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Combating Illicit Financial Flows from Africa's Extractive Industries and Implications for Good Governance: A Multi-country Study of Angola, the Democratic Republic of Congo and Nigeria

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Abstract

Illicit Financial Flows (IFFs) from Africa have assumed crisis proportions in recent times. Global Financial Integrity (2010) estimates IFFs from Africa between 1970 and 2008 at more than US$ 1 trillion, an amount that dwarfs the combined inflows of developmental assistance and foreign direct investments into the continent over the same period. Nigeria leads other resource-rich African economies with the outflow, put at US$ 217.7 billion, or 30.5 per cent of the total. African Economic Outlook (2012) reveals that had the flight capital from Africa been invested efficiently, its outcome could have reduced the headcount poverty ratio for the continent by an additional 4 to 6 percentage points, thus halving extreme poverty by 2015 – a critical Millennium Development Goal (MDG) that eluded the region. Development experts have expressed concern that large-scale IFFs from Africa are draining the continent of critical resources necessary to drive development agenda. Africa's extractive industries are particularly vulnerable to IFFs because of the complex and elaborate global value chains associated with the sector, which often transcend national borders. Among other things, elements of IFFs in the extractive sector include tax evasion, mis-invoicing, fraud and money laundering. The main objective of this article is to shed light on the threat posed by IFFs from Africa's extractive sector and their implications for good governance. The article employs empirical data to analyse IFFs from Africa; adopting Angola, DRC and Nigeria in a multi-country study that reveals that huge financial resources have been lost to these countries over the past several decades, threatening the ability of African countries to achieve both

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the MDGs and the Sustainable Development Goals (SDGs) that succeeded them. Therefore, the article presents a policy framework underpinned by embracing the Extractive Industries Transparency Initiative; combating corruption; promoting institutional mechanisms; and deepening poverty reduction strategies.

Résumé

Les flux financiers illicites (FFI) en provenance d'Afrique ont pris les proportions d'une crise ces derniers temps. Selon *Global Financial Integrity* (2010), entre 1970 et 2008, les flux financiers illicites provenant d'Afrique dépassent les 1.000 milliards de dollars, loin devant les flux combinés d'aide au développement et d'investissements étrangers directs sur le continent au cours de la même période. Le Nigéria est en tête des autres économies africaines riches en ressources naturelles avec une fuite de capital estimée à 217,7 milliards de dollars, soit 30,5 pour cent du total. *African Economic Outlook* (2012) révèle que si ces capitaux quittant l'Afrique avaient été investis efficacement, le résultat aurait pu réduire le taux de pauvreté du continent de 4 à 6 points de pourcentage supplémentaires, réduisant ainsi de moitié l'extrême pauvreté d'ici 2015 – un objectif du Millénaire pour le développement (OMD) crucial qui n'a pas été atteint par la région. Les experts en développement déclarent être préoccupés par les vastes FFI d'Afrique qui drainent le continent des ressources essentielles nécessaires à la réalisation de son programme de développement. Les industries extractives africaines sont particulièrement vulnérables aux FFI en raison de la complexité et des chaînes de valeur mondiales élaborées associées au secteur, qui transcendent souvent les frontières nationales. Parmi les éléments des flux financiers illicites dans le secteur extractif figurent l'évasion fiscale, les erreurs de facturation, la fraude et le blanchiment d'argent. L'objectif principal de cet article est de faire la lumière sur la menace posée par les FFI provenant du secteur extractif en Afrique et sur leurs implications pour la bonne gouvernance. L'article utilise des données empiriques pour analyser les flux financiers illicites en provenance d'Afrique, utilisant l'Angola, la RDC et le Nigéria dans une étude multi-pays révélant que d'énormes ressources financières ont été perdues pour ces pays au cours des dernières décennies, menaçant la capacité des pays africains à atteindre les objectifs du Millénaire pour le développement et les objectifs de développement durable qui ont suivi. Par conséquent, l'article présente un cadre politique basé sur l'Initiative pour la transparence des industries extractives; la lutte contre la corruption; la promotion des mécanismes institutionnels; et l'approfondissement des stratégies de réduction de la pauvreté.

Introduction

Illicit Financial Flows (IFFs) from Africa have assumed crisis proportions, particularly in recent times. This is against the backdrop of various reports revealing that the continent may have lost up to US$ 1.0 trillion to the scourge over the past five decades. The losses are more than the combined value of developmental aid and foreign direct investment (FDI) inflows to the continent on an annual basis over the same period. Development experts have blamed Africa's weak economic and poor social development outcomes, in large part, on the IFFs from the continent, which have drained several countries of critical resources that could have been used to foster sustainable development. For example, African countries were unable to achieve key elements of the Millennium Development Goals (MDGs) embraced by the international community in 2000 and aimed at halving global impoverishment from 1990 levels by 2015 (UNECA 2015). The international community has embraced another development agenda in 2015, the 2030 Sustainable Development Goals (SDGs). However, development experts are equally concerned that Africa may fail to achieve these goals, unless resources are efficiently mobilised across the continent. This includes stemming the flow of IFFs from Africa.

This article is divided into six sections. The first section examines the concept of IFFs and their impact on good governance in Africa. The second section sheds light on Africa's extractive industries and their vulnerability to IFFs; while the subsequent sections discuss multi-country studies of Angola, the Democratic Republic of Congo (DRC) and Nigeria. The final section ends with conclusion and recommendations.

IFFs: concepts and implications for good governance in Africa

IFFs have emerged in recent times as an element of globalisation. Although the literature is replete with various perspectives on IFFs, there is hardly a universally accepted definition of the concept. However, some international agencies have defined IFFs in recent times. According to Global Financial Integrity (GFI) (2017a), IFFs usually involve the transfer of financial resources earned through such illegal activities as corruption, transactions involving contraband goods, criminal activities and efforts to shelter wealth from a country's tax authorities. Thus, IFFs can be defined as cross-border movements of money that is illegally earned, transferred or utilised.

The UN Office on Drugs and Crime (UNODC) (2016) also embraces the broad definition of IFFs as all cross-border financial transfers in contravention of national or international laws. Under the UN framework,

the financial transfers may be conducted for various reasons, including, but not limited to: funds with a criminal origin, which may involve proceeds of crime (money laundering, fraud and corruption); funds with a criminal destination, including bribery, terrorist financing or conflict financing, as well as transfers to, by or for entities subject to financial sanctions under the UN Security Council Resolutions.

The Centre for Budget and Governance Accountability (CBGA) (2015) categorises four major types of IFFs:

1. *Market/regulatory abuse*: IFFs are triggered, for example, when market players try to bypass operating regulations that are aimed at preventing monopolies or when they engage in the use of anonymous shell companies in secrecy jurisdictions for inward investment, or round-tripping.
2. *Tax abuse*: Tax abuse may arise through commercial tax evasion and transfer mispricing; as well as the hiding of individuals' assets and income streams, usually in secrecy jurisdictions.
3. *Abuse of power*: IFFs also result from allocation of state resources to favoured individuals, usually within processes devoid of transparency. This may be accompanied by bribery or other forms of inducement.
4. Proceeds from crime: In cases where initial capital is legal, outflow of funds is permitted; however, proceeds from crime can only be transferred from one jurisdiction to another through illicit processes. Such funds are usually routed through low tax jurisdictions or strong secrecy regimes, making them hard to trace.

At this point, it is appropriate to distinguish between capital flight and illicit financial flows. This is against the context where both concepts are often used interchangeably in the literature. While capital flight is rather hard to define precisely, it is often regarded as outflow of both licit and illicit capital from an economy. Thus, there is an overlap in the structure of both concepts (Kapoor 2007; Kar 2016).

The relationship between capital flight and illicit financial flows is captured by Mevel, Ofa and Karingi (2013) who described capital flight as a concept divisible into two: Illicit Financial Flows (IFFs) and Licit Financial Flows (LFFs); while the latter stands alone, the former is further divisible into three, as proceeds from corruption, criminal activities and tax evasion, as illustrated in Figure 1.

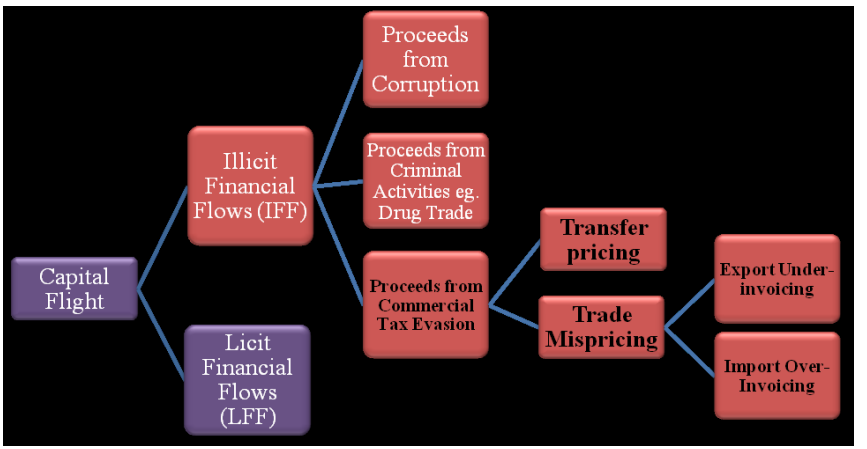

Figure 1: Elements of capital flight
Source: Mevel, Ofa and Karingi (2013)

Policymakers and development agencies have expressed concerns about the scale and impact of IFFs, particularly in recent times (LGSLfD 2008; Herkenrath 2014; Kar 2016). Complicating matters for many developing countries in search of IFFs is the existence of tax havens, where corporate and personal wealth gains are transferred illicitly and placed beyond the reach of regulatory authorities.

Apart from economic consequences, the social impact of IFFs can be sobering. African Economic Outlook (AfDB 2012) reveals the damaging impact of capital flight on Africa's impoverishment. It further reveals that if the flight capital from Africa had been invested efficiently, its outcome could have reduced the headcount poverty ratio for the continent by an additional 4 to 6 percentage points, thus halving extreme poverty by 2015 – a critical MDG that eluded the region (AfDB 2012).

IFFs pose a serious threat to the progress being recorded in Africa to achieve the SDGs, as well as Agenda 2063. The continent is currently involved in several initiatives to foster regional integration through increased intra-Africa trade, a process that requires open borders and efficient financial services (Africa Union 2015). The continent is also hugely endowed with natural resources and features high levels of fragility, rendering it susceptible to criminal enterprises. Indications are that the region's accelerated economic growth over most of the past decade is accompanied by an upturn in IFFs (Boyce and Ndikumana 2012). The Global Initiative against Transnational Organized Crime (2017) elaborates a framework for assessing harm to development associated with illicit and criminal activities, as well as similar

financial flows. It reveals the physical, societal, economic, environmental and structural/governance dimensions of the Development Harm Framework, as depicted in Figure 2.

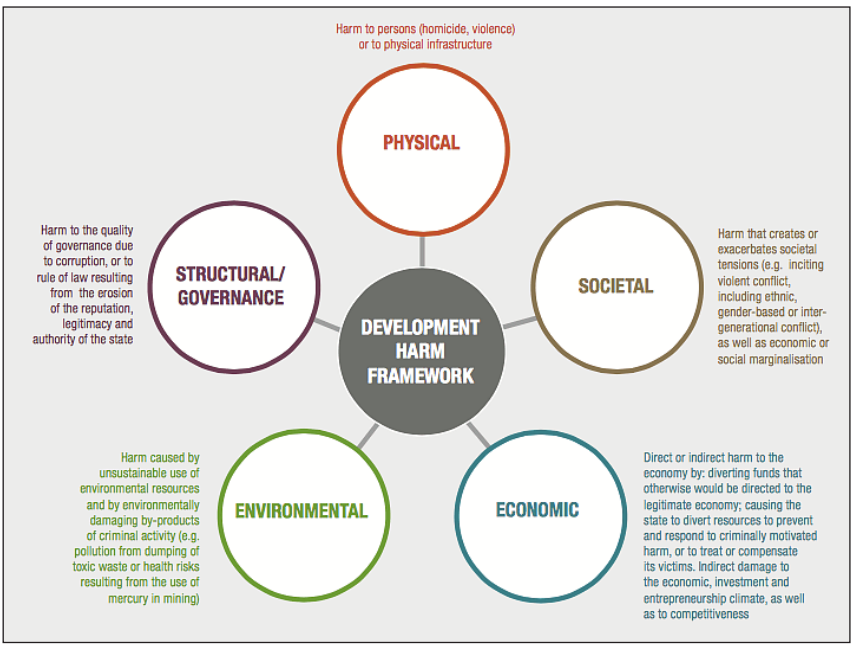

Figure 2: The Multi-dimensional context of the Development Harm Framework
Source: Global Initiative against Transnational Organized Crime (2017).

IFFs in Africa: an overview

IFFs are hardly a new phenomenon in Africa. The continent has witnessed a string of autocratic rulers, who have plundered their countries' resources and funnelled funds overseas, often beyond the reach of national authorities (Sahadath 2014). Indications are that Africa is losing more than US$ 50 billion every year in IFFs, fuelled by individuals and corporate bodies engaged in fraudulent schemes, aimed at avoiding tax obligations, or hiding proceeds of crime (Anderson 2015). Indeed, various global reports indicate that Africa may have lost over US$ 1 trillion to IFFs over the past 50 years (Global Financial Integrity 2010).

Disturbed by this development, the High Level Panel (HLP) on IFFs from Africa was inaugurated by the UN Economic Commission for Africa (UNECA) in February 2012 in Johannesburg. Among other things, the HLP was mandated to:

1. Determine the nature and patterns of illicit financial outflows.
2. Establish the level of illicit financial outflows from Africa.
3. Assess the complex and long-term implications of IFFs on development.
4. Sensitise African governments, citizens and international development partners to the scale and effect of financial outflows on development aid.
5. Mobilise support for putting rules and regulations in place at all levels to tackle illicit financial outflows from Africa (UNECA 2012a).

In a detailed report on IFFs from Africa, Global Financial Integrity (2010) estimated that Africa, over a period of 39 years (1970–2008), lost an estimated US$ 854 billion to illicit financial outflows across the continent. These resources, according to the report, are sufficient to offset the region's total outstanding indebtedness, estimated at US$ 250 billion (at end-December 2008), leaving the sum of US$ 600 billion, which could foster economic growth and tackle chronic poverty in the region. While the report affirmed that the bulk of illicit financial outflow during the period under review was from sub-Saharan Africa, it further reveals significant disparities in regional patterns. Table 1 shows the profile of IFFs from Africa between 1970 and 2008.

Table 1: Africa: IFFs, 1970–2008

Africa	**57,291**	**203,859**	**155,740**	**437,171**	**854,061**
North Africa	19,161	72,020	59,813	78,742	229,737
Sub-Saharan	38,130	131,839	95,927	358,429	624,324
Horn of Africa	2,354	14,131	5,108	15,603	37,197
Great Lakes	6,925	16,079	4,978	10,285	38,267
Southern	5,894	20,581	31,447	116,828	174,751
West and Central	22,956	81,047	54,394	215,712	374,109
Fuel-exporters	20,105	67,685	48,157	218,970	354,917
Nonfuel-exporters	7,867	26,517	22,375	23,342	80,102
	Average IFFs				
Group	1970s	1980s	1990s	2000-2008	1970-2008
Africa	**7,299**	**21,678**	**17,813**	**50,328**	**29,021**
North Africa	3,097	7,754	6,316	9,166	6,866
Sub-Saharan	4,202	13,924	11,497	41,162	22,156
Horn of Africa	249	1,421	715	1,949	1,183
Great Lakes	745	1,778	580	1,286	1,142
Southern	811	2,412	4,659	13,388	9,635
West and Central	2,397	8,313	5,544	24,538	10,196
Fuel-exporters	2,239	6,922	5,105	24,806	9,878
Nonfuel-exporters	1,017	2,729	2,433	2,787	2,502

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Group	Rates of Change (real 2008 CPI deflated)				
	1975-1979	1980s	1990s	2000-2008	1970-2008
Africa	**18.9**	**-2.1**	**-4.8**	**24.6**	**12.1**
North Africa	14.0	-11.5	0.5	6.0	6.5
Sub-Saharan	n.a.	1.3	-7.0	30.1	15.1
Horn of Africa	n.a.	7.3	-15.5	33.5	20.0
Great Lakes	13.2	-12.7	-17.7	35.0	13.5
Southern	n.a.	13.5	7.3	21.5	16.7
West and Central	21.5	0.0	-11.4	36.0	14.5
Fuel-exporters	n.a.	2.2	-15.6	42.6	21.8
Nonfuel-exporters	n.a.	11.3	-1.6	11.0	13.6

Source: Global Financial Integrity (2010).

Table 1 reveals that Africa lost about US$ 29 billion annually over the period 1970–2008, with sub-Saharan Africa accounting for US$ 22 billion. Africa's fuel exporters, on average, lost about US$ 10 billion annually, far outstripping non-fuel, primary commodity exporters, which lost US$ 2.5 billion.

Global Financial Integrity's report on IFFs from Africa was complemented by another report by the HLP appointed by UNECA in 2012. The latter's report affirmed that IFFs from Africa ranged from US$ 30 billion to US$ 60 billion per annum and had been steadily increasing since 2000. The report also shows that African countries lost up to US$ 407 billion between 2001 and 2010 to trade mispricing alone (UNECA 2012b).

In one of the latest reports on IFFs from Africa, Global Financial Integrity, as part of its assessment of IFFs from developing countries, estimated the average annual IFFs from sub-Saharan Africa, which ranged from US$ 36 billion and 69 billion in 2004–14, as illustrated in Table 2.

Table 2: Estimated IFFs from sub-Saharan Africa, 2005–14 (per cent of total trade)

												2014	
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ave rage, 2005–14	Billion US$	Average annual percentage change since 2005
Low estimated	9.9	9.6	9.6	10.1	13.8	6.4	4.6	4.4	7.0	5.3	7.5	36	1.8
High estimated	12.6	13.8	14.3	14.5	18.7	8.9	8.4	8.6	11.3	9.9	11.6	69	6.3
Mid-point	11.2	11.7	12.0	12.3	16.3	7.6	6.5	6.5	9.2	7.6	9.5	52	4.5

Source: GFI (2017b) staff estimates, using data from IMF.

Table 2 shows that IFFs from sub-Saharan Africa, as a percentage of the region's trade, range from 5.3 to 9.5 per cent, and grew 1.8 to 6.3 per cent a year, with a total value ranging from US$ 36 to US$ 69 billion by 2014.

In a report for Africa Renewal, Tafirenyika (2013) identified factors driving IFFs from sub-Saharan Africa. These include mispricing trade deals, offshore tax shelters, as well as criminal enterprise. According to the report, while trade mispricing accounts for, on average, US$ 38.4 billion; other illicit outflows account for US$ 25 billion for the period 2008–10 across the region. The trend compares to financial inflows, estimated at US$ 29.5 billion into the region from OECD/DAC-member countries' development aid and US$ 32.7 billion in FDI, as illustrated in Figure 3.

Africa's extractive industries and IFFs

Profiling Africa's extractive industries

Africa's mining and energy industries feature considerable endowment in natural resources, ranking the continent among those with the world's richest natural resources. Africa's mineral sector presents a paradox: while the continent is strongly endowed with mineral resources, this is yet to translate into economic prosperity for its increasing population (McKinsey & Co 2010). The continent is endowed with the bulk of the world's known reserves of platinum, chromium and diamonds, as well as a considerable share of global deposits of bauxite, cobalt, gold, phosphate and uranium. Mineral resources are distributed across the continent and are prevalent in high levels, particularly in Southern and West Africa, ranking the continent

among the world's top ten sources for at least one mineral resource. Indeed, 11 African countries rank alongside the top 10 global resource countries in at least one major mineral, as illustrated in Figure 4.

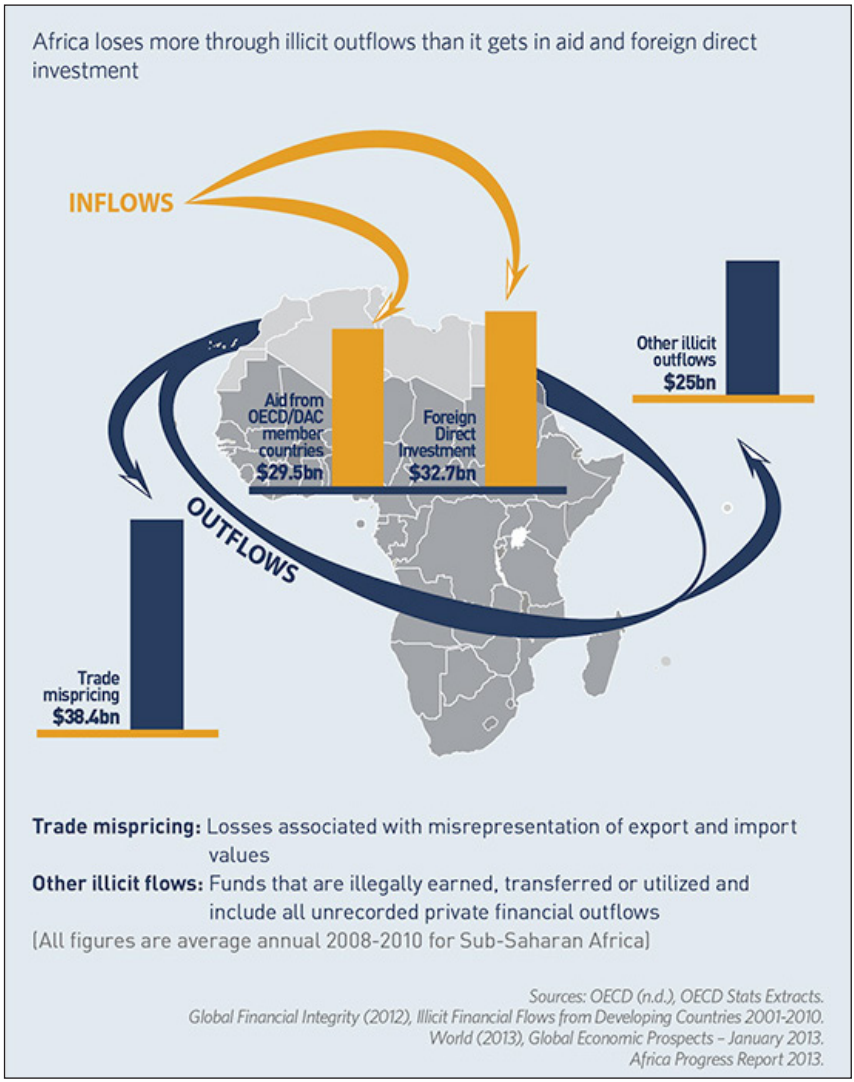
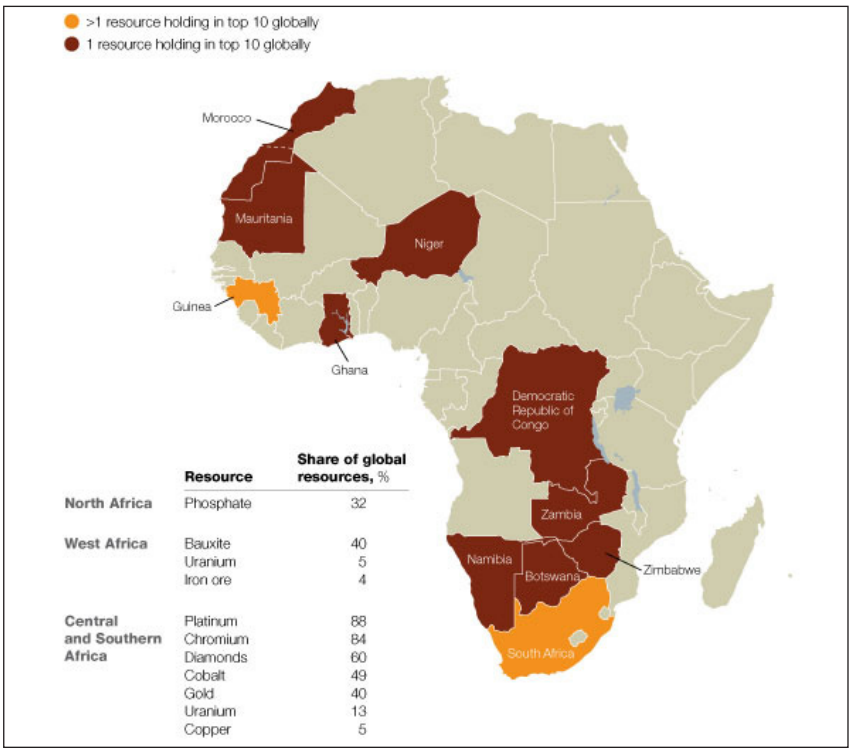


Figure 3: Africa's illicit outflows



	Resource	Share of global resources, %
North Africa	Phosphate	32
West Africa	Bauxite	40
	Uranium	5
	Iron ore	4
Central and Southern Africa	Platinum	88
	Chromium	84
	Diamonds	60
	Cobalt	49
	Gold	40
	Uranium	13
	Copper	5

Figure 4: African countries with top rankings in global reserves of minerals
Source: McKinsey & Co (2010)

The African Mining Vision affirms Africa's rich endowment in mineral resources and the continent as the top producer of several mineral commodities in the world (Africa Union 2009). While Africa lacks a systematic geological mapping of its mineral wealth, indications are that the continent holds huge reserves of several of the world's mineral commodities. Table 3 reveals some of Africa's major mineral resources.

Complementing Africa's mineral resources is the rising profile of the continent's hydrocarbon industry: crude oil, natural gas, coal, etc. By 2015, 13 per cent of global crude oil production emerged from Africa, in contrast to 9 per cent in 1998, representing a compound annual growth rate of 5 per cent. With 19 African countries becoming significant oil producers, the sector has evolved into a major earner of government revenue and foreign exchange reserves. Major oil producers in the region include Nigeria, Angola, Equatorial Guinea, Gabon, South Sudan, Algeria and Libya (U.S. Geological Survey 2012).

Table 3: Profile of some Africa's major mineral resources in the world (2005)

Mineral	Production %	Rank	Reserves %	Rank
Platinum Group Minerals	54	1	60+	1
Phosphate	27	1	66	1
Gold	20	1	42	1
Chromium	40	1	44	1
Manganese	28	2	82	1
Vanadium	51	1	95	1
Cobalt	18	1	55+	1
Diamond	78	1	88	1
Aluminum	4	7	45	1

Source: Africa Mining Vision (African Union 2009)

Exploring IFFs from Africa's extractive industries and consequences for good governance

Extractive industries are particularly vulnerable to illicit financial outflows. In Africa, several mineral-rich economies are prone to IFFs, which undermine not only economic growth, but also social development. Several factors have been identified as reasons for the vulnerability of the extractive sector to IFFs (Gilles 2010). Extractive sectors are usually accompanied by discretionary powers, which often facilitate IFFs. They are also critical for government revenues and foreign exchange reserves. Consequently, the governance framework for the extractive sector is subject to control at the highest levels of governments, often at the presidential level, and by a small circle of technocrats (Chr. Michelsen Institute 2011).

Different sub-sectors of the extractive industries are prone to peculiar risks of IFFs from the industry. Le Billion (2011), in a study of IFFs from the extractive sector, elaborated the level of risks associated with IFFs. This is set against the backdrop of the nature of resources, as well as modes of production, illustrated in Table 4.

Table 4: IFF risk levels for different extractive sectors

Sub-sector	Corruption	Illegal exploitation	Tax evasion
Oil	High, due to confidentiality and concentration of decision making and monitoring.	High, due to biased metering, siphoning and bunkering.	Medium, due to homogeneity of international prices according to oil quality.
Gas	Medium, due to limited market options.	Low, since gas theft is very difficult, except at transit hubs between markets.	High, as gas prices vary widely because of fragmented markets.
Industrial mining	High, due to confidentiality and concentration of decision-making and monitoring.	Low, except in measurement and ore grading	High, due to transfer mispricing.
Artisanal mining	Medium, for grand corruption but high for petty corruption, due to diffuse resource flows, except through official export channels.	High, due to accessibility of deposits and in monitoring	High, due to smuggling.

Source: Le Billion (2011)

Africa's extractive industries have been undermined by a severe case of IFFs. The sector, which features high level of complexity and revenue-generating potential, cross-border supply chains, as well as technology-driven specialisation, is particularly attractive to both domestic and foreign investors. This makes it susceptible to various forms of IFFs. Mis-invoicing has been identified as a major driver of IFFs out of Africa's extractive industries. Various reports have shown the phenomenon as a major conduit for IFFs out of Africa. Yeboah (2017), for example, illustrated recent trends in Nigeria and Zambia. In the study, Nigeria featured under-invoicing of crude oil exports to the United States (US), between 1996 and 2014, to the tune of US$ 69.7 billion, or 24 per cent of the country's crude oil exports to the US during the period. Also, the nation witnessed oil importation mis-invoicing, to the tune of US$ 45.6 billion, over the same period. According to the author, Zambia, over the same period, exported US$ 28.9 billion worth of copper to Switzerland, which was not reflected in the latter's import data.

Indications are that in South Africa, under-invoicing of diamond exports, primarily by De Beers, appears to have down-played the market value of rough diamond exports, to the tune of US$ 3 billion, from 2005 to 2012. The undervalued gems are consequently sold at market prices around the world (AMDC 2015). Mis-invoicing has also emerged as a popular instrument fuelling IFFs in Tanzania's extractive industries. Available data reveal that more than US$ 8 billion in domestic capital has been lost through IFFs out of the economy from 2002 to 2011, while government authorities have missed, on average, the sum of US$ 248 million annually from trade-based tax evasion. The DRC is acknowledged to have some of the highest incidents of illegal mining in Africa (Melik 2008). A considerable proportion of illegal mining in the conflict-prone nation is aimed at the export market. Consequently, the Kimberly Process Certification System was established to deter market access to 'conflict diamonds'. Despite this development, about 30 to 50 per cent of the value of rough diamonds was reported to be exported in recent times, without proper declaration or valuation. Also, about US$ 23.7 million may have been stolen from a US$ 100 million signature bonus for a copper mining report, according to the AMDC (2015) report.

Africa's oil and gas sector accounted for nearly half of IFFs from Africa between 1970 and 1980 (Baker and Kodi 2010). Nigeria, Sudan, Angola and the Republic of Congo were dominant sources of IFF outflows from Africa between 1970 and 2008 (Kar and Cartwright-Smith 2010). A major reason for this development is weak institutional and governance mechanisms prevalent in the petroleum sector of the countries concerned. A high level of corruption is the bane of Africa's oil industry, often characterised by lack of transparency and accountability (Njie 2015).

The crisis of IFFs from Africa's extractive sector is particularly critical for the region's governance agenda, given the pivotal role of the sector in Africa's resource-rich economies. Therefore, the consequences of IFFs from the sector are grave and pose severe challenges to both economic and social development outcomes for the region. Africa has failed to achieve critical elements of the MDGs in a development largely attributable to IFFs from Africa, a process which denies the region the vast resources necessary to drive its development agenda (UNECA 2015).

Angola: illicit financial flows and the extractive sector

An overview of the extractive sector in Angola

Angola's economy is predominantly driven by the extractive sector, comprising oil and gas, as well as the mining industry. The extractive sector accounts for 50 per cent of GDP, more than 70 per cent of government revenue and more than 95 per cent of the country's exports (Forbes 2017).

Angola is located in Southern Africa, with a total landmass measuring 1,246,700 square-kilometres and is the seventh largest country on the continent (Focus Africa 2017a). Figure 5 shows Angola in regional context.

Figure 5: Angola in regional context
Source: Encyclopaedia Britannica (2012a)

The mineral sector, particularly the petroleum industry, has played a vital role in fostering the nation's economic growth and development. Angola accounted for about 2.1 per cent of world petroleum output in 2013 and ranked as the second largest crude oil producer in Africa, after Nigeria (EIA 2016). According to the U.S. Geological Survey (2014), petroleum accounted for about 97 per cent of the country's total exports in 2013, and 42 per cent of GDP. In addition, the nation also produced about 7 per cent of the world's rough diamond output, which contributed US$ 1.3 billion to government revenue. The U.S. Geological Survey report also listed other mineral commodities produced in Angola, including cement, fuller's earth, granite, gypsum, limestone, marble, quartz, salt sand, silica sand and crushed stone. Table 5 shows the profile of Angola's mineral resources produced between 2009 and 2013.

Table 5: Angola: production of mineral commodities[1] (metric tons unless otherwise specified), 2009–13

Commodities	2009[e]	2010[e]	2011	2012	2013
Industrial minerals					
Cement:					0
Hydraulic thousand metric tons	1,800	1,500	1,500	1,600[e]	1,700[e]
Clinker do	500	500	500	500[e]	500[e]
Diamond[3,4] thousand carats	9,238	8,362	8,329	8,331	9,360
Fuller's earth	-	-	-	35,492	98,084
Granite cubic metres	50,000	50,000	60,000	51,267[e]	108,386
Gravel thousand metric tons	-	-	-	533	938
Gypsum	120,000	200,000	200,000	121,981	189,242
Limestone					
For cement manufacturing					
thousand metric tons	-	-	-	-	882
For construction industry do	-	-	-	1,100	1,442
	-	-	-	13,900	1,800
Marble	-	-	-	12,400	9,500
Quartz	35,000	50,000	40,000	40,000	40,000[e]
Salt					
Sand					
For construction industry					
thousand metric tons	-	-	-	743	881
Silica sand for glass manufacturing	-	-	-	-	50,100
Stone, crushed thousand metric tons	-	-	-	1,770	4,266
Mineral fuel & related materials					
Petroleum:					
Crude[4,5] thousand 42 – barrels	658,460	679,995	629,990	651,160	657,365
gallon	13,700	15,000	15,180[4]	21,900	22,000[e]
Refinery products[6] do					

Notes: [e] – estimated; estimates are rounded to no more than three digits.
r – revised, do – ditto, zero

Source: U.S. Geological Survey (2014)

Angola's diamond industry has expanded rapidly in recent years, becoming the world's fourth largest by value and the sixth by volume, with a production average estimated at 8.8 million carats in 2015 (AfDB 2017). Angola is also the fourth highest producer in Africa. However, declining international market prices are undermining new investments and output growth in the Catoca, Cuango and Chitotolo mines, which account for 90 per cent of

the nation's total diamond output. Consequently, 2017 production output is projected to decline to 0.05, compared to the 4.9 per cent target in the nation's National Development Plan 2013–17, according to the African Economic Outlook report (AfDB 2017).

Angola's petroleum industry has grown steadily in recent times, with the nation becoming a member of the Organization of Petroleum Exporting Countries (OPEC) in 2006 and assigned a production quota of 1.9 million barrels of crude oil per day (Focus Africa 2017a). The nation's rise in crude oil output 2002–08 was driven by the streaming of several deepwater fields. In 2015, the nation produced about 1.8 million barrels of crude oil per day, an average increase of 15 per cent, 2002–08 (EIA 2016).

Angola's oil production peaked in 2008, with nearly 2 million barrels per day, of which 1.9 million barrels were crude oil and the rest other liquids. However, the nation's production profile has been stagnant in recent years, largely owing to fluctuating demand and price decline. Production has averaged close to 1.8 million barrels 2011–15, as illustrated in Figure 6.

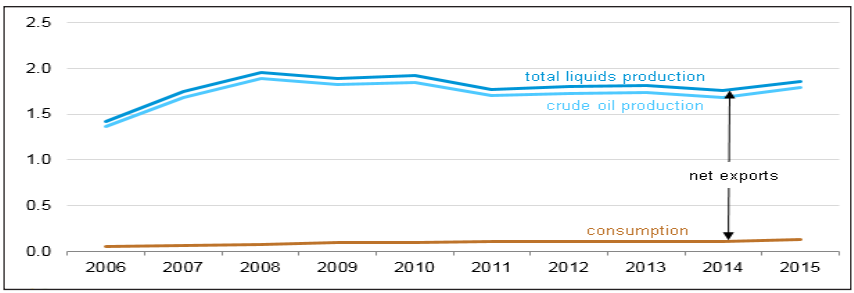


Figure 6: Angola's petroleum and other liquids – production and consumption, 2006–15

Source: EIA (2016)

Exploring IFFs from Angola's extractive sector and consequences for good governance

Angola is acknowledged to have huge endowments in natural resources, accompanied by weak resource governance structures. The nation relies on a centrally-controlled revenue stream, driven in large part by the extractive sector. Its rulers are renowned for self-enrichment and massive corruption that define the extractive sector (Human Rights Watch 2010). In an attestation to the lack of transparency in Angola's extractive sector, the IMF, in 2012, reported that US$ 32 billion was missing and unaccounted for over the period 2007–10 from the state-owned energy entity, Sonangol (GAN Integrity 2015). Available records indicate that between 1997 and

2002, unaccounted funds from Angola's oil industry amounted to US$ 4.22 billion (Standing 2007). Corruption is fuelling Angola's IFFs through executive actions taken with impunity. For example, the daughter of Angola's president was appointed the Chairman of the Board of Directors of the state-owned oil company, Sonangol in 2016, an act of nepotism deemed unconstitutional by anti-corruption activists.

The large-scale IFFs from Angola's extractive sector hold grave consequences for good governance. In attestation to the lack of good governance, the UN Human Development Index (HDI) (2016) scored Angola with 0.533 out of a maximum score of 1.0, but this was discounted to 0.336 when inequality was factored into the outcome. This places the country in a low human development category, ranking her 150 out of 188 countries and territories.

Figure 7: DRC in regional context
Source: Encyclopaedia Britannica (2011)

DRC: IFFs and the extractive sector

An overview of the extractive sector

The DRC is the third largest country in Africa, measuring approximately 2,344,858 square-kilometres located in Central Africa (Encyclopaedia Britannica 2017). Figure 7 shows the location of DRC in regional context.

The mining sector plays a pivotal role in DRC's economic growth. Oxford Policy Management (2013) reveals that the sector accounted for 12 per cent of annual GDP. Apart from royalties, taxes and dividends, a high proportion of income from the mining sector remains in the domestic economy in the form of salaries, payment to contractors and social investments. The sector also accounted for a sixth of all formal employment, or 50,000 jobs and attracts up to 80 per cent of FDI. The country's FDI increased more than six-fold during the period 2005–10, estimated at US$ 7 billion a year over same period.

DRC is endowed with a vast stock of solid minerals. The nation is a major producer of cobalt, copper, diamonds and coltan, as well as tin (Kuwonu 2016). In 2013, the nation's share of the world's mined cobalt production was estimated at 48 per cent; tantalum at 17 per cent; diamonds at 12 per cent; copper at 5 per cent; refined cobalt at nearly 4 per cent; and tin at 1 per cent. It also accounted for 47 per cent of global cobalt reserves (U.S. Geological Survey 2015). The mining sector further accounted for an estimated 20.9 per cent of GDP in 2013, with the copper, cobalt, petroleum, quarrying, diamond and other mineral sub-sectors accounting for 13.5, 5.0, 3.1, 2.9, 0.8 and 0.7 per cent of GDP respectively.

The U.S. Geological Survey report also affirmed that between 1.8 and 2.0 million artisanal miners were employed in the DRC in 2012, including between 800,000 and 1 million miners in diamond mining and between 100,000 and 130,000 miners in gold mining in the Ituri Interim Administration of Orientale Province. The DRC is endowed with some of the largest deposits of non-ferrous metals in the world, comprising about 3 per cent of global copper reserves, 45 per cent of cobalt and 25 per cent of diamond. This is in addition to reserves of such precious metals as gold and tantalum. The DRC is also the largest reserves holder of cobalt and the tenth largest holder of gold reserves in the world. (KPMG 2014). Table 6 shows the profile of DRC's production of mineral resources in 2009–13.

Table 6: DRC: production of mineral commodities[7] (metric tons unless otherwise specified), 2009–13

Commodities[8]	2009	2010	2011	2012	2013
Metal					
Cobalt:					
Mine output, Co content[e,9]	40,000	60,000	63,000[f]	52,000[f]	58,000
Metal, co content[10]	2,950[f]	4,222	3,103	3,021	3,007
Copper:					
Mine output, Cu content[e]	330,000	420,000	530,000	660,000	970,000
Refined	166,915	260,759	362,000	473,000[f]	684,653
Germanium, mine output, Gecontent	19,000	17,000	21,000	15,000[f]	18,000
kilograms	11,000	12,000	12,000	14,000	17,000
Gold, mine output, Aucontent do					
Niobium (columbium) & tantalum:					
Columbite-tantalite concentrate:	464[f]	440[f]	536[f]	586[f]	500
Gross weight[11]	80f	80[f]	90[f]	100[f]	90
Nb content[12]	100[f]	100[f]	120[f]	130[f]	110
Ta content[12]					
Cassitente concentrate:	15,512[f]	13,415[f]	9,267[f]	8,018[f]	6,231
Gross weight[11]	150	130	90	80	60
Nb content[12]	220	190	140	120	90
Ta content[12]	-	6,446	10,080	12,342	60,431
Silver, mine output, Ag. Content kilograms	NA[f]	NA[f]	NA[f]	NA[f]	NA[f]
Steel, crude	15,512[f]	13,415[f]	9,267[f]	8,018[f]	6,231
Tin, mine output, Cassitente concentrates	9,300[f]	8,000[f]	5,600[f]	4,800[f]	3,700
Gross weight[11]	365[f]	45[f]	87[f]	71[f]	57
Sn content[12]	170[f]	21[f]	41[f]	35[f]	27
Tungsten, mine output concentrates	12,843[f]	9,223[f]	12,342[f]	10,571[f]	12,566
Gross weight[11]					
W content[12]					
Zinc, mine output, Zu content					

Industrial minerals					
Cement, hydraulic	460,344	489,745	437,761	413,181[f]	446,610
Diamond[12]6					
Artisanal thousand carats	21,298[f]	20,166[f]	19,249[f]	21,542[f]	17,799
Large-scale do	-[f]	-	244[f]	569[f]	246
Total do	21,298[f]	20,166[f]	19,493[f]	22,093[f]	18,045
Stone, crushed					
Sulfuric acid[12]6	253,800	279,100	307,000	337,800[f]	340,000[e]
Mineral fuels & related minerals	550,000	850,000	1,200,000	1,600,000	2,300,000
Coal, bitumen aus	-	-[e]	1,469	3,870	4,000e
Petroleum, crude thousand 42-gallon barrels	9,382	8,628	8,558	8,545	8,351

Notes: [e] – estimated; estimates are rounded to no more than three digits.
R: revised
do: ditto
NA: not available
Source: U.S. Geological Survey (2015).

The DRC is also a minor holder of petroleum resources. Production from the upstream oil industry is mainly based off-shore, with an estimated 25,000 barrels of crude oil per day (Focus Africa 2017b).

Exploring IFFs from DRC's extractive sector and consequences for national development

The DRC is prone to conflict. Its post-conflict economy has performed well over the last decade, recording some of the highest economic growth rates in Africa (African Economic Outlook, 2016). The extractive sector is the major driver of the nation's economy. However, the sector is seriously undermined by sporadic violence in parts of the country, particularly in the Eastern Province. The Sentry (2015) reveals that artisanal gold mining is particularly prone to violence. For example, a 2014 survey of 1,088 mining sites in the DRC's eastern region estimated that about 221,500 artisanal miners were engaged there, with about 80 per cent prospecting for gold. Estimates of production in the gold mines of the eastern region amounted to roughly 12 tons per year; however, official data only indicated

200 kilograms exported for 2013. Various reports estimate that about 98 per cent of artisanal gold was smuggled out of the country and remained unaccounted for.

The Sentry report also reveals that a study of DRC's production, revenue and payments in the extractive sector 2011–13 shows discrepancies put at US$ 300 million that was not transferred from the state-owned mining entity to the public treasury. The trend reveals an overall estimated sum of US$ 4 billion in annual losses to the state, fuelled by corruption and fraud.

Tax mismanagement is also another serious source of IFFs from DRC's extractive sector. Global Witness (2015) reveals that at least the sum of US$ 750 million in mining revenues paid by Gecamines was unaccounted for in 2013–15. The disturbing trend is part of a widespread pattern of corruption in the public sector, perpetrated by the elite against the interest of the people. Global Witness also reported the prevalence of secret mining deals in DRC in recent times, estimated at US$ 1.36 million in losses to the nation, an amount equivalent to twice the nation's annual budget for health and education combined.

Lack of transparency and accountability pervades the DRC's extractive sector, prompting the IMF to completely withdraw a loan of US$ 532 million in 2013, as the Congolese government refused to disclose circumstances surrounding the dubious sale of 25 per cent of the state-owned copper project, according to GAN Integrity (2016).

The DRC features large-scale IFFs from the nation's extractive sector, with grave consequences for good governance. The UN's HDI (2016) reveals DRC's poor performance at 0.435, putting her in a low human development category. The nation ranks 176 out of 188 countries and territories on the HDI. The country's Gross National Income decreased by 46 per cent between 1990 and 2015 (UNDP 2016a), in a development partly attributable to large-scale IFFs from the nation.

Nigeria: IFFS and the extractive sector

Overview of the extractive sector

Nigeria is a large country located in West Africa, measuring 923,768 square-kilometres (Nations Encyclopedia 2017). Figure 8 shows Nigeria in regional context.

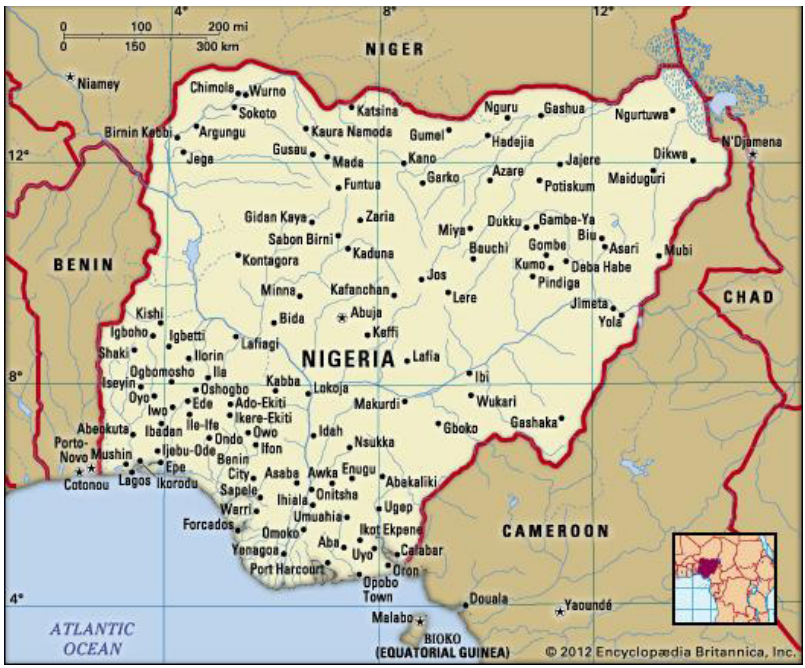


Figure 8: Nigeria in regional context
Source: Encyclopaedia Britannica (2012b)

The extractive sector is crucial to fostering economic growth and development in the country. The petroleum industry is particularly instrumental to the nation's economy, accounting for more than 30 per cent of annual GDP; 70 per cent of government revenue, and over 90 per cent of foreign exchange earnings (AfDB 2017).

Nigeria is the tenth largest crude oil reserves holder in the world, with an estimated 37.5 billion barrels. Nigeria is also the sixth largest exporter of crude oil and Africa's largest producer (MBendi 2017). The nation's daily production peaked in 2005 with 2.44 million barrels per day. However, production began to dwindle shortly thereafter, fuelled by militant attacks on oil infrastructure in the nation's Niger Delta region. With the implementation of the presidential amnesty for militants in exchange for rehabilitation, attacks on the oil infrastructure reduced considerably, allowing production to surge. In 2015, petroleum and other liquids production were estimated at 2.3 million barrels per day, of which 1.9 million barrels were crude oil and the remainder condensate. The nation's crude oil production is being sustained by off-shore production fields, many with world class reserves holdings (EIA 2016).

Complementing Nigeria's crude oil and gas resources are solid minerals, which abound in large quantity across the nation (Okoli and Uhembe 2015). However, due to low exploitation of the industry, it accounts for a paltry 0.3 per cent of national employment and 0.02 per cent of exports. Over 40 various kinds of mineral resources have been identified across Nigeria, including gold, barite, bentonite, limestone, coal, bitumen, iron ore, tantalite/columbite, lead/zinc, barites, gemstones, granites, marble, gypsum, talc, iron, ore, lithium and silver (KPMG 2017). The nation was a major exporter of tin, columbite and coal from pre-colonial times into the 1960s and early 1970s; however, with the emergence of crude oil in the early 1970s, the mining industry lost its momentum to the petroleum sector, which began to assert its dominance on the Nigerian economy. Table 7 shows the production trends of Nigeria's mineral commodities 2010–14.

Table 7: Nigeria: production of mineral commodities[1] (Metric tons unless otherwise specified), 2010–14

Commodities[2]	2010	2011	2012	2013	2014
Metal					
Aluminum	21,200	17,600	26,000	2,000[3]	-[3]
Gold[e]	3,718[3]	4,000	4,500[f]	5,200[f]	6,000
Iron ore, gross weight thousand metric tons	63	70	-[f,e]	-[f]	-[3]
kilograms					
Lead:	3,300	9,100	11,300	11,500[3]	13,000
Mined Pb content	11,000	9,000	9,000	10,000	12,000
Refined, secondary	NA[f]	NA[f]	NA[f]	NA[f]	NA[f]
Lead – Zinc ore					
Niobium (Columbium and tantalum	281	311	310	300	300
concentrate[e]	20	22	22	21	21
Gross weight	58	64	63	60	60
Niobium (Colombium content)	100,000	100,000	400,000	450,000[f]	520,000
Tantalum content					
Steel	229[f]	400[f]	500[f]	580[f]	670
Tin, mine output cassiterite concentrate:	160[f]	270[f]	270[f]	390[f]	460
Gross weight					
Sn content[e]	-[3]	85[3]	-	-	-
Tungsten, mine output wolframite	-[3]	49	-	-	-
concentrate	200	3,100	13,800	7,000	8,200
Gross weight	1,685	3,630	6,300[e]	7,300	8,500
W content					
Zinc, mined Zn content					
Zir con					
Industrial minerals					
Industrial minerals					
Barite[4]	13,249	4,988	16,174[f]	19,000[f]	22,000
Cement, hydraulic thousand metric tons	10,000	12,000[f]	16,000[f]	20,000[f]	19,800

Clays:					
Kaolin	-	27,609	15,420	18,000	21,000
other[e] thousand metric tons	850	950	1,065[3]	1,200[f]	1,400
Felds par	1,716[f]	-[f]	9,080[f]	11,000[f]	12,000
Nitrogen, N content:					
Ammonia	95,000	200,000[f]	280,000[f]	300,000[f]	300,000
Urea	120,000[f]	330,000[f]	470,000[f]	500,000[f]	500,000
Sand and stone:					
Laterite thousand metric tons	2,999[f]	2,305[f]	3,661[f]	4,300[f]	5,000
Limestone do	13,595[f]	15,225[f]	18,110[f]	21,000[f]	24,000
Sand, construction do	1,428[f]	1,625[f]	2,109[f]	2,500[f]	2,900
Sand, industrial (silica) do	33[f]	36[f]	40[f]	47[f]	54
Stone, crushed (aggregate) do					
Granite do	6,857[f]	7,588[f]	11,757[f]	14,000[f]	16,000
Marble do	9,356	10,185	11,000[f,e]	13,000[f]	15,000
Other do	3,673	4,074	4,600[f,e]	5,300[e]	6,100
Shale do	174[f]	491[f]	567[f]	660[f]	760
Sulfur[e] do	1,300	1,500	1,900	1,900[f]	850
Toumaline kilograms	800	100	110	130	150
Topaz do	1,000	1,000	1,100[f]	1,300[f]	1,500
Mineral fuels and related materials					
Coal, bituminous	118,894[f]	133,812[f]	71,942[f]	86,000[f]	100,000
Natural gas:					
Gross million cubic meters	67,758	67,972	73,063	65,869[3]	71,479[3]
Marketed[5] do	45,903	38,343	37,946	31,231[3]	37,716[3]
Petroleum					
Crude and condensate thousand 42 – gallon barrels	869,043	866,245	852,777	800,488[3]	798,5423
Natural gas liquids:	4,991	4,500[e]	3,803	4,533[3]	5,5353
Propane do	4,218	3,800[e]	3,344	1,103[3]	4,6923
Butane do	3,949	3,700[e]	3,207	3,754[3]	3,7693
Pentane do	13,518	12,000[e]	10,354	12,390[3]	13,7963
Total do					
Refinery products:					
Liquified petroleum gases do	836f	1,230[f]	987[f]	1,880[f,3]	703[3]
Gasoline do	6,379[f]	10,892[f]	9,678[f]	10,554[f,3]	4,627[3]
Kerosine do	5,029[f]	5,805[f]	4,683[f]	5,774[f,3]	3,549[3]
Distilate fuel oil do	7,052[f]	8,167[f]	7,185[f]	7,603[f,3]	4,764[3]
Residual fuel oil do	6,573[f]	9,278[f]	6,458[f]	8,962[f,3]	4,884[3]
Unspecified do	3,000[f]	4,000[f]	4,600[f]	450[f]	4,800[f]
Total do	29,000[f]	39,000[f]	34,000[f]	35,000[f]	23,000

Notes: e – estimated data rounded to no more than three digits.
R – revised , do – ditto, – zero
Source: U.S. Geological Survey (2016)

Exploring IFFs from Nigeria's extractive sector and consequences for good governance

Various reports have identified Nigeria with the top IFFs out of Africa and a cumulative US$ 217.7 billion loss 1970–2008; representing 30.5 per cent of outflows from Africa (Afolabi 2015). It is acknowledged that 90 per cent of IFFs from Nigeria emerge from the nation's corruption-prone oil and gas sector. The eminent persons report reveals that 76.4 per cent of IFFs from Nigeria (US$ 24.1 billion) were deposited in the US, Spain, France, Japan and Germany (UNECA 2012b).

- A considerable source of financial loss relates to the challenges of tax collection in general and that of the petroleum sector in particular. The Natural Resource Governance Institute (NRGI) (2016) identifies the following challenges associated with tax management in Nigeria, fuelling IFFs:
- *Discretionary reliefs*, including pioneer status: indications are that the total revenue loss to government based on returns filed by companies to the Federal Inland Revenue Service (FIRS), covering some 12 industry players, is estimated at US$ 2 billion.
- *Tax evasion and avoidance*: Global Financial Integrity reports show that illicit financial flows from Nigeria are estimated at US$ 240 billion between 1970 and 2008, the bulk of which emanated from the oil industry.
- *Pricing methodology*: Ambiguity and inconsistency in pricing methodology characterised disputes between multinational oil companies and the Nigerian government, resulting in the loss of over US$ 4.4 billion over the period 2009–16. Most of the losses have been blamed on royalty computation and under-assessment on the fiscal valuation on chargeable oil; and,
- *Weak tax management*: The FIRS is largely unable to manage and administer the complex tax regime associated with the oil industry, resulting in weak enforcement of tax collection from industry players.

An example of pervasive corruption in Nigeria's petroleum industry is the scandal involving the Anglo-Dutch oil company, Shell and the Italian oil company, Eni, which, in 2011, paid the sum of US$ 1.1 billion in a murky transaction for the ownership of an offshore oil block. A former petroleum minister in Nigeria awarded the block to Malabu Oil and Gas, which he secretly owned (Global Witness 2017).

Large-scale IFFs from Nigeria's extractive sector have undermined the nation's governance agenda. The nation's 2016 HDI score of 0.527 was slightly higher than the average for sub-Saharan Africa of 0.523. However, when discounted for inequality, the HDI fell to 0.328, categorised as low human development and positioning the nation at 152 out of 188 countries and territories (UNDP 2016b). The poor social development outcome is partly attributable to IFFs from the country (Afolabi 2015).

Summary and recommendations

Summary

IFFs have assumed a dangerous dimension in Africa, draining critical resources and compromising the region's prospects for good governance. Africa has lost as much as US$ 1 trillion over the past half-century, in a development that has alarmed policymakers and development partners within and beyond the region. Africa's extractive industries are particularly susceptible to IFFs largely because of the complex processes associated with their global value chain, which often transcends national boundaries. The loss of financial resources to Africa is undermining the continent's development agenda, particularly against the backdrop of the failure of the continent to meet critical elements of the MDGs. Angola, the DRC and Nigeria are resource-rich economies but they have also witnessed significant levels of IFFs out of their economies over the past several decades, leaving a significant proportion of their populations deeply impoverished and development prospects seriously undermined.

Recommendations

This section presents recommendations aimed at mitigating the crisis of IFFs from Africa and fostering good governance in the extractive industries. These include the following:

- *Embrace the Extractive Industries Transparency Initiative* (EITI): Launched in 2003, the EITI, which has been adopted by 32 countries around the world, largely resource-rich economies, seeks to foster transparency and accountability in the management of natural resources.
- *Empower national tax authorities*: All too often, national tax authorities in several African countries are weak and unfamiliar with the intricacies of the extractive sector. They should be supported with relevant training and empowered to discharge their responsibilities.

- *Combat corruption*: Corruption is a vice that undermines development prospects and fuels conflict in Africa. It denies access to financial resources critical to fostering sustainable development. Non-governmental organisations should be alert to their responsibilities and hold governments accountable for their actions.
- *Promote institutional mechanisms*: All too often, African institutions are too weak to foster good governance. Institutions – laws, norms, customs and practices – are critical to reinforcing prosperity and development. There is the need to support institutions that ensure contract enforcement, peace and social order, which are critical elements for development.
- *Deepen financial regulations*: In an era of globalisation, where there is rapid movement of goods and services across national borders, there is the need to deepen financial regulation dealing with off-shore transactions, including trade, investment and finance. There is a need to safeguard the integrity of financial transactions against money laundering and other criminal activities, including tax evasion.
- *Apply severe sanctions to deter IFFs:* Once established, cases of IFFs should be prosecuted in the court of law and severe sanctions, including imprisonment, should be meted out to culprits. All too often, parties to IFFs have been let off the hook, owing to their influence in high levels of government. There is a need to sanction criminal elements engaged in IFFs, to serve as a deterrent to others.
- *Implement poverty reduction strategies:* Endemic poverty in Africa is the bane of its development. A disproportionate element of the African population is humbled by poverty. These people are largely victims of IFFs that have undermined national economies across Africa in the past several decades. Therefore, policymakers should integrate poverty reduction strategies, including social safety nets to protect vulnerable members of society, as elements of Africa's development policy.

Notes

1. Table includes data available up to 30 December 2014.
2. In addition to the commodities listed, gold was also produced by artisanal miners, but information was inadequate.
3. Production was approximately 90 per cent gem quality and 10 per cent industrial grade.
4. Reported figure.
5. Sources: BP Plc.

6. Includes asphalt and bitumen.
7. Table includes data available to 27 February 2015.
8. In addition to the commodities listed, tourmaline and crude construction materials are produced but information is not available.
9. Include mine production and processed tailings.
10. Salable refined production only.
11. Reported exports.
12. An estimated 20 per cent of total diamonds is gem quality; the majority of production is from artisanal mining.

References

Afolabi, A., 2015, 'How illicit financial flows cramp development in Nigeria', Fitila News, 10 July.

African Development Bank (AfDB), 2012, African Economic Outlook, 2012, in association with the OECD, UNDP and UNECA, Paris.

African Development Bank (AfDB), 2017, African Economic Outlook, Angola 2017.

African Mineral Development Centre (AMDC), 2015, Impact of Illicit Financial Flows on Domestic Resource Mobilization: Optimizing Africa's Mineral Revenues. Macroeconomic Policy Division, March.

African Union, 2009, Africa Mining Vision, February, Addis Ababa.

African Union, 2015, Agenda 2063. The Africa We Want, Addis Ababa.

Anderson, M., 2015, 'Africa losing billions from tax fraud and tax avoidance', *The Guardian*, 2 February.

Baker, R. and Kodi, M., 2010, 'Illicit Financial Flows from Africa', Meeting Summary, Chatham House, London, 10 May.

Boyce, J. and Ndikumana, L., 2012, Capital Flight from Sub-Saharan African Countries: Updated Estimates, 1970–2010, Political Economy Research Institute, University of Massachusetts, Amherst, October.

Centre for Budget and Governance Accountability (CBGA), 2015, Illicit Financial Flows: 'Overview of Existing Research Methodologies and Approaches', proceedings of a Mentoring Workshop organised by the Centre for Budget and Governance Accountability and Financial Transparency Coalition, 10 December, New Delhi.

Chr. Michelsen Institute, 2011, Extractive Sectors and Illicit Financial Flows: What Role for Revenue Governance Initiatives?

Encyclopaedia Britannica, 2011, DR Congo.

Encyclopaedia Britannica, 2012a, Angola.

Encyclopaedia Britannica, 2012b, Nigeria.

Encyclopaedia Britannica, 2017, Democratic Republic of Congo.

Energy Information Administration (EIA), 2016, Angola Country Report, U.S. Department of Energy, Washington, DC.

Focus Africa, 2017a, 'Angola at a glance', www.focusafrica.gov.in/country-at-glance-Angola.html, accessed 26 July 2017.

Focus Africa, 2017b, 'DRC: sector profile', www.focusafrica.gov.in/sector-profile-DRC.html, accessed 27 July 2017.
Forbes, 2017, 'Angola's profile', https://www.forbes.com/plakes/angola, accessed 26 July 2017.
GAN Integrity, 2015, Angola Corruption Report, GANBusiness Anti-Corruption Portal, www.business-anti-corruption.com/country-profiles/angola, accessed 26 July 2017.
GAN Integrity, 2016, Democratic Republic of Congo Corruption Report, August.
Gilles, A., 2010, 'Fueling Transparency and Accountability in the Natural Resources and Energy Markets', proceedings of the 14th International Anti-Corruption Conference, Bangkok, 11–13 November.
Global Financial Integrity (GFI), 2010, Illicit Financial Flows from Africa: Hidden Resource for Development.
Global Financial Integrity (GFI), 2017a, Illicit Financial Flows, www.gfintegrity.org/issue/illicit-financial-flows/, accessed 23 July 2017.
Global Financial Integrity (GFI), 2017b, Illicit Financial Flows to and from Developing Countries: 2005–2014, April.
Global Initiative against Transnational Organized Crime, 2017, Criminal Economies in West Africa, accessed 23 July.
Global Witness, 2015, 'DR Congo plans to water down laws against mining corruption', https://www.globalwitness.org/en/press-release/democratic-republic-congo-plans-water-down-laws-against-mining-corruption/, October, accessed 27 July 2017.
Global Witness, 2017, 'Shell knew: emails show senior executives at UK's biggest company knew it was party to a vast bribery scheme', April.
Herkenrath, M., 2014, Illicit Financial Flows and their Developmental Impacts: An Overview International Development Policy, The Graduate Institute, Geneva.
Human Rights Watch, 2010, Transparency and Accountability in Angola. An Update, New York.
Kapoor, S., 2007, Illicit Financial Flows and Capital Flight, A Re-Define Briefing Paper.
Kar, D., 2016, 'The adverse economic consequences of capital flight and Illicit Financial Flows from developing countries', www.gfintegrity.org/the-adverse-economic-consequences-of-capital-flight-and-illicit-flows-from-developing-countries/, accessed 23 July 2017.
Kar, D. and Cartwright-Smith, D., 2010, Illicit Financial Flow from Africa: Hidden Resources for Development, 26 March.
KMPG, 2014, Democratic Republic of Congo: Country Mining Guide, KPMG Global Mining Institute, Strategy Series.
KPMG, 2017, Nigerian Mining Sector Brief, Third Edition, February.
Kuwonu, F., 2016, 'DRC economy: the giant awakens', Africa Renewal, August–November.

Le Billion, P. 2011, 'Extractive sectors and Illicit Financial Flows', http://www.cmi.no/publications/file/4248-extractive-sectors-and-illicit-financial-flows.pdf, accessed 24 July 2017.

Leading Group on Solidarity Levies to Fund Development (LGSLfD), 2008, Illicit Financial Flows. Final Report from the Task Force on the Development Impact of Illicit Financial Flows, November.

MBendi, 2017, 'Oil and gas in Nigeria', https://www.mbendi.com/indy/oilg/at/ng/p005.html-5, accessed 27 July 2017.

McKinsey & Co, 2010, Africa's Path to Growth: Sector by Sector, June.

Melik, J., 2008, Illegal Mining Fuels DR Congo War, BBC World Service report, 13 November.

Mevel, S., 'Ofa, S. and Karingi, S., 2013, Quantifying Illicit Financial Flows from Africa through Trade Mis-pricing and assessing their Incidence on African Economies, proceedings of the 16th GTAP Conference, Shanghai, 12–14 June.

Nations Encyclopedia, 2017, Nigeria Country Overview, www.nationsencyclopedia.com/Africa/Nieria.html, accessed 27 July 2017.

Natural Resource Governance Institute (NRGI), 2016, Nigerian Country Strategy Note, August.

Njie, S., 2015, 'Illicit financial flow and the extractive sector in Africa', Graduate School of Public and International Affairs, University of Ottawa.

Okoli, A. and Uhembe, C.A., 2015, 'Crisis of natural resource governance in Nigeria's extractive industry: examining the phenomenon of artisanal mining/quarrying', *Global Journal of Human-Social Science & Political Science* 15 (7), version 1.0.

Oxford Policy Management, 2013, The Impact of Mining in the Democratic Republic of Congo. Performance of date and future challenges (in association with Synergy), October.

Sahadath, C., 2014, Illicit Financial Flows and Capital Flight in Africa.

Standing, A., 2007, 'Corruption and the extractive industries in Africa: can combating corruption cure the resource curse?', Institute for Security Studies Paper 153, October.

United Nations Development Programme (UNDP), 2016a, DR Congo Human Development Report, New York.

United Nations Development Programme (UNDP), 2016b, Nigeria: Human Development Report, New York.

United Nations Economic Commission for Africa (UNECA), 2012a, High Level Panel (HLP) on Illicit Financial Flows (IFFs) from Africa. Information Note, Addis Ababa.

United Nations Economic Commission for Africa (UNECA), 2012b, Illicit Financial Flow: Report of High Level Panel on Illicit Financial Flows from Africa. Commissioned by the AU/ECA Conference of Ministers of Finance, Planning and Economic Development, Addis Ababa.

United Nations Economic Commission for Africa (UNECA), 2015, MDG Report, 2015, Lessons Learnt in Implementing the MDGs. (in association with the African Union and the African Development Bank), Addis Ababa.

United Nations Office on Drugs and Crime (UNODC), 2016, Coherent Policies for Combating Illicit Financial Flows (in association with the OECD), July.

U.S. Geological Survey, 2012, 2012 Minerals Yearbook Africa, Department of the Interior, Washington, DC, May.

U.S. Geological Survey, 2014, U.S. Geological Survey, Mineral Yearbook – Angola, Department of the Interior, Washington, DC.

U.S. Geological Survey, 2015, 2013 Minerals Yearbook – Congo, Department of the Interior, Washington, DC.

U.S. Geological Survey, 2016, 2014 Minerals Yearbook, Nigeria, Department of the Interior, Washington, DC.

Yeboah, S., 2017, Down the Drain? The Economic Costs of Illicit Financial Flows in Africa's Extractive Sector, African Development Bank, Abidjan, July.