegal. This was subject to criticism for damaging sensitive forests, not consulting the local communities and traditional leaders, providing them with a low compensation for their lands, and using a coal plant with water cooling which uses 4500 m<sup>3</sup> of water per day in the groundwater of a Sahelian country.<sup>61</sup> The literature on the environmental and social impacts of cement in West Africa also provides other examples in Nigeria, Togo and in Ghana showing some of the negative environmental and social impacts linked to limestone mining.<sup>62</sup>

To address these, the Cement Sustainability Initiative was founded in 1999 to “*examine issues surrounding sustainable development in the cement sector and to develop and promote best practice across the industry in a number of areas*” (WBCSD, 2016). This initiative, with participation of Lafarge Holcim and other global cement producers, presents a charter describing the commitments and responsibilities of its members towards more sustainable and environmental-friendly cement production processes (use of alternative fuel, efficiency measures, blended cement, carbon capture and storage). These efforts to minimise negative impacts are also supported by policy-makers (EU and OECD) and by international financial institutions (EIB, IFC, AfDB...). However, as with all of the challenges presented above, much depends not only on the policies and commitments but the frameworks and incentives in place to implement and enforce such mechanisms.

## 4. Conclusions & implications

Despite rising cement production across the region, by world standards West African cement prices remain high and consumption per head low though construction demand is rising. Together these represent a bottleneck to regional, domestic, and aid-financed policies aiming at improving infrastructures, urbanisation and social housing, all policy areas that are key to widening the impact of development interventions and promoting economic transformation.

But generally, the development potential of the cement industry and the construction sub-sector is not prioritised by development practitioners and policy makers. This stands in contrast to the central role these commodities have in publicly and aid-financed construction of houses, schools and hospitals, not to mention the roads, railroads and factories that are important for economic development. With growing urbanisation and infrastructure development likely to increase demand, the employment potential of cement and the construction sectors are positive, but rely on a range of policy interventions in support of an efficient cement value chain with strong intersectoral linkages.

With recent regional and national policies in West Africa increasingly focused on economic transformation and the potential role of low-value minerals-based industrialisation, the cement sector merits closer attention. While promoting a more efficient cement value chain may offer development opportunities, the

<sup>59</sup> <http://www.togo-online.co.uk/togo/wacem-retour-sur-20-ans-de-bradage-du-calcaire-togolais/>.

<sup>60</sup> <http://vertogo.mondoblog.org/2014/03/06/nul-nest-mieux-ailleurs-que-chez-soi-rappel-lordre-environnemental-de-wacem/>.

<sup>61</sup> [http://www.newvision.co.ug/new\\_vision/news/1338958/african-tycoon-draws-nigeria-france-cement-war-senegal](http://www.newvision.co.ug/new_vision/news/1338958/african-tycoon-draws-nigeria-france-cement-war-senegal) and <http://www.afrik.com/senegal-la-guerre-du-ciment-fait-rage-entre-vicat-et-dangote>

<sup>62</sup> Olaleye & Oluyemi, E.A. Environ Monit Assess (2010); Agbossoumonde (2011); Aigbedion & Iyayi, (2007); Odukoya, Adeyemi & Jimoh (2004); Aribigbola Afolabi\* , Fatusin & Fagbohunka (2012).

inherent economies of scale and market structures, locations of limestone deposits, and cross-sectoral policy dimensions such as trade, energy and transport give the cement sector quite specific characteristics. These pose important policy challenges to combining national ambitions for cement production capacity with regional market liberalisation, extra-regional import competition, and inwards investment by international firms.

Analysis of trade data highlights the importance of cement imports from outside the region, but also contradicts the commonly held perception that cement in West Africa is 'all about Nigeria'. Senegal and Togo are increasingly exporting to the region, with new investments from a range of different producers cropping up across the region.

That said, a look at the firms that underpin cement production, trade and transport dynamics reveal a dualistic market between a small number of large, global and continental competitors and smaller producers or operators. This is partly to do with the nature of the production process - the need to be near limestone deposits, the energy intensity and the important role of transport. But this also impacts on the way that regional and national policies coincide, the role of politics, and how different non-state stakeholders exercise power and influence over policy makers in different related sectors (transport, energy, trade, industrial policies) and levels.

As with other sectors, political and economic interests and incentives operating between and within countries are particularly important in shaping potential development outcomes.<sup>63</sup> Disentangling these different elements of the cement value chain, the cross-sector linkages and the multiple market and government failures therefore seems an important starting point for understanding the region's high cement prices and for promoting industrial, infrastructure and social development at the national and regional levels.

More specific conclusions are as follows:

- Commitments to liberalise *regional trade* in cement and clinker under the ECOWAS Trade Liberalisation Scheme (ETLS) are undermined by national measures to limit imports, often under pressure from a major industry player. As such, trade policy and trade dynamics are inherently tied up with company strategies and the political weight that these companies exert. For example, Dangote aims to serve the Nigerian and other markets where it has invested in production behind protective barriers. Yet Dangote's other investments in the region require openness from partner countries, where Dangote's strategy relies on *imports* of clinker, as is the case in Côte d'Ivoire, or imported cement in the case of Benin, Ghana, Togo and Mali, leading to tensions with producers in those countries seeking their own protection.<sup>64</sup>
- *Transport* is a key part of the cement value chain due to the high volumes and weights involved - cement companies need to transport cement to customers and clinker to their own plants in the region. However, the transport sector in West Africa suffers its own inefficiencies related to dysfunctional formal institutions and informal practices, to a wide range of collective action failures with public and private actors, and to unaligned policy interventions between and within countries. These dysfunctions raise costs and prices in the road, port and rail transport sectors, sometimes leading to cement shortages and in some cases social conflicts. Bilateral and regional quotas on

<sup>63</sup> See Byiers et al., 2015.

<sup>64</sup> For more on Dangote's regional strategy, see <http://dangote.com/downloads/Dangote-Cement-2013-Presentation.pdf>. In Central Africa, the strategy for Cameroon is similar to Côte d'Ivoire. The Mali strategy is similar to Chad, CAR or Gabon, where cement imports are the main focus. For more information, see <http://guardian.ng/business-services/dangote-stakes-300-million-on-new-cement-plant-in-senegal-2/>

freight distribution between landlocked, transit and/or gateway country transporters are the focus of transport disputes as the access to freight of informal or small scale operator diminishes under pressure from stronger private sector actors with an interest in professionalisation of the transport sector.<sup>65</sup>

- *Regional transport regulations* limiting axle loads may raise transport costs and thus the cost of cement and clinker, even if policy implementation will save roads from degradation in the long-run. High transport costs of trade in high volume commodities such as clinker and cement have also increased the stakes for multinational logistics and transport operators such as Bolloré Africa Logistics to engage in public private partnerships around major infrastructure development with large sunk costs in modernisation and expansion of regional rail linkages - the impact on cement markets will depend on the competition or not brought by rail investments.
- These aspects then reflect the economies of scale involved in cement production and issues of *competition and market structure*. Economies of scale favour the emergence of dominant firms, potentially offering efficiency gains but also risking monopoly prices and profits. While (regional) competition can help address this, the analysis also points to the importance of political connections between producers and home-country politicians when it comes to resolving disputes or favouring particular policy options. As such, while high prices reflect high input costs, studies also suggest a degree of collusion between producers and governments in some countries to keep prices high.
- *Energy* is a key input and a core determinant of the price of clinker and cement production in the region. As such, access to reliable energy sources is a key factor in determining the workings of the cement value chains. Recent moves to replace gas powered clinker kilns by coal to lower cement production costs show that the challenge to promote clean industrialisation are still very much present, while region-wide attempts to improve access to energy may be helpful.

This study is principally focused on political-economy aspects of the cement value chain and related sectoral inputs. But all inputs for the production, transport and use of cement entail *socio-environmental impacts*. This is also an important area for policy-makers, whether at the national, regional or international level to minimise the harm but also maximise the benefits from this key product.

## Implications

At a broader level, the paper points to the need to view cement not just as a background story to more important development policies or more ambitious narratives. Cement is at the centre of a range of development processes through production, distribution and construction, often funded or co-funded by public money. Further, the cement sector seems to be at the nexus of a range of structural and current issues for development policy in West Africa: high local production and transport costs; cheap cement imports from East Asia; a regional power or hegemon placing national over regional interests; weak competition effects to counteract inefficiencies in production; and unpredictable and politically motivated policy-making. Lessons from the cement sector may be valuable for promoting value chain development in other sectors in the region.

State-business relations are clearly instrumental in shaping public policy choices in the cement industry and in related sectors such as trade, transport, infrastructure development and environment. Informal, behind the scenes machinations remain under-researched, although the effects can be easily observed in all these interrelated sectors and subsectors.

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<sup>65</sup> See Byiers, Vanheukelom and Woolfrey, Forthcoming, The Political Economy of Transport on three West African Corridors, ECDPM Discussion Paper.

Related to this, the (lack of) competition between cement producers is a major issue in the region while competition policy appears to be extremely important in the sector, given the economies of scale involved. The World Bank (2016) proposes “competition law enforcement and advocacy for pro-competition regulatory frameworks” and raises the point that more imports ought to increase competition. However, as this study has shown, the political economy factors around national and regional institutions appear to undermine the potential for such policies to take effect. While government alone may not be able to address these challenging political economy issues, ECOWAS may be able to support third parties such as civil society organisations and coalitions of smaller firms to help alter the current incentive environments in place.

Though it is tempting to suggest that regional policies on trade liberalisation ‘simply need to be implemented’, political economy analyses point to the need to start from an understanding of why things are as they are. The observations in this paper about the range of private sector actors and their potential to drive or block reforms also suggest limited room for manoeuvre for regional policy-makers unless enough cross-country interests can be met in implementing the ECOWAS Trade Liberalisation Scheme. The ECOWAS Commission might encourage ETLs implementation through multi stakeholder dialogues, including with sector operators, to align interests around reduced transaction costs and cement trade between a certain number of countries (e.g. Togo as key exporter of clinker, Cote d’Ivoire and Ghana as key importer of clinker, and cement producer, and Mali as a cement importer).

Drivers and obstacles within the cement value chain merit attention, but so do cross sectoral dynamics that shape the incentive environment. In terms of aligning key public and private stakeholders behind politically feasible reforms for effective transport and trade facilitation, major transport corridors may act as important conduits and can be seen as a means to encourage further (public or private) investments.

Policymakers could work more closely with cement producers to ensure local economic linkages through local content policies and strategies, or building on broader corridor and territorial approaches to development to link to local content producers of inputs but also linkages in other sectors. The ECOWAS Commission and ECOWAS member states might try to leverage cement producers’ investment in transport and energy to achieve further gains in terms of regional energy and transport integration.

Relatedly, further lessons might be learned from the experiences of development partners directly and indirectly involved in the sector: the IFC has been instrumental in investing in and providing loans for cement plants in Ghana and Benin, while other donors such as AFD and GIZ are directly supporting cement production in Sub-Saharan Africa. In Ghana, IFC facilitated equity investment and a loan to Diamond Cement using clinker from a Togo based company, also partially owned by Diamond (WACEM) (IFC, 2004). The AFD also supported the expansion of Ciments du Sahel capacities in Senegal with FCFA131bn (€200 million). In East Africa, GIZ supported a multi-megawatt photovoltaic project at the Tanzania Portland Cement Company operational site to ensure better productivity by avoiding power shortage. Partners increasingly work with the private sector to encourage developmental impacts, where cement would appear to offer potential opportunities in a key sector.

The increase of cement production as witnessed during the last decade may push cement manufacturers to lower the price of their products in order to conquer the shares of saturated markets. However, such an outcome will be partly mitigated by the growing cement consumption linked to strong urbanisation dynamics.



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### **About ECDPM**

ECDPM was established in 1986 as an independent foundation to improve European cooperation with the group of African, Caribbean and Pacific countries (ACP). Its main goal today is to broker effective partnerships between the European Union and the developing world, especially Africa. ECDPM promotes inclusive forms of development and cooperates with public and private sector organisations to better manage international relations. It also supports the reform of policies and institutions in both Europe and the developing world. One of ECDPM's key strengths is its extensive network of relations in developing countries, including emerging economies. Among its partners are multilateral institutions, international centres of excellence and a broad range of state and non-state organisations.

### **Thematic priorities**

ECDPM organises its work around four themes:

- Reconciling values and interests in the external action of the EU and other international players
- Promoting economic governance and trade for inclusive and sustainable growth
- Supporting societal dynamics of change related to democracy and governance in developing countries, particularly Africa
- Addressing food security as a global public good through information and support to regional integration, markets and agriculture

### **Approach**

ECDPM is a “think and do tank”. It links policies and practice using a mix of roles and methods. ECDPM organises and facilitates policy dialogues, provides tailor-made analysis and advice, participates in South-North networks and does policy-oriented research with partners from the South.

ECDPM also assists with the implementation of policies and has a strong track record in evaluating policy impact. ECDPM's activities are largely designed to support institutions in the developing world to define their own agendas. ECDPM brings a frank and independent perspective to its activities, entering partnerships with an open mind and a clear focus on results.

For more information please visit [www.ecdpm.org](http://www.ecdpm.org)

### **ECDPM Discussion Papers**

ECDPM Discussion Papers present initial findings of work-in-progress at the Centre to facilitate meaningful and substantive exchange on key policy questions. The aim is to stimulate broader reflection and informed debate on EU external action, with a focus on relations with countries in the South.

This publication benefits from structural support by ECDPM's institutional partners: The Netherlands, Belgium, Estonia, Finland, Ireland, Luxemburg, Sweden, Switzerland, Denmark and Austria.

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The logo for ECDPM, featuring the lowercase letters 'ecdpm' in a white, bold, sans-serif font on a blue rectangular background.

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