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From Curse to Purse

Making Extractive Resources Work for Development

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Acronyms

CSR	Corporate Social Responsibility
EC	European Commission
EU	European Union
EITI	Extractive Industries Transparency Initiative
FDI	Foreign Direct Investment
FLEGT	Forest Law Enforcement, Governance and Trade
GDP	Gross Domestic Product
GNI	Gross National Income
LNG	Liquefied Natural Gas
MDGs	Millennium Development Goals
MICs	Middle Income Countries
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PGM	Platinum Group of Metals
RECs	Regional Economic Communities
SEC	Stock Exchange Commission
UNECA	United Nations Economic Commission for Africa
US	United States
WTO	World Trade Organization

Executive Summary

Extractive resources have shaped, to a large extent, the economic trajectories of most resource-rich countries. For a privileged few, these resources have been transformative, putting their host countries on a new development path. But for many, they have not succeeded in stimulating sustainable and inclusive development outcomes, experiencing instead increasing income inequality, weakened governance structures and conflicts in the worst cases. While it is not appropriate to say that the sole presence of extractive resources necessarily and unavoidably causes a country to perform badly, experience has shown that they have largely fashioned the political economy landscape of countries, where policies and politics intertwine to shape the decision-making process and therefore the destiny of those countries.

Extractive resources are characterised with special features that distinguish them from other goods generally used in the production process or for consumption. Resources are unevenly spread across continents but also across countries within continents. This unequal balance between the supply of extractive resources and the increasing demand, have been the cause of much economic and political tensions between resource-rich and resource-hungry countries. In addition, extractive sectors often dominate the domestic economy, in terms of contribution to the gross domestic product (GDP) and in terms of exports. Besides, volatility of prices and the steady increase in commodity prices since the last ten years has been an important feature of the sector. While part of it can be explained by market speculations, it was largely driven by the sheer magnitude and the rate at which the demand from developing countries increased to feed their economic development needs.

Most countries in Africa are richly endowed with extractive resources. The continent is known to host about 30% of world's reserves and to produce more than 60 different types of metals, ores and minerals and at the end of 2010, 17 of the 53 African countries produced and exported oil. Recent discoveries have raised the profile of many Africa, putting to light the immense opportunities that could be derived but also ringing the alarm bell on the potential challenges that it could equally entail.

What impact then for minerals in Africa? Of the top ten fastest growing economies in the world a remarkable seven were African countries, most of them driven by strong demand for commodities. The past decade has seen remarkable progress in growth performances, catching up over the last decades of 1980 – 2000 - GDP grew from an annual average rate of less than 2 percent in 1978–95 to nearly 6 percent over 2003–08 and is expected to grow at 4.8% in 2012. But performance across resource-rich countries have varied substantially and despite good growth rates, there has been little progress on some fronts. For instance, many countries still fall short of their Millennium Development Goals (MDGs) targets and income inequality remains relatively, including in those that have performed well. This is even more striking among resource-rich countries, pointing to them being the victims of *the paradox of the plenty*, where buoyant performance have not succeeded in transforming resources into wealth. Substantial rents available to resource-rich countries caused a disproportionate reliance on *petro-dollars* and the illusion of prosperity. Countries remain heavily dependent on a few economic sectors and on exports of primary products making them highly vulnerable to exogenous shocks such as commodity prices, exchange rates fluctuations and external demand. Furthermore, significant hard and soft infrastructure deficits remain a major hurdle to competitiveness and to private sector development. Finally, weak institutional structures coupled with governance challenges have incapacitated states to play fully their role.

The relationship between rents and politics need to be underscored. Although rents are often defined in economic terms, they however become a fundamentally political feature the moment they create, structure and entertain incentives for rent-seeking behaviours and encourage competition among the rent-seekers.

In resource-rich countries, the prospects of rents have largely shaped the behaviour of political powers, to the extent that the contrastingly poor economic performance of resource-abundant countries cannot be explained by pure economic rationale. Looking at the politics behind the scene is essential to understand some of the challenges.

Can the curse be avoided then? Much will depend on governments' political will and dynamics, on the extent to which politics is intertwined with the capture of rents and on the relationship with all actors of society. But complementary to this, a range of fundamental factors is necessary to set the foundations right. These include setting transparency and good enough governance as overarching principles in debates at all levels, namely at the resource-rich country's level, home countries of extractive industries, at companies' level and in the banking and financial system. While these are necessary first steps, by themselves are not sufficient to address all the challenges.

They should be complemented by a set of reforms and policies. For instance, it requires defining consistent economic policies that include extractive sectors in the "broader economy" and proper policy sequencing. It also includes mobilising sufficient domestic revenues from extractive sectors, including defining an appropriate tax system and fighting capital flight, both at the domestic and international levels. In addition, it necessitates an effective management of resources and finding the right balance to reconcile competing claims for revenues from extractive industries with longer-term objectives of sustainable development and stabilisation goals.

Beyond good politics and good policies, making extractive resources work for development would also require all partners involved to work together in a more coherent, constructive and coordinated way. There is insufficient synergy among what private companies do on their own to maintain their social license to operate, what donors do in their bilateral and multilateral development support activities and what the resources-rich government does. Furthermore, interaction among these stakeholders are often limited to contractual (for the private sector it is often around paying taxes) or aid relationship (for the donor it is about foreign aid or technical assistance). However, potential for synergies to unlock converging interests is huge but insufficiently explored. ECDPM therefore intends to stimulate dialogue and thinking along these lines.

1. Introduction

Extractive resources have shaped, to a large extent, the economic trajectories of most resource-rich countries. For a privileged few, these resources have been transformative, putting their host countries on a new development path. But for many, they have not succeeded in stimulating sustainable and inclusive development outcomes, experiencing instead increasing income inequality, weakened governance structures and conflicts in the worst cases. While it is not appropriate to say that the sole presence of extractive resources necessarily and unavoidably causes a country to perform badly, experience has shown that they have largely fashioned the political economy landscape of countries, where policies and politics intertwine to shape the decision-making process and therefore the destiny of those countries.

While no one has yet found the miracle recipe to administer to inoculate resource-rich countries against a potential *resource curse*, there are nevertheless some foundational factors worth considering in an attempt to make resources work for development. This include understanding the underlying political economy of resources and rents, putting in place a *good enough* governance and institutional structures that fit the realities of individual countries and taking bold reform measures, including the effective mobilisation and efficient management of resources. This is obviously easier said than done.

While political will and policies to transform minerals into wealth remain essentially a core responsibility of the State, the roles of the extractive industries and of the development community are crucial and complementary. The location-specific nature of extractive industries and the fact that most companies are there to stay for a relatively long period of time makes the private sector an essential player in community development. At the same time, development support is expected to undergo a fundamental revamping exercise if countries become more autonomous in terms of revenue generation to finance their budgets and their sector development. It therefore becomes essential that governments, industries and development partners work together to ensure better coordinated efforts and greater coherence towards shared development objectives.

This paper looks at extractive resources in Africa, against the background of recent mineral discoveries and good economic prospects in the last decade. **Section 2** provides a general overview of the global stock of extractive resources with a special focus on Africa. This brief state of play gives an order of magnitude to the importance of extractive industries in Africa. It gives hope because if well harnessed, those resources could be fundamentally transformative. But it is also gives chills, because if mismanaged, the resources could be irreversibly destructive. Looking at the economic performance of resource-rich African countries, **Section 3** of the paper zooms in on the various challenges that still plague a number of countries. Highlighting the importance of rents, it considers the relationship between policies and politics, to conclude that besides good policies, what matters is good politics. **Section 4** of the paper highlights some foundational elements that have the potential to make or brake development outcomes in resource-rich countries. Finally **Section 5** looks at the role of the private sector and of development partners, as key partners in delivering on development, while **Section 6** sums up a positive agenda.

2. Extractive resources: where and how much?

Extractive resources are a key economic feature[1] to almost half of the world's population. Although their importance varies across countries, some 4 billion people live in countries whose economic trajectories have been shaped to a large extent by such resources. Some countries have succeeded in using their wealth as a stepping stone towards sustained development and are today industrialised countries. This is the case of developed countries such as the United States, Canada, Norway or Australia. Notwithstanding challenges, some developing countries have also fared quite well in transforming their endowments into assets: Chile, Botswana, Malaysia, Namibia or South Africa have all used their extractive resources as part of their development strategy. However, many others have unfortunately been trapped into a vicious circle of *resource curse* and have missed numerous opportunities of making their resources work for the development of their people and their countries at large.

Increasing demand[2], coupled with recent discoveries of substantial reserves of minerals, oil and gas across the world, has led to renewed interests, especially from investors and to increasing attention for development support, in particular to address governance challenges.

This section provides a brief outlook of the global stock of extractive resources, with a particular focus on Africa. It attempts to set the context and gives an order of magnitude, to better measure the importance of extractive resources to many African economies and understand what's at stake in terms of development challenges.

2.1. Global stock of extractive resources: An overview

The term "extractive sectors" covers a broad range of activities. It refers to natural resources "extracted from the ground", and therefore comprises of mining and metals as well as conventional fossil fuels, and in particular oil and gas. Almost each extractive resource has a special characteristic and a unique usage and therefore makes it difficult to provide an overall assessment of their socio-economic impacts, without running the risk of making some over-simplifications and generalisation.

Although this paper refers to extractive sectors in general, it is important to highlight the differences in the mining, oil and gas sectors. To name but a few, the size of investment and the "life expectancy" of projects vary from one sector to the other. For instance, oil and gas exploration generally requires heavier investments, including some downstream processing (i.e. setting up of a liquefied natural gas plant) or in infrastructure to enable transportation (such as pipelines). Similarly, the costs and risks associated with exploration/ extraction vary significantly from one project to the other and from one sector to the other. For instance, offshore oil or gas projects are costlier and riskier at the *exploration* stage, while the costs and risks may be higher at the *extraction* phase for mining projects. The potential size of rents associated with extractive sectors, and their likely political economy effects are

[1] See World Bank (2002): " Treasure or trouble? Mining in Developing Countries.

[2] As a result of the combined effect of (i) a rise in demand from *developing countries* as their population and economies grow and more resources are needed to feed the gigantic needs of industrialisation, urbanisation, construction, increased energy, consumption and infrastructure development; (b) an increase in demand from *developed countries* due to technological progress, driven by global industrial demand to produce more sophisticated and high-tech products and to respond the increasing demand for "green" technologies to meet the challenges of eco-friendly environment; (c) slow supply adjustments, due to the lag between exploration for new resources and the start of production; and (d) the proliferation of trade-distorting restrictions from some key producing countries.

significantly higher in the case of oil and gas sectors. The ability of producers to manage price fluctuations, and their likely implications on revenue generation in resource-rich countries also vary from one sector to the other.

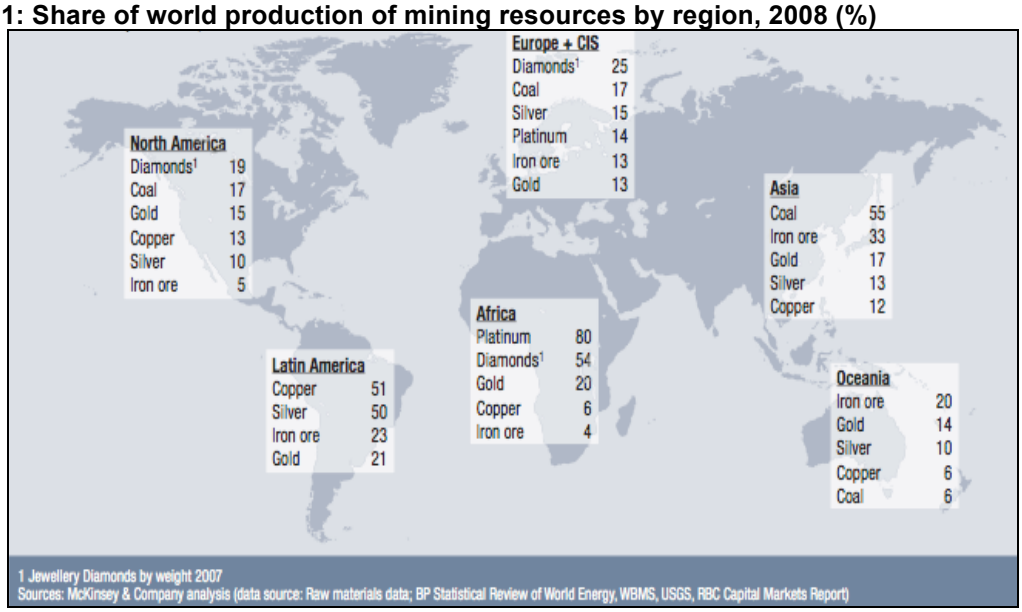
2.2. Key features of extractive sectors

Extractive resources are characterised with special features that distinguish them from other goods generally used in the production process or for consumption[3]. Key among those features are:

2.2.1. Resources are unevenly spread….

Extractive resources are the result of geological phenomena and are unevenly distributed, across continents but also across countries within continents. Some countries are richly endowed while others are deprived of any mineral assets. Figures 1 and 2 give a rough snapshot of the current stock of *known* minerals by region.

Figure 1: Share of world production of mining resources by region, 2008 (%)



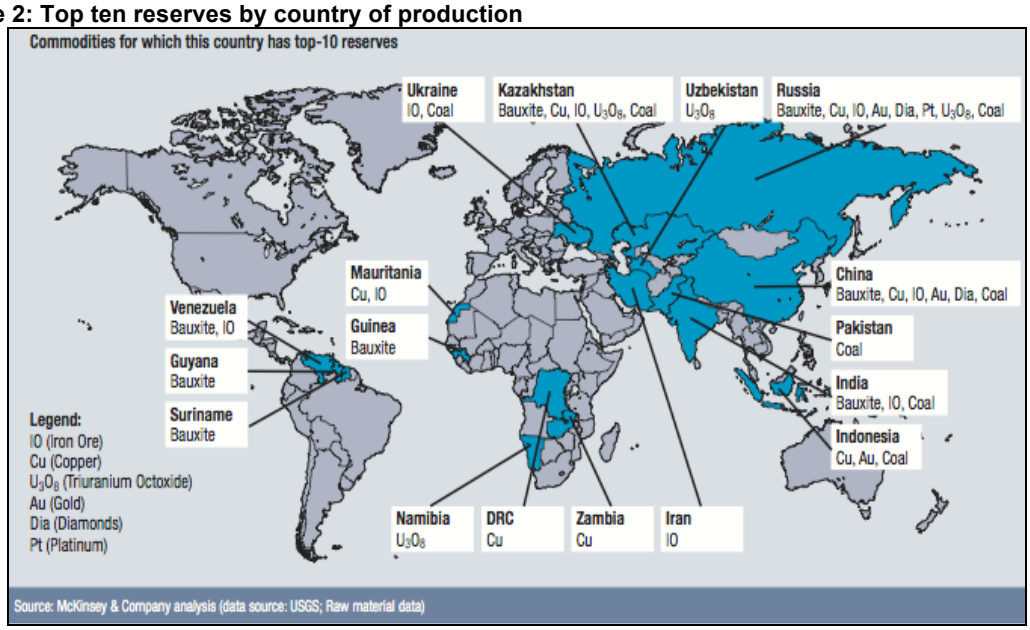
Source: World Economic Forum, Mining and Metal Scenario to 2030

While it might appear at first glance that all continents are endowed with some kinds of minerals, a closer look at Figure 1 actually shows that all regions do not have the same minerals and that some of them are particularly concentrated in certain parts of the world, and in relatively large volumes. Africa for instance, hosts 60% of the world's reserves of platinum, essential in the electronic industry. Latin America has 51% of global production of copper, another key metal used in electrical applications, amongst others. Asia is home to 55% of coal, still an essential fossil fuel and source of energy.

[3] See World Trade Report 2010: Trade in Natural Resources (WTO) for a definition of key features of natural resources.

Zooming more closely at a country level (Figure 2), few countries host the largest reserves of key minerals. Over-concentration is not without risks. Many of them are emerging economies and are therefore large consumers of resources for their own industrialisation purposes, thus causing potential supply risks. At the same time, some of them do not always have a good track record of market openness practices, as was witnessed in attempts to raise trade distorting practices (e.g. China in the case of rare earths, export taxes in Zambia), while some others are in politically sensitive regions, making them rather unstable trade partners.

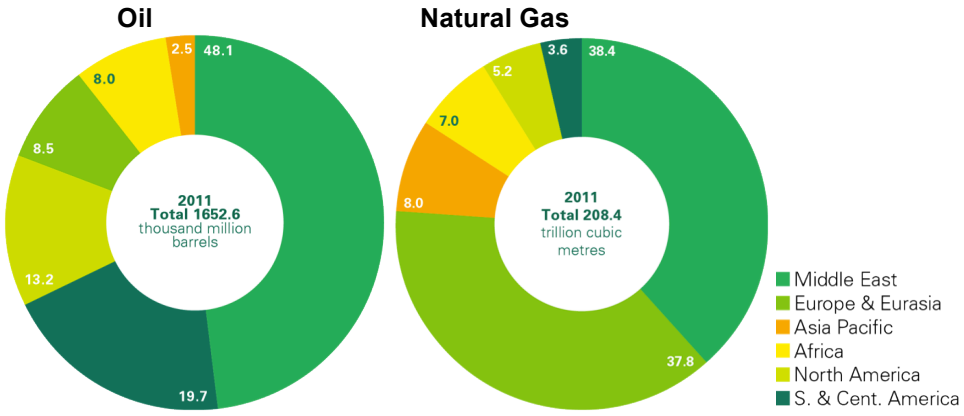
Figure 2: Top ten reserves by country of production



Source: World Economic Forum, Mining and Metal Scenario to 2030

The oil and gas sector is even more concentrated, as portrayed in Figure 3. It confirms the over concentration in some parts of the world, with two-third of the world's gas reserves are situated in Eurasia and the Middle East. It is estimated[4] that 90% of the world's oil reserves are located in only 15 countries and that most industrialised countries are net importers of extractive resources.

Figure 3: Distribution of proved oil and gas reserves, 2011 (%)

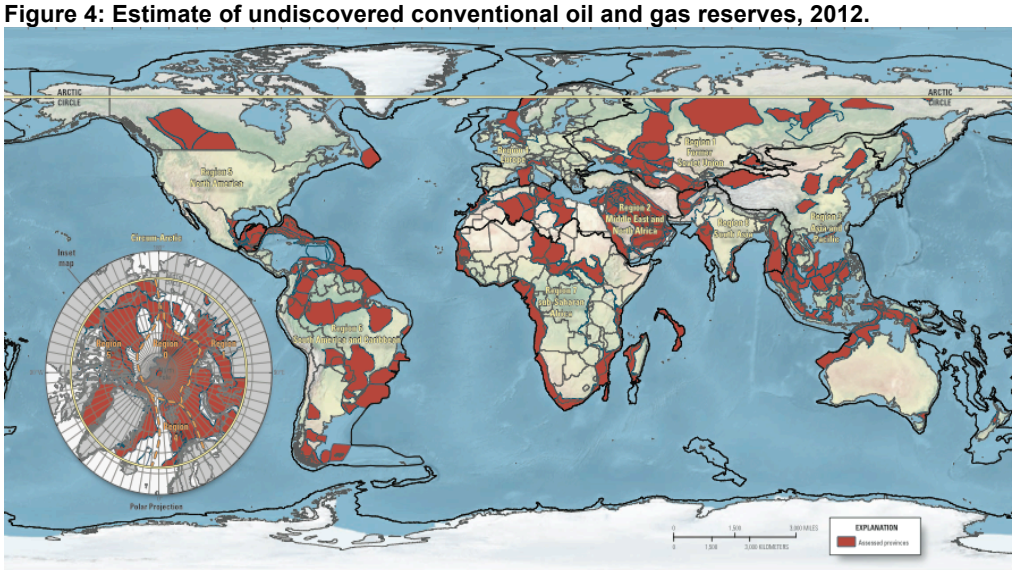


Source: BP Statistical Review of oil energy, 2012.

[4] World Trade Report 2010, p. 48.

Figure 4 illustrates conventional oil and gas reserves, yet to be exploited. Although some have predicted an oil peak[5] soon to be experienced, recent discoveries - notably in the Arctic region, off the coast of Ghana and along the coast of East Africa - reveal that the potential is yet to be fully maximised.

Figure 4: Estimate of undiscovered conventional oil and gas reserves, 2012.



Source: US Geological Survey, March 2012.

Although not the focus of this paper, it is important to note that scientific progress is likely to shed light on a variety of unconventional sources of fossil energy resources, such as shale gas or ice gas. While shale gas have been up for discussion for quite some time, its methods of exploration, which involve injection of a significant volume chemicals, water and sand into the soil in order to crack rocks to allow the natural gas to flow (through a method called *hydraulic fracking*), remain at the centre of controversy, given its likely environmental impacts. Many countries, including the United States (US), Canada and China, have shown clear interests to exploit this source of energy to meet their energy demands, while others, notably in Europe remain quite divided on the matter. Figure A1 in the Annex shows the current estimated global reserves of shale gas.

Gas hydrates (or ice gas) are another potential candidate for energy resources. They are found in the large amounts of gas from methane gas hydrates, found under deep-sea beds (> 500 metres deep) and under thick layers of permafrost. Some estimates[6] suggest that the total amount of natural gas bound in hydrate form may exceed all conventional gas resources – coal, oil and natural gas, combined. As can be seen in Figure A2 in the Annex, gas hydrates are available in abundance, in particular at the continental margins and permafrost regions. However, so far, the mining technology has been tested mostly in laboratories with few experiments, notably in Canada and the US[7]. First onshore attempts are expected by 2014 on the continental slope off Japan[8].

[5] In 1956, the geologist Marion King Hubbert presented a paper at the meeting of the American Petroleum Institute in San Antonio, Texas, titled *Nuclear Energy and Fossil Fuels* where he suggested that overall petroleum production would peak in the United States between the late 1960s and the early 1970s. The US oil production did indeed appear to peak in 1970.

[6] See www.scienceadvice.ca/en/assessments/completed/gas-hydrates.aspx

[7] For more information, see studies carried out by the US Geological Survey, available on http://energy.usgs.gov/OilGas/UnconventionalOilGas/GasHydrates.aspx

[8] See http://worldoceanreview.com/en/energy/methane-hydrates/2/

This unequal balance between the supply of extractive resources and the increasing demand, have been the cause of much economic and political tensions between resource-rich and resource-hungry countries. For instance, fears of resource nationalism or attempts by some resource-rich countries to restrict supply of their resources on the international market have led to a dispute brought to the Dispute Settlement Body of the World Trade Organization[9] (WTO) and by strategic responses by resource-hungry countries[10] to ensure they secure their access to resources of strategic interests. It has also led to severe political tensions, notably in the Middle East, with the recent threat of Iran to block the Strait of Hormuz, which is one of the world's key petroleum transit choke point. At the domestic level, mounting expectations from local communities have led to violent interactions between the population on the one hand, and the authorities and industries on the other hand, as was witnessed for instance in Zambia, Mozambique or more recently in South Africa.

2.2.2. Extractive resources are a dominant feature…

Many resource-rich countries have a common feature: the extractive sectors dominate the domestic economy, in terms of its contribution to gross domestic product (GDP) and in terms of exports. From Tables 1a and 1b, the top 15 exporters account for 66.9% of the share in world trade of fuels and 75.3% of the world share of mining products respectively. There are however significant contrasts between fuels and mining sectors, with fuels sectors being far more dominant, both in terms of the share of individual countries in world trade and in terms of the contribution to their total merchandise trade. Fuels exports of Saudi Arabia, Angola, Algeria or Venezuela account for more than 90% of these countries merchandise exports. Although the share of mining is smaller than that of fuels, they nevertheless dominate exports of countries such as Peru or Chile or even Zambia (estimated at 80%).

Table 1 a. Top leading exporters of fuels excluding intra EU trade, 2008, %

	Share in world	Share in total country's merchandise exports
World excl EU intra	**100**	**21.8**
Russia	12	65.7
Saudi Arabia	11	89.7
Canada	4.9	27.6
EU (27)	4.4	5.9
Norway	4.4	67.7
United Arab Emirates	4	49.2
Iran	3.6	82
Kuwait	3.2	95
Venezuela	3	93.8
Algeria	3	98.1
United States	3	5.9
Nigeria	2.9	91.7
Angola	2.6	98.9
Singapore	2.4	18.5
Australia	2.3	31.9
Above 15	**66.9**	**-**

Table 1b. Top leading exporters of mining products excluding intra EU trade, 2008, %

	Share in world	Share in total country's merchandise exports
World excl EU Intra	**100**	**4.5**
Australia	9.9	28
EU27	9.4	2.6
United States	9.3	3.8
Chile	7.9	60.1
Canada	6.7	7.8
Russia	4.8	5.5
Brazil	4.8	12.8
China	4.4	1.6
South Africa	4.1	29
Japan	3.6	2.4
Peru	2.5	43
India	2.2	6.4
Indonesia	2.1	7.9
Norway	1.8	5.7
Korea Rep	1.8	2.2
Above 15	**75.3**	**-**

Source: WTO World Trade Report, 2010

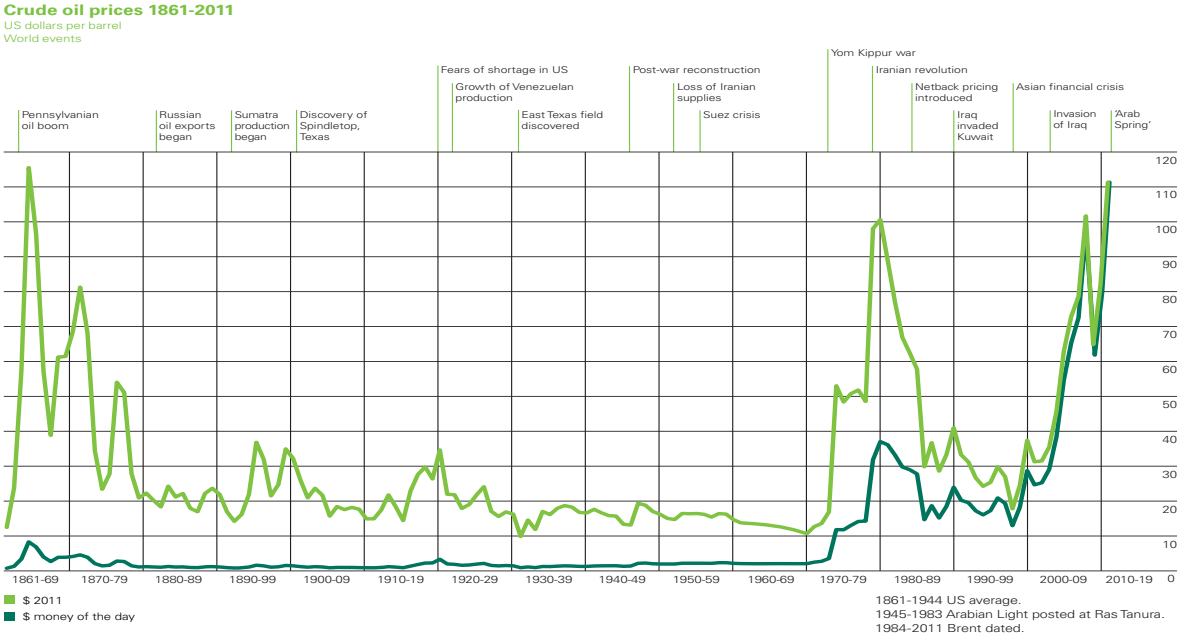
[9] See WTO Dispute on China – Measures related to the exportation of various raw materials, available at www.wto.org/english/tratop_e/dispu_e/cases_e/ds394_e.htm

[10] See EU 2008 Raw Materials Initiative, 2011 Communication on Tackling the Challenges in Commodity Markets and on Raw Materials; US 2010 Critical Materials Strategy; Japan's 2008 Guidelines for Securing National Resources and 2009 Strategy for Ensuring Stable Supplies of Rare Metals; Korea 2010 Plan for Stable Procurement of Rare Metals; and discussion in Ramdoo (2011).

2.2.3. Price volatility is particularly striking…

Volatility of prices and the steady increase in commodity prices since the last ten years has been an important feature of the extractive sector. Figure 5 illustrates the erratic trends in commodity prices since the turn of the 20th century. This is particularly relevant for oil, with drastic fluctuations. In general though, for the most part of the century, the tendency was mainly towards decreasing trends in commodity prices, with exception of oil shocks, which partly supported the growth super-cycle. The last ten years have witnessed an impressive explosion in commodity prices, wiping out the effects of the previous price declines. While part of it can be explained by market speculations, it is largely driven by the sheer magnitude and the rate at which the demand from developing countries increased to feed their economic development needs.

Figure 5: Trends in crude oil prices



Source: British Petroleum (2012): BP Statistical Review of World Energy – Oil, June 2012.

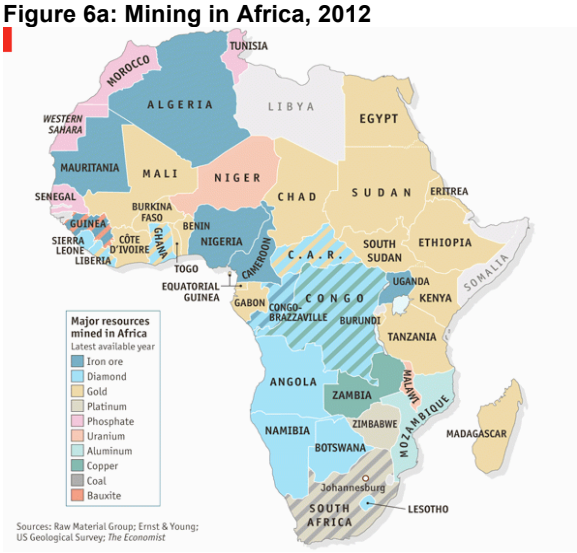
2.3. State of Play in Africa

Most countries in Africa are richly endowed with extractive resources. The continent (Figure 6a) is known to host about 30% of world's reserves and to produce more than 60 different types of metals, ores and minerals (see Table A1 in the Annex for an overview of mineral deposits in Africa). South Africa, for instance, is the world's largest producer of platinum group of metals (PGMs), DR Congo is the main producer of cobalt (40% of world's production), Rwanda is an important producer of tantalum and Angola and Nigeria are the largest petroleum producers of Africa (see Table A2 in the Annex for an overview of key producers of minerals).

At the end of 2010, 17 of the 53 African countries produced and exported oil: Libya and Nigeria held the world's 8th and 10th biggest oil reserves respectively. In December 2010, Ghana became the latest African country to join the club of world oil producers, which includes, among others, Angola, Congo Brazzaville, Equatorial Guinea, Gabon, Chad, Sudan and Cameroon. Africa currently holds over 10% of the world's oil reserves and supplies over 12% to the global market. But this may be largely underestimated, as pictured in Figure 6b. New discoveries of hydrocarbons estimates show that Sub-

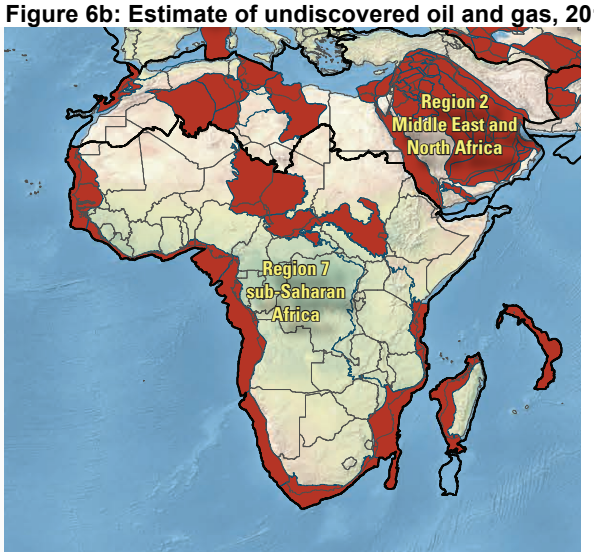
Saharan Africa is home to some 115 billion barrels of oil, 75% of which are in the Atlantic ocean, and 744 trillion cubic feet of gas, most of it lie offshore of East Africa, mainly in Tanzania, Mozambique, Madagascar or Seychelles. Similarly, new mineral discoveries have also been made in Tanzania (gold), Gabon (Manganese), Liberia (iron ore) and Sierra Leone (diamond)[11].

Figure 6a: Mining in Africa, 2012



Source: The Economist, February 2012

Figure 6b: Estimate of undiscovered oil and gas, 2012



Source: US Geological Survey, March 2012.

It is estimated that that the value of the 'known' sub-soil natural assets in the African countries is only about one-fifth of that of the OECD countries, estimated at some $23,000 per square kilometre, compared to $114,000 in OECD countries[12]. This is not the result of poor endowment, but rather that of under-exploration, due to insufficient geological knowledge and lack of endogenous technical know-how and technology to conduct surveys. While most developed countries have explored and exhausted their stocks of extractive resources in the last 200 years, African countries are yet to uncover much of their underground resource endowments.

Numerous oil and gas fields have been discovered in the last decade in Africa, both on the continent, and off its coasts, in deep-sea waters. It reveals that the potential of Africa is far from being fully maximised. In addition to conventional sources of minerals and fuels, Africa is not doubt home to substantial reserves of unconventional oil and gas, including shale gas and ice gas, as mentioned in Section 2.1. Future exploration/ exploitation is likely to bring to light more opportunities for the continent, but also new challenges, which will need to be contained if extractive resources were to deliver effectively on development objectives.

[11] Source: Global Economic Prospects, World Bank, June 2011.
[12] Source: Collier Paul (2010): The Plundered Planet.

3. Are Minerals Africa's best friend?

3.1. Economic performance in Africa: A Mixed Result

3.1.1. Impressive results overall…

Over the past decade, many African countries have made remarkable progress in their growth performance, catching up over the last decades of 1980 - 2000. After years of stagnation, and despite the global crisis, economic growth took off — GDP grew from an annual average rate of less than 2 percent in 1978–95 to nearly 6 percent over 2003–08 and is expected to grow at 4.8% in 2012[13]. Good performance was essentially led by a combination of factors, including the boom in commodity prices, increasing internal demand and improved economic policies.

Of the top ten fastest growing economies in the world a remarkable seven were African countries, most of them driven by strong demand for commodities. African economies have attracted significant foreign direct investment (FDI) despite the global crisis and credit squeeze by banks. This has largely been attributed to improved investors' perceptions in the future economic prospects of Africa and by high commodity prices. Sectors that have driven FDI include extractive sectors for a large part, but also construction, telecommunications, financial services and the hospitality industry[14]. However, investment remains highly concentrated in few projects and few countries. A closer look at FDI by destination reveals that between 2003 and 2010, ten countries[15], which include 5 North African countries, have attracted more than 75% on new investment projects, most of them (with the exception of Kenya) being mineral rich[16].

Living standards have generally increased. Poverty rate[17] have decreased by almost 1 percentage point a year, from 57.6% in 1995 to 50.9% in 2005 and is expected to reach 35.8% in 2015 if growth rates are maintained at the current levels[18]. In addition, a number of countries have joined the club of middle-income countries (MICs)[19]. Africa currently accounts for 23[20] out of 48 MICs and more countries[21] are expected to reach this level by 2025 if the current growth trends continue or are strengthened.

Prospects for the future remain bright, despite the fact that the global crisis in the developed world is expected to continue at least in 2013. New discoveries in oil and gas and minerals are expected to generate sizeable mineral revenues, comforting some countries in their place of key international players. However, their high dependence on trade and investment from the developed world and emerging markets and on the vagaries of commodity prices make projections conditional on exogenous factors.

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13 Source: World Bank 2012: Africa Pulse, Volume 6, October 2012.
14 Ernst and Young (2011) Africa Attractiveness Survey: It's time for Africa.
15 These include South Africa, Egypt, Morocco, Algeria, Tunisia, Nigeria, Angola, Kenya, Libya and Ghana.
16 Ernst and Young (2011): Africa Attractiveness Survey: It's time for Africa.
17 Defined here as the percentage of population living on less than $ 1.25 a day.
18 World Bank (2011).
19 Countries having more than $1000 per capita income.
20 These are Angola, Botswana, Djibouti, Cameroon, Cape Verde, Cote d'Ivoire, Congo Rep, Eq. Guinea, Gabon, Ghana, Lesotho, Mauritius, Mauritania, Namibia, Nigeria, Senegal, South Africa, Sudan, South Sudan, Sao Tome et Principe, Seychelles, Swaziland and Zambia.
21 Chad, Kenya, Mozambique, Gambia and Rwanda are likely to reach MIC level by 2025 if their growth rates are sustained. Benin, Burkina Faso, Guinea, Togo could potentially reach MIC level by 2025 if they accelerate their economic performance beyond 7 percentage points per year. Zimbabwe, Mali, Comoros also have potential, provided they stabilize their political situations (source World Bank).

3.1.2. … but much progress still to be achieved

Performance across resource-rich countries varies substantially and has been historically volatile. While some countries have succeeded in sustaining their development path[22] (e.g. Botswana, Namibia), in other cases, the exceptional, and often erratic economic performance has been largely driven by cyclical windfall gains as a result of the commodity boom, with no necessary long-term inclusive domestic reform to stimulate the development process. In these cases, despite positive and high growth rates and increases in GDP in absolute terms, there has, on average, been little progress in the overall welfare creation. Wealth from extractive resources has not been sufficiently transformative.

Despite remarkable progress in a number of countries, Africa's collective GDP remains relative low: In 2008, it was estimated at $ 1.6 trillion, roughly similar to that of Brazil or Russia. Some structural weaknesses still plague the development efforts of a number of countries. Poverty is still a major cause of concern with nearly 400 million people still living in extreme poverty. Many countries still have important MDG gaps. Income inequality (Figures 7a and 7b) is relatively high in a number of countries, including in those that have performed well. Matching income inequality with economic wealth, (approximated by income per capita), Figures 7c and 7d reveal that countries that have higher income per capita also tend to experience higher inequality (a higher Gini index indicate higher income inequality), suggesting structural weaknesses in improving the welfare of their population despite significant revenues from extractive sectors.

This contrasting feature highlights a major challenge for many resource-rich countries. Victims of the "paradox of the plenty"[23], most probably largely due to poor politics coupled with weak governance and mismanagement of their resources, many resource-rich countries have not succeeded in stimulating the transformation of their resources into development. The majority of their citizens remains largely outside the "circles of beneficiaries", they are largely dependent on foreign aid and domestic revenues mobilised from their resources remain rather weak. Substantial rents available (Figures 8a and 8b) to resource-rich countries, causing a disproportionate reliance on petro-dollars and the illusion of prosperity, also largely explain some of the challenges faced by many resource-rich countries.

Highly concentrated production and export structures in particular in primary commodities are yet to be addressed if resource-rich countries are to sustain their economic performance in the longer-term. Figures 8c and 8d and Table 2 illustrate the symptomatic export concentration in resource-rich countries. In half of the oil-rich countries, exports of oil and gas represent more than 80% of total exports. This is less striking in mineral-rich countries, although in almost half of them, exports of ores and metals represent more than 50% of total merchandise exports. Matching this with the number of products exporters, in 2010, 13 countries, 5 products or less accounted for more than 75% of total merchandise exports (Table 2). Oil-rich countries outstand other countries, showing the degree to which rents associated with fuels crowd out other productive sectors and create mono-sectoral economies that are highly vulnerable to exogenous shocks such as commodity prices, currency fluctuations and external demand. A key challenge therefore remains the diversification of the product base.

[22] The 2011 World Bank Classification of countries has recently revealed that a number of resource-rich countries have moved from being low-income countries to being middle-income countries; this is the case for Ghana, Zambia and Angola for example.

[23] Term attributed to Terry Lynn Karl, author of the book "The Paradox of Plenty: Oil Booms and Petro States", 1997.

Figure 7a: Gini[24] index[25] for mineral rich countries

Figure 7b: Gini index for oil rich countries

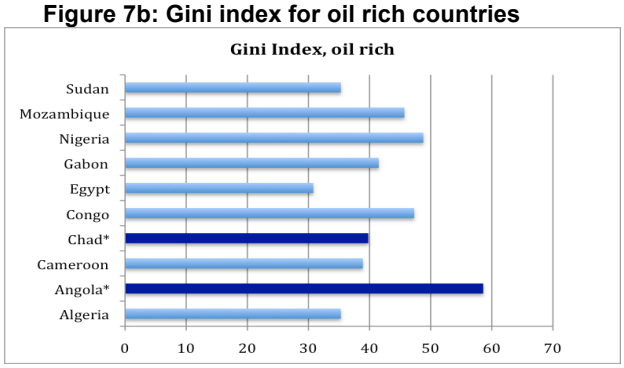


Figure 7c: Mineral rich GNI per capita[26], $, 2010

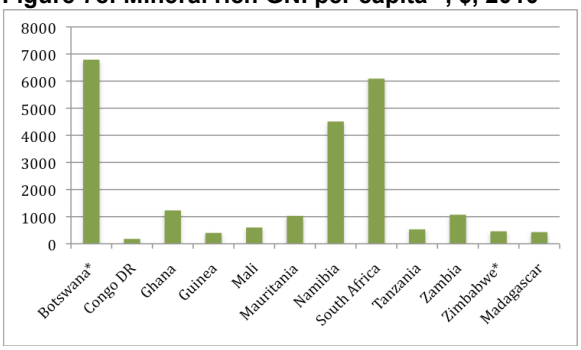
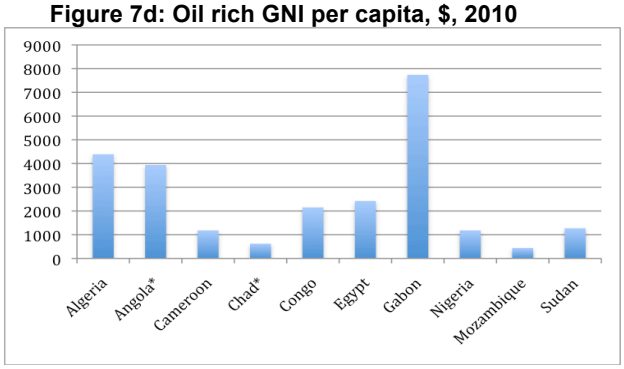


Figure 7d: Oil rich GNI per capita, $, 2010



Source: World Bank (2012): World Development Indicators.

Figure 8a: Oil and gas rents as a % of GDP, 2010

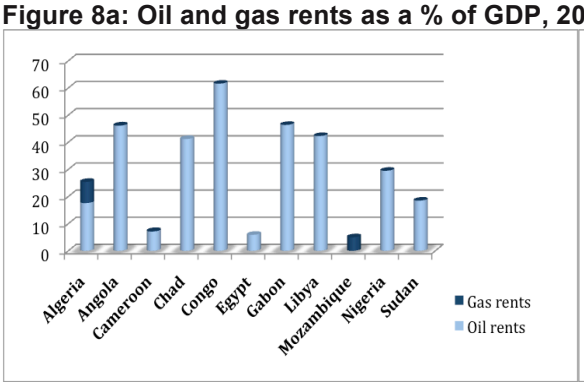


Figure 8b: Mineral rents as a % of GDP, 2010

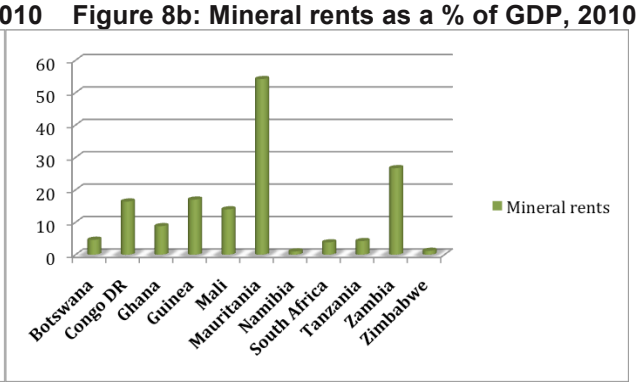


Figure 8c: Oil and gas as a share of merchandise Exports, 2009

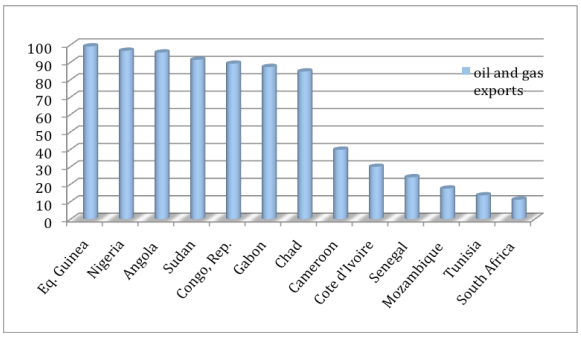
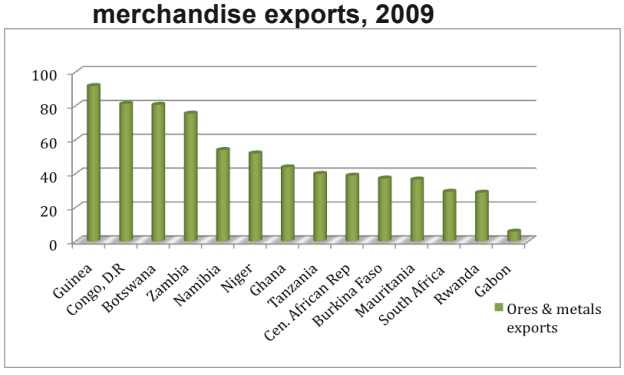


Figure 8d: Ores and metals as a share of merchandise exports, 2009



Source: World Bank (2010; 2011): Africa Development Indicators 2010; 2011

[24] The Gini index measures the extent to which the distribution of income among individuals or households differs from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 represents perfect inequality.

[25] Note: Data used in calculating the Gini index varied for all countries. With the exception ob Botswana (1994) Zimbabwe (1995), Angola (2000) and Chad (2003) all other surveys were carried out between 2005 – 2010.

[26] GNI per capita was calculated using the Atlas Method.

Table 2: Number of export products representing more than 75% of total merchandise exports, 2010

Country	No. of exports >75% of total exports	Top 3 products		
Angola	1	Petroleum oils, crude		
Chad	1	Petroleum oils, crude	Petroleum oils, non crude	-
Congo Rep	1	Petroleum oils, crude	-	-
Nigeria	1	Petroleum oils, crude	Liquefied gas	-
Sudan	1	Petroleum oils, crude	-	-
Gabon	2	Petroleum oils, crude	Manganese ores	log, woods
Eq. Guinea	2	Petroleum oils, crude	Liquefied gas	-
Niger	2	Natural uranium	Light oils	-
Guinea	3	Aluminum ores	Aluminum oxide	coffee
Zambia	4	Refined copper	Unrefined copper	Copper ores
Mauritania	4	Iron ores	Octopus	Petroleum crude oils
Cameroon	5	Petroleum oils, crude	Cocoa beans	Bananas
Rwanda	5	Coffee beans	Niobium, tantalum, vanadium	Tin ores and conc
DR Congo	6	Cobalt ores	Petroleum oils, crude	Copper ores
Ghana	7	Cocoa beans	Manganese ores	cocoa butter
Namibia	7	Natural uranium	Unwrought zinc	uranium ores
Botswana	16	Diamond, non ind., unworked	Nickel	Diamond, non ind, not mounted
Zimbabwe	19	Tobacco	Ferro chromium	cane sugar
South Africa	103	Platinum	Gold	Iron ores

Source: World Bank (2011): Africa Development Indicators 2011

The significant hard and soft infrastructure deficits are a major hurdle to competitiveness and to private sector development. This has been a major constrain in unlocking “enclave” sectors such as extractive sectors and have hampered linkages with other productive sectors. On the soft side, the often unfriendly business environment coupled with poor logistics and trade (non-)facilitation are yet to be addressed if structural transformation is to take place in an effective and productive manner. On the hard side, despite the often underestimated physical challenges linked to the particularly rugged and uneven geomorphology of African landscape, the quantity and quality of physical infrastructure largely falls short of what is needed to transform the continent into a competitive place to do business.

Weak institutional structures coupled with governance challenges have incapacitated states to play fully their role. Indicators confirm that in general, resource-rich countries have performed less well than others, probably as the risk of economic destabilization due to the perverse effects of the “Dutch disease” and conflicts are higher, due to political looting, rent seeking and patronage from powerful groupings.

3.2. Rents and Politics: An impossible marriage?

Rents are generally defined in orthodox economic terms as a *surplus value* obtained as a differential between the price at which a resource is sold and the latter’s cost of production (including normal profits). But if rents are initially an economic feature, they are however a fundamentally political feature the moment they create, structure and entertain incentives for rent seeking behaviours and encourage competition among the rent-seekers.

In resource-rich countries, the prospects of rents have largely shaped the behaviour of political powers, to the extent that the contrastingly poor economic performance of resource-abundant countries cannot be explained by pure economic rationale. Looking at the politics behind the scene is essential to understand some of the challenges. The relationship between politics and rents from extractive resources have generated more or less intense bargaining processes between the State and other actors, sometimes leading to a host of malpractices, ranging from conflict of interests, looting and corruption, that in turn, have impacted negatively on the management of resources and distribution of wealth. In some cases, perverse coupling of politics and rents have entertained kleptocratic and clientelistic government practices, who, bound by short-termism[27], have in return deliberately manipulated and shaped incentives to fit the interests of elites and hence nurtured a system of patronage.

In 2006, in an article published in the Journal of Foreign Policy, called "First Law of Petro Politics", Tom Friendman observed that

> *… (T)he higher the average global crude oil price rises, the more free speech, free press, free and fair elections, an independent judiciary, the rule of law, and independent political parties are eroded. And these negative trends are reinforced by the fact that the higher the price goes, the less petrolist leaders are sensitive to what the world thinks or says about them…*

What Friedman describes is common practice in a number of resource-abundant countries and largely explains the disappointing result observed in countries that have the means to cater for their people. Besides affecting the relationship between the State and elites, rents from extractive resources have also shaped the relationship with the citizens. Rents, in effect, distracted the State from the politically sensitive task of increasing the burden of taxation or enforcing tax collection. Instead, such rents have provided the incentives to put in place discretionary and non-transparent systems whereby weakened institutions and citizens' legitimate ability to demand democratic accountability have marginalised the decision-making process and rendered governments less attentive to the needs of their people.

4. Avoiding the curse: Basic instincts

Countries are not cursed because they have extractive resources but rather because weak or/and corrupt governments have not been able to translate natural assets into prosperity and have failed to create a conducive business environment where services and industries can flourish and become competitive. As mentioned in Section 3.2, much of this has to do with political will and the extent to which politics is intertwined with the capture of rents generated by extractive resources and the relationship with all actors of society. Complementary to this, a range of fundamental factors is necessary to set the foundations right. This section outlines the main elements.

[27] In democratic systems, political powers are bound by short-termism, that reflect roughly the political cycle.

4.1. Transparency and governance: Whose affair?

Good enough[28] governance practices matter. These include a complex web of issues, ranging from transparency, an efficient and effective performance-based management system, a functioning system of checks and balances, absence of corruption and accountability of governments to their citizens.

In countries that have performed poorly, there seems to be some common denominators. Transparency is often very low while corruption is relatively widespread. The availability of revenue/ rents from extractive sectors have often triggered self-interested behaviours such as rent-seeking and have bred ineffective systems. This underlines a fundamental but highly complex puzzle: how to set policies, build institutions and manage revenues efficiently, thus avoiding the trap of rent-seeking, bearing in mind the domestic endogenous institutional needs and realities.

The direction of causality is not easy to establish and there is no simple linear relationship between economic performance and governance and institutions. However, in cases where extractive sectors have performed well, there seem to be a positive and strong correlation with the quality of economic management, governance systems and institutional capacity to transform assets into long-term sustainable wealth. In effect, it is not simply ***what*** countries decide to do with their natural resources that matter, but rather ***how*** they do it.

A number of ***fundamentals*** have to be set right, ranging from sound economic reforms, with emphasis on careful industrial policies fostering value chains, independent and transparent financial institutions to manage the assets and the revenues, an enabling business climate, sound and transparent legal and institutional frameworks and most important of all, committed governments that are accountable to their citizens.

But, it takes two to tango. Assuming they have the political will to do so, governments can only succeed in being more transparent and accountable to their citizens if extractive industries are equally committed to the same values and principles. If well harnessed, natural resources could become a springboard to greatly improved economic and social development in many developing countries.

Although not new, concepts such as *accountability* and *transparency* have taken an important place in the international debate[29] on governance in general, and on development effectiveness in particular. The results of the 4th High Level Forum in Busan reconfirmed this trend: After extended negotiations, a wide group of stakeholders reached agreement on the Busan Partnership for Effective Development Cooperation, a new framework for cooperation, which places high priority on transparency and accountability.

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[28] See North D *et. al.* (2010): "Limited Access Orders: An introduction to the conceptual framework". The authors outline that there is a need for developing countries to strive for "good enough governance" with the implication that the institutional needs in these places is qualitatively different from developed countries.

[29] Since 2008, the G20 has been the political driving force behind actions to counter tax havens and non-cooperative jurisdictions. Much of the work has been taken forward by the OECD DAC and Committee on Fiscal Affairs. At the European level, the EC presented a number of communications where transparency and governance are key issues, this include inter alia: the Communications on Promoting Good Governance in Tax Matters (2009) and Tax and Development: Cooperation with Developing Countries on Promoting Good Governance in Tax Matters (2010) support. The Transparency Directive and Directive on Accounting Standards of October 2011 require large listed and unlisted extractive industries to disclose their payments on a project by project and country by country basis. This is based on the 2010 Dodd-Frank legislation enacted in the US which have similar requirements.

While such initiatives are a necessary first step to promote revenue transparency, they are however not sufficient and therefore require additional steps towards making transparency mandatory and applied at different levels. Ideally, all these measures should apply simultaneously to all stakeholders involved, under strong regulatory frameworks and be monitored in a coordinated manner and include, in priority that:

1. Governments *disclose the production data* of extractive resources, in addition to *revenues received* from companies operating both on-shore and off-shore their territories;
2. Governments disclose *on what* and *how they spend* their revenues and *how they manage* returns from their resources;
3. Extractive industries are mandated to *publish what they pay* to governments where they operate, on a country-by-country and project-by-project level. Accounting standards should be strengthened so that multinationals do not avoid paying taxes by means of "tax optimisation" procedures (such as transfer pricing);
4. Government and companies *disclose and make publicly available the terms and conditions of contracts*, operation and exploitation of resources;
5. *Home countries* of multilateral companies ensure that their own companies and all companies listed on their stock markets undertake systematic and periodic *project-by-project* and *country-by-country* reporting;
6. A mechanism is set up for the transparency of the *banking system***,** in particular that of tax havens and/ or secrecy jurisdictions, so that countries can access information to recover (illicit) capital flights (and other stolen assets);
7. Although not directly related to the management of extractive resources, that *donors publish what they fund*. This is particularly important for bilateral and non-traditional donors, who often provide aid in kind. If governments are required to publish what they receive, it is important to see what and where donors fund to ensure that the "circle of transparency" is complete.

Some of the above mechanisms are already in place or have been initiated recently by a number of countries and institutions, while others are less popular and therefore might never even be proposed. Despite multiple political declarations of the G20 concerning tax havens and secrecy jurisdictions, there has been a frank opposing front, including by some G20 members themselves, when it came to taking measures to seriously fight the plague.

While companies have also been largely opposed to too detailed financial reporting systems, for fear that confidential accounting figures fall in the hands of competitors, interestingly, they took a more genuine interest in the debate around transparency and governance, as reflected in initiatives such as the Extractive Industries Transparency Initiative[30] (EITI), the Kimberley Process or FLEGT. This demonstrates that a conducive environment is good for business.

At the multilateral level, a number of countries have initiated home-grown regulatory reforms to strengthen transparency mechanisms for mining, oil and gas companies operating on their territories, although it remains to be seen what real impacts these will have for resource-rich countries.

[30] EITI has a set of global standards to promote transparency in the mining, oil and gas industries. In countries that are members of the EITI, companies have to publish what they pay and countries have to disclose what they receive. However, being a member of the EITI is not mandatory for resource-rich countries. So far, 12 countries are EITI compliant, 23 other countries have candidate status and in total, 29 countries have disclosed their payments and revenues in EITI Reports. The only developed country member of the EITI is Norway.

For instance, the Hong Kong Stock Exchange requires disclosure of tax, royalty and other payments when oil or mining companies list on the stock exchange. In the US[31], the Dodd Frank Act (2009) requires large US and foreign oil, gas and mining companies listed on the US stock exchange to report payments on a project-by-project and country-by-country level. The Stock Exchange Commission (SEC) issued the details of the implementation rule in September 2012. But this is being challenged in front of the Federal Court by the American Petroleum Institute and a coalition of business groups, on the ground that the SEC rule will impose additional costs on US firms and put them at a competitive disadvantage against large government-owned oil giants not subject to the rule. It shows the politics at work despite stated rhetoric about the importance of transparency. Who will ultimately win the battle will show where the balance tilts in reality.

Similarly, in October 2011, the European Commission[32] proposed amendments to the existing Directive on transparency requirements for companies and to the Directives on accounting rules for annual accounts and consolidated accounts. In this context, listed and large unlisted mining, oil, gas and logging companies will be required to report payments on a project-by-project and country-by country-level. In September 2012, the EU Parliamentary Committee voted in favour of the Directive. Although the final text is yet to be adopted, there seems to be consensus around the broad lines of the Directive (with the exception of the exemptions in reporting requested by companies in countries where national legislations prohibit disclosure). The final Directive is expected to be voted before the end of 2012. As in the US, in Europe powerful lobbies are at work to limit the legal transparency requirements on companies, notably by resisting the project-by-project reporting.

It is understood that "good enough" governance and transparency are necessary first steps, but by themselves are not sufficient to address all the challenges. They should therefore be viewed as an overarching principle guiding all other necessary reforms and policies.

4.2. Economic Reforms: Making resources work for development

Extractive resources in themselves do not bring wealth or poverty. It takes more to achieve sustainable development: a vibrant services sector, high quality hard and soft infrastructure, a

[31] Section 1504 of the Dodd-Frank Act of 2009 requires Stock Exchange Commission (SEC) reporting companies to disclose in their annual reports a description of any payment made by the company, a subsidiary of the company, or an entity under control of the company to a foreign government or the U.S. federal government for the purpose of the commercial development of oil, natural gas or minerals. Commercial development of oil, natural gas or minerals includes exploration, extraction, processing, export and other significant actions relating to oil, natural gas or minerals, or the acquisition of a license for any such activity, as determined by the SEC. The information to be included in annual reports include the type and total amount of the payments made for each project relating to the commercial development of oil, natural gas or minerals, and the type and total amount of such payments made to each government. "Payment" means a payment that is made to further the commercial development of oil, natural gas or minerals and is not *de minimis* (i.e. larger than US$100,000). Covered payments include taxes, royalties, fees, bonuses, production entitlements and other material benefits that the SEC determines are part of the commonly recognised revenue stream for the commercial development of oil, natural gas or minerals.

[32] The Proposal introduces a new obligation for listed and large non-listed extractive and logging companies to report all material payments to governments broken down by country and by project, when these payments have been attributed to a specific project. Types of payments to be reported include production entitlements, taxes on profits, royalties, dividends, signature, discovery and production bonuses, license fees, rental fees, entry fees and other considerations for licenses and/or concessions, other direct benefits to the government concerned. The information disclosed on payments to governments would be publicly available to all stakeholders either through the stock market information repository or the business registry in the country of incorporation (in the same way as financial statements are made available).

diversified industrial base and effective social and redistributive policies are all fundamental elements that must complement the exploitation of non-renewable extractive resources.

4.2.1. Economic policies and sequencing

Defining consistent economic policies that include extractive sectors in the "broader economy" would include the following elements:

1. Defining policies that are tailored to local circumstances, including the integration of existing small-scale and artisanal mining into regional and global value chains;
2. Improving the quality of the business environment to increase (local) private sector participation;
3. The location-specific nature of extractive industries generates opportunities for local SMEs (non-mining) to provide certain goods and services to the extractive sector, therefore developing side-stream[33] industries. This could be done by maximising the use of local procurement and local content, including the employment of local population, and where possible, at managerial levels;
4. Upstream, downstream and side-stream linkages between the extractive sector and other industries, notably through diversification, beneficiation and value addition;
5. Addressing the crippling effects of inadequate and insufficient capital, skills, technology and information asymmetry;
6. Ensuring transfer technology and technical know-how to foster the dissemination of technology to other industries;
7. Capacity to mitigate impacts of external factors, such as commodity price cycles and counter-cycles - which could impact on national budget - and manage revenue volatility.

Policy sequencing is another key factor of the success of economic policies. It affects the way in which management strategies and economic policies fit with the evolution of the sector. For instance, in countries where extraction of resources are a relatively new activity, the way government defines conditions of contracts and production, set the fiscal and taxation regime and shapes the investment climate, is determinant for the way in which revenues will be collected and will impact on the economy.

4.2.2. Resource Efficiency

Extractive resources are non-renewable and increasing demand has put those resources under severe pressure. Africa produces, and is likely to increase its production of key strategic extractive resources. Yet, compared to the rest of the world, its consumption is relatively low, not because it does not need the resources, but rather because resource consumption is proportionately linked to the level of development[34].

Africa's economic transformation is only beginning and therefore, if the current trends in economic growth are maintained, many African countries are expected to graduate to higher levels of living standards and economic development. In many countries, there is already a growing middle-class and rapid urbanisation, going hand in hand with an increasing consumption of energy, technological products, consumer goods and investment in new physical infrastructure. Clearly this will lead to even

[33] These include trade services such as electricians, mechanics, informatics, logistics, etc. - i.e business created around mining activities. While established to serve mines, they could well serve other activities.

[34] Statistics (2004 data, SERI Global Material Flow Database. 2008) show for instance, that Africa extracts 15 kg of raw materials per capita per day and consumes 11kg per person per day. This compares to the US, with 92 kg extracted and 102 kg consumed of raw materials per capita per day. In addition, the US Geological Survey estimated that the remaining reserves of gold is expected to last 20 years, reserves of copper is expected to last 34 years and reserves of iron is expected to be depleted in the next 70 years, if the current rate of extraction is maintained.

more competition for extractive (and other natural) resources, quicker depletion as well as an increasing waste production.

As highlighted in international debates and recent research, it may therefore be high time for African countries to formulate and implement policies that can help them to manage and use their extractive resources more efficiently and therefore ensure that future generations cal also benefit from the resources. Recycling is a key component of resource efficiency. Recent initiatives in Europe show that recycling can be a means to acquire an impressive amount of critical and precious metals from electronic and industrial waste. Giving more consideration to developing appropriate policies appears to be a crucial step for dynamic African economies not only from a resource efficiency perspective, but also from an environmental and health perspective. For instance, in countries such as Ghana and Benin, current recycling practices in the informal sector have resulted in considerable environmental damage and bear on the health of workers and neighbouring communities. These practices need to be improved and turned to the advantage of the population.

The EU's Raw Materials Initiative[35], which spells out options for securing Europe's access to strategic resources in the future, identifies resource efficiency and recycling as key pillars of the EU's strategy to address supply constraints and to reduce the dependency on foreign sources as much as possible. Similarly, many European Member States (in particular those that have high-tech industries and that heavily rely on imports of strategic raw materials, namely Germany, Sweden, Finland etc.) have over the last years increased their efforts to develop their recycling industries.

It is therefore opportune for African countries to define their own policy options regarding the treatment and disposal of their electronic wastes given the immense potential of urban mining that these are likely to represent as the growing middle class consume more and more electronic goods and therefore produce increasing volumes of wastes.

4.3. Mobilising resources from extractive industries

As it currently stands, extractive resources do not contribute sufficiently to Africa's development. Many governments have failed to collect sufficient revenue from extractive resources despite price booms, partly due to disincentives to tax linked to high rents, poor revenue management systems and weak institutions. This is also largely due to the fact that industries were often granted too many and too generous tax concessions and subsidies. Given the low level of domestic revenues mobilised from extractive sectors, countries often rely excessively on international trade taxes, an issue which has often been at the centre of some countries' reluctance to enter into trade agreements, either at the regional or the multilateral levels.

In addition to the domestic challenges in raising revenue, the recent financial crisis has also shown the limits of official development assistance (ODA). In the wake of the financial crisis, main donors, in particular in Europe, are now wrestling with their own debt problems, austerity budgets, rising unemployment and social turmoil. Therefore, they are rethinking their aid policies. More than ever, hence, countries rich in resources need to find autonomous and endogenous sources of resources to finance their development.

[35] See Ramdoo, I (2011): *Shopping for Raw Materials: Should Africa be worried about the EU Raw Materials Initiative*, ECDPM, www.ecdpm.org/dp105

Taxation is not only an economic issue, it is highly political, in particular in resource-rich countries. Many[36] have argued that taxation is fundamental in reinforcing the *social contract* and therefore contributes to increasing representation in and scrutiny of government. But in cases where extractive resources generate high rents, governments tend to relieve the fiscal pressure and to reduce tax enforcement on their citizens in an attempt to attenuate the demand for accountability from citizens[37]. This perpetuates the system of patronage in exchange of support to stay in power.

In addition, given the specific nature of the extractive sector due to the long gestation period of projects, fiscal regimes have been a central element of contract negotiations between companies and governments. Investors argue strongly for special incentives to compensate for the high initial investment costs[38] frontloaded in the exploration phase and to cover geological, political and commercial risks. This however requires a balance sharing of risk and reward between the government and the private sector. Setting taxes too high runs the risk of deterring investment, thereby holding back the growth of the industry. Conversely, too low tax rates have the risk of raising too little revenue and therefore not collecting enough revenues to redistribute in other productive sectors and to spend on development.

Governments have little means to assess whether the compensation and associated risks are in reality justified and to measure the likely profitability of the project with or without incentives as a result of the asymmetry of information and negotiating skills. Besides the economic arguments and weak institutional capacities, terms and conditions of contracts as well as tax returns of companies are rarely published, therefore making it difficult to measure the effective volume of revenue collection from resources.

Provided there is political will to do so, mobilising sufficient resources for development requires reforms of fiscal regimes and transparency of payment mechanisms. A number of resource-rich countries have initiated reform programmes, including the review of mining and petroleum legislations and codes and significant tax reforms to address windfall gains due to the resource boom. This may prove to be quite a difficult task because contracts and stabilisation agreements render companies immune to changes in legislations and that large companies often know how to find their ways at the highest level to prevent too costly changes.

A number of tax and non-tax instruments are available and the desired stake can be achieved by combining these different instruments. To name just a few:

1. In terms of direct taxes, *corporate tax* is the most commonly used one, but progressive profit taxes or resource-rent taxes have also been used. However, the higher the tax rate, the higher the incentive for companies to use “creative accounting mechanisms” to optimize their tax payments. Again, the specific nature of extractive industries calls for additional “safeguard” legislative mechanisms to address the loopholes that might permit tax avoidance. At the level of the country itself, the taxable entity is often project- or field-based rather than firm-based. It therefore requires the need to consider ring-fencing[39]

[36] See Brautigam *et. al.* (2008).
[37] See Crystal (1990), Ross (2001), Brautigam *et al.* (2008), Collier and Hoeffler (2009), McGuirk (2010).
[38] Extractive industries are usually capital intensive and it may take up to 5 or even 10 years before a new industry becomes profitable.
[39] The standard corporate income tax normally applies to the consolidated operations of a firm. However, extractive industries often operate as individual projects and therefore in practice, a firm operating several projects can reduce its taxable income by deducing losses of one project from profits of another. Ring fencing is therefore a mechanism to protect tax revenues from continuous deductions, also avoiding giving an advantage to existing firms over new comers.

mechanisms in the legislation. Furthermore, at the level of the company, in the case of multinationals, operating across many tax jurisdictions provides for the scope to reduce revenues or inflate expenditures, notably through transfer pricing[40] mechanisms, a practice often used to minimise the tax liability in a particular country.

2. *Royalties*[41], historically the most important instrument for taxing minerals, are particularly attractive as they ensure up-front revenue when production begins and are relatively easy to administer, provided the government has an informed knowledge of the volume or the value of production.
3. *Production sharing arrangements* are common in the petroleum sector but less so in the mining sector. They usually take the form of concession agreements, production-sharing contracts or risk-service contracts. The distinguishing feature of these instruments is that resources remain with the state while extraction and resource development remain with the company in exchange for a share of production. This is an interesting option for governments, if they want to be more accountable on the management of their resources.
4. Some governments prefer to hold *equity* in extractive projects to secure a higher take from very profitable projects but also because it gives them a sense of ownership of their resources and provide more direct control over the project development.

Extractive companies are however not homogenous and can be grouped in three broad categories, namely: (i) large multinationals, which can be further divided into long-established and new companies; (ii) junior companies and (iii) small-scale mining. It therefore requires a differentiated approach to reflect the types of industries and the ability of companies.

A fair and just fiscal regime that would bring sufficient resources to finance development and at the same time continue to attract investment is highly complex to establish. It requires defining a progressive system (i.e a differentiation based on capitalisation of the company) that reflects the ability to pay. In countries that have several resources, it also requires a system with distinct fiscal regimes to reflect their specific corporate requirements[42]. But beyond good policies, it requires good "politics" – changes *to the core* to reshape the interaction between political powers and those who have vested interests in maintaining the *status quo*.

4.4. Addressing leakages in the hose: fighting capital flight

Capital flight is one of the biggest obstacles to the mobilisation of domestic resources in Africa. Tax flights from developing countries are estimated to be several times higher than aggregate inflows from development assistance.

[40] Through transfer pricing, a company seeks to minimize income and maximize deductible expenditures in high tax jurisdictions and vice-versa in low jurisdictions. An example of transfer pricing includes the sale of export proceeds at below market-prices to an affiliated company located in a low-tax jurisdiction. An example of expenditure deduction includes claiming excessive management fees, consultancy charges and deductions for headquarter costs.

[41] Royalties are either specific levies based on the volume of mineral extracted or *ad valorem* levies, based on the value of minerals extracted.

[42] Oil projects are generally larger than mining projects and therefore have higher associated rents. Oil companies (OPEC countries) also have a better ability to prevent large fall in prices over time, as opposed to mining companies who have no control over the market. It therefore affects their level of commercial risks and hence their profitability (and rents). Gas companies have an added difficulty, as they need to commercialise the gas. It therefore involved long-term supplier agreements for produced gas, negotiated before the development of the project. They also have associated investments, requiring downstream facilities such as pipelines and liquefied plants. Rents are therefore lower than oil companies.

Estimates show that over the 39 years period, from 1970 to 2008, Africa lost the astronomical sum of US$ 854 billion in cumulative capital flight[43]. Enough to wipe out the region's outstanding debt of US$ 250 billion and potentially leaving US$ 600 billion for poverty alleviation and other development priorities.

Trade mispricing[44] accounted for an average of 54.7% of cumulative capital flight from developing countries, equivalent to US $460 billion. Estimates suggest that for Sub Saharan Africa alone, almost US$27 billion shifted illicitly between 2005 and 2007 as a result of mispriced trade[45]. However, the extractive sector is only the tip of the iceberg, accounting for less than 30% of global mispricing in all cases[46]. But given the importance of extractive industries in Africa, it is worth considering the need to address this to ensure that all the "holes in the pipe" are closed.

In addition, the impact of capital flight drains currency reserves from the continent and reduces revenue collection necessary to raise living standards, finance large infrastructure gaps, bridge the digital divide and finance long term, sustainable development programmes.

It is important to make the distinction between tax evasion, which is illegal and tax avoidance, which is, to some extend, legal. The distinction is often hard to make in practice and to measure because it depends on the tax codes of individual countries' jurisdiction. There are two main vehicles for tax evasion:

1. *Transfer mispricing*, i.e. when trade[47] within the multinational is manipulated to shift profits between subsidiaries.
2. *False invoicing*, i.e. when an importer or an exporter gives a false value to goods being traded in order to avoid paying taxes.

In addition, tax havens are often used as a mechanism for tax avoidance. Most multinationals have created subsidiaries in countries where they operate, generally for fiscal and regulatory purposes. But they have also created non-operational subsidiaries to benefit from favourable tax conditions offered by some jurisdictions that apply zero or close to zero tax rates. Investments are therefore often routed via these tax havens for obvious reasons of increasing (after tax) profitability. In addition, by providing for banking secrecy, it is very difficult to trace money flows.

Addressing these issues have proved to be particularly difficult, in particular as multinationals use creative accounting mechanisms and that tax havens are hard to tackle. Despite G20 commitments and OECD monitoring, there is still no internationally binding legal framework to prevent multinational from abusing such mechanisms.

The recent Transparency and Accounting Directives from the EC is only a first step hopefully in the right direction, as countries will have to report on a country-by-country level and project-by-project level on what they pay. To what extent this will allow countries to detect abuses however remains to

[43] Just for the period 2000-2008, the cumulative flows were estimated at $ 437 billion. It comprises about 3% of illicit flows from corruption, bribery and theft out of government coffers; about 30 – 35% of criminal proceeds, due to drug trafficking and counterfeiting and about 60 - 65% of commercial tax evasion due to transfer mispricing, tax havens, secrecy jurisdiction etc. See Kar and Freitas (2011).

[44] Trade mispricing involves the manipulation of trade across borders in order to shift capital from one jurisdiction to another.

[45] See EURODAD (2011): Exposing the lost billions: How financial transparency by multinationals on a country by country basis can aid development.

[46] Machinery instruments and manufactures appear to be much more significant at the global level.

[47] According to OECD and AfDB (2010), 40 – 60% of world trade occurs between related companies.

be seen. In addition, it does not provide any mechanisms to combat tax avoidance and therefore would need to go a step further, by asking companies to publish their intra-firm accounts at a disaggregated level. But that is another battlefield, which is far from being won, given strong financial interests at stake.

As this issue may never be resolved at the international level, African countries therefore will have to take the initiative in their own financial legislations to minimise the risk of such abuses. This requires tight cooperation with other stakeholders, including with the companies and the so-called tax havens themselves. Hence, this is likely to be a tough game.

4.5. Managing extractive resources

Mobilising revenue from extractive industries is important, but the next fundamental question is on what do governments *spend* and what measures should be taken to *save* part of the revenue generated by extractive resources for the future. It is particularly important to control the rate of expenditure during commodity booms and windfall gains in order to mitigate the impact of revenue dips during darker periods. Savings would also help prepare for the time when the country will run out of resources.

The whole challenge of managing resources is therefore about finding the right balance to reconcile competing claims for revenues from extractive industries with longer-term objectives of sustainable development and stabilisation goals. It needs institutions that have a good understanding of the need to restrain public spending and to avoid volatile expenditure patterns.

Broadly speaking, there are three ways, complementary to each other, to ensure that revenues in the purse do not end up being a curse.

1. Countries should be careful not to fall into the trap of euphoric *consumptive* investment (short term investments, generally through expansionary policies) but rather promote *productive* investments (in the diversification of economic sectors, in investment in health and education systems etc). Spending needs to be combined with prudent budgeting, transparent expenditure programmes and public accountability. This aspect is linked to governance and economic reforms mentioned above and the need to involve private sector in development discussions.
2. Potentially creating *savings funds*. Because of the non-renewable nature of extractive resources, countries need to save part of their revenue to ensure longer-term fiscal sustainability. In years of commodity price slumps, the fund can top up the budget. This was the case in Norway for instance. Saving funds also provide for *inter-generational equity*. Savings fund can serve various other purposes, including as a means to leverage funds to finance infrastructure, industrial and development projects at large.
3. Finally, *transferring part of their revenues to their citizens* during boom periods (through decentralisation processes), possibly in the form of direct transfers to communities for health and education purposes for instance. This would help partly reduce pressure from explosive spending and would trickle down to the citizens.[48]

[48] Mining companies raised these issues during the 1st meeting of the Extractive Industry Development Forum jointly organised by ECDPM and the Canada-EU Mining Council (CEUMC) on 18 November 2011 in Brussels. See ECDPM (2011).

5. Securing the nest eggs: taking all partners to the table

5.1. Extractive industries in development: can it work?

The role of extractive industries, in particular the large ones, is important in a strategy of economic transformation. The special nature of some mineral resources[49] has unfortunately left little room for the development of a well-diversified industrial tissue, based on value addition or beneficiation activities. In most cases, there have been little linkages with the rest of the economy, leaving countries with a heavy reliance on exports of unprocessed products.

Engaging large private sector actors is therefore essential, in particular because they have the potential to generate new growth poles (within and around extractive industries), foster entrepreneurship and generate job creation, by, *inter alia*:

1. Creating linkages within and outside of the extractive sectors;
2. Involving small scale industries and local communities;
3. Providing on-the-job training and capacity building; and
4. Transferring technical know-how and technology.

Beyond linking extractive industries with the rest of the economy, the location-specific nature of the industries calls for a greater engagement with the local community as part of the latter's responsibility to contribute to the social and economic development of the country both as a way to obtain and retain their social license to operate, but also because there are business benefits to be gained.

There are *four distinct levels* at which extractive industries generally interact and therefore potentially contribute to the promotion of social and economic development at the level of local communities and more broadly at the national level:

1. At the *national level*, they pay taxes and other fees to the central government. Depending on their interests at stake, they can be a powerful collective body of influence and power.
2. At the *local government level*, individual companies have strong relationships with the local administration to which they also often pay a tax destined for local community development and usually administered by local authorities. The degree of involvement in the management of this fund varies from country to country.
3. At the *mine level*, companies are involved in corporate social responsibility (CSR) programmes supported by their own funds and managed by their own staff.
4. At the *community level*, their operations often have a direct bearing on the lives of the communities as well as on the surrounding environment. Some companies are therefore involved directly (often as part of their CSR) with the communities through community development projects, the financing of infrastructure projects or activities to enhance local entrepreneurship.

Local non-governmental organisations and international watchdog organisations have often reported rather critically of mining companies to purposefully work for the benefit of the local communities. They

[49] In the case of metals, there is scope to develop an industry around the extractive sector, since there are scope for transformation and value-added industries. In the case of fossil fuels, the level of transformation is minimal (from crude to refined products in the case of petroleum or the setting up of an LNG plant in the case of gas), but there is scope to develop side linkages.

have equally often pointed at the likely conflict of interests that industries' actions might generate or to the non-development nature of the projects.

But there can be no meaningful development without the contribution of the companies that operate in resource-rich countries. It is therefore crucial for public authorities and the private sector to engage regularly and constructively to tackle collective action problems, address negative externalities, promote transparency and domestic resource mobilisation, etc. This goes beyond the classic company and project based CSR initiatives and has the potential of creating real public-private partnership and multi-stakeholder coordination and cooperation for more systemic changes and development outcomes.

Working more closely with the private sector requires coordinated efforts. Projects have to be defined collectively and there needs to be a management and maintenance system in place within the community to ensure that projects continue to have a life of their own once the industries pass them on to the community.

5.2. The development community: A new day has come…

Paradoxically, many resource-rich countries, despite what they can generate out of their own resources, still rely in varying degrees on aid finance from their development partners. In many countries, donors have engaged in budget support modalities both with the objectives of contributing to strengthening core state functions (such as public finance management systems) and improving the delivery of public goods that can contribute to inclusive and sustainable development.

With recent oil and gas and minerals discoveries in many parts of Africa and the improved financial management in front-running reforming countries, the future availability of substantial revenue from extractive industries is expected to significantly reduce the dependency of resource-rich countries on aid finance. It is therefore likely to modify profoundly the economic and political relationships donors and development partners entertain. In particular, the role of development partners in financing social and economic sectors is expected to diminish over time, and so will their leverage for promoting policy and institutional reforms.

Many countries might evolve from a state of *aid dependency* to a state of *resource dependency*, without necessarily having had the time to adapt and strengthen their institutions in order to manage and channel the resources into transformative socio-economic activities. Therefore, while financial support might become less relevant over time, *soft support* in the form of institutional strengthening, improved governance, or capacity building in contract negotiations is likely to become more important.

Similarly, the nature of engagement of the development community is expected to change significantly. Some are already nervous about the potential political implications of their reduced operational support. It is widely acknowledged that any future engagement will require a fundamental paradigm shift in the mindset of both the development community and resource-rich countries. On donor's side, it will require shifting focus from the traditional aid agenda that often came with conditions attached to link performance to disbursement, towards one that is more qualitative and more partnership driven. In this new type of relationship, there is likely to be less policy space for "influence" and the outcome will depend on donors' own political and economic motives for continued cooperation and on the partners' political will to do so. On the side of the resource-rich country, it will require assuming fully the role of an equal partner, with all the challenges and opportunities that this

will entail. Besides, public-private cooperation and partnerships are likely to become a more common form of engagement, including innovative financing for development, notably in infrastructures.

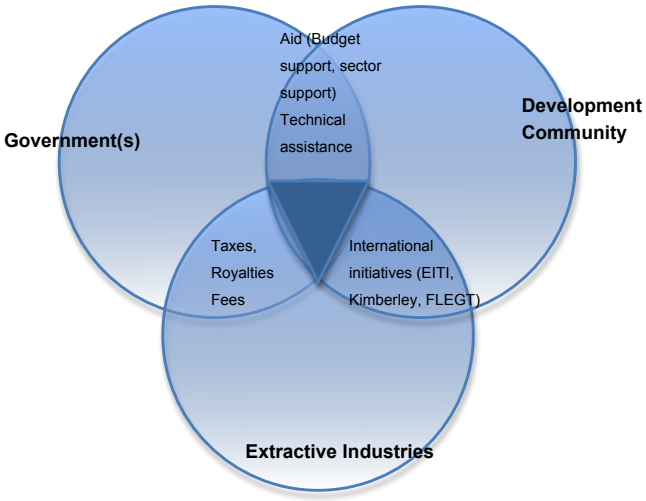
5.3. The golden triangle: Engaging the development community, the private sector and governments in the debate

For the time being, there is generally little coherence, coordination and alignment among what extractive industries attempt to do for community development, with what the donors and what the government identifies as priorities at the national or sub-national level.

As portrayed in Figure 9, bilateral relationships between each stakeholder is generally rather clear. For instance, the extractive industry pays taxes, royalties and other fees to the government (at different levels) and the relationship between the government and the development community often revolves around development support such as bilateral/ multilateral aid or cooperation. The development community rarely interacts with the extractive sector, at least at the domestic level, but many industries support multilateral initiatives such as EITI or the Kimberley process.

Interestingly, some extractive companies are eager to get a better understanding of the institutions and dynamics at the national and local level that affect the outcome of their community development projects with a view to achieving a more efficient development outcome. On its side, part of the development community has been increasingly interested in capturing valuable lessons in public-private partnerships and multi-stakeholder coordination and cooperation for more systemic changes and development outcomes.

Figure 9: Relationship among government, the development community and extractive industries



While it is important to strengthen the relationship between the different actors on a bilateral basis, on a more pragmatic sense, synergies (or levers) and interaction among the extractive industries, the development community and the governments (at all levels) should therefore be sought. There is no doubt that all three stakeholders have converging interests in terms of meeting the same development goals. In this regard, it is important to foster a constructive debate and encourage them to combine

their expertise and value added to contribute meaningfully to achieve the agreed goal. This could include working together to finance large projects such as infrastructure, industrial or spatial development initiatives.

6. Towards a positive agenda

Manny African countries are facing a new era of economic prospects, in part thanks to new opportunities brought about by new mineral discoveries and the ensuing windfall revenues. The new path will have to be sustained if countries want to deliver on development outcomes. This will require bold policy measures – diversifying away from over-dependence, choices of economic and industrial policies, fiscal management and institutional strengthening, to name but a few. But breaking the spell also requires strong political will and how much risks political leaders are prepared to take to go against the tide for the benefit of overall economic development.

A lot of attention has been placed on overcoming to negative economic and political externalities linked to extractive resources, which is key to ensure improved results in the future. However, there is great untapped potential to move a step beyond, to understand the converging interests that emanate from consistent and coherent interaction between the private sector, the development community and the government.

There are opportunities and margins for manoeuvre to *work with the grain* and engage the development community, governments and extractive industries to work together. In this context, ECDPM will play a role in stimulating multi stakeholder dialogues and understanding on these questions building on lessons and good practices from what has worked in specific areas.

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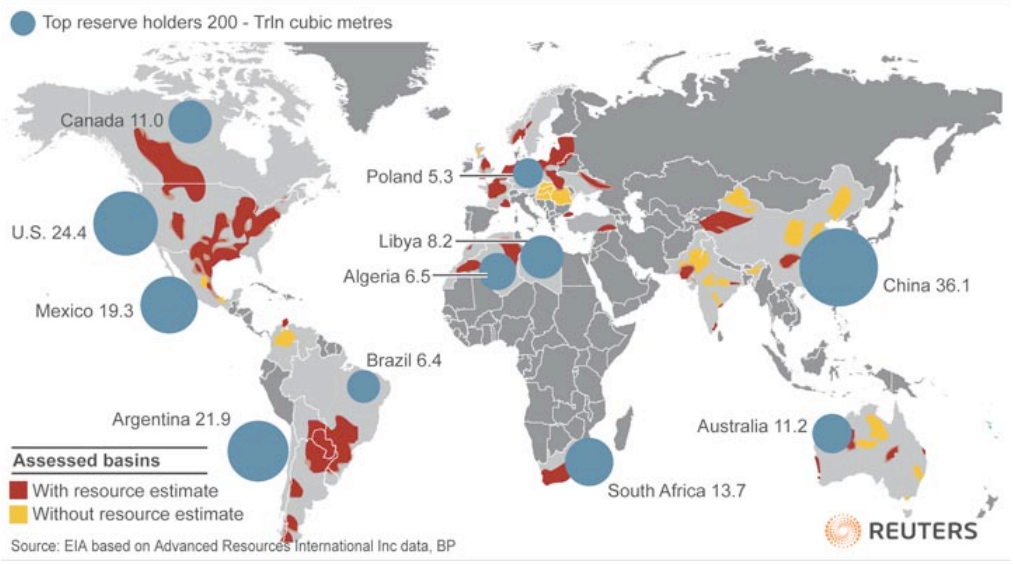
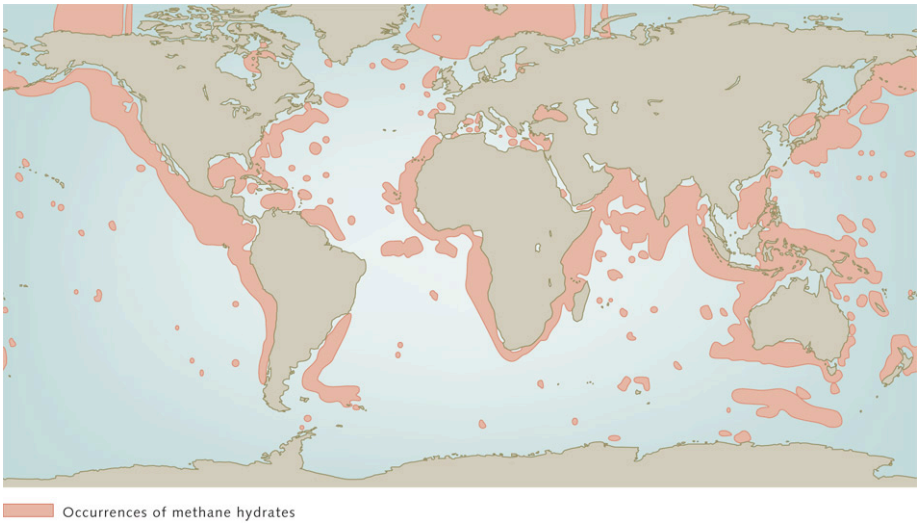
Annex

Figure A1: Unconventional energy reserves: Shale gas top reserve holders, 2011



Source: Reuters, Forbes, www.forbes.com/sites/kenrapoza/2012/02/13/china-closer-to-joining-shale-gas-fracking-craze/

Figure A2: Energy from ice



Source: http://worldoceanreview.com/en/energy/methane-hydrates/

Table A1: Estimated natural resources deposits in selected African countries

Country	Strategic and critical raw materials	Other raw materials	Petroleum and natural gas
Angola	Nickel, copper, iron, zinc gypsum, manganese, silver, ***cobalt, tungsten***, vanadium, ***beryllium***, aluminium	Diamonds, gold, uranium, lead, Phosphate, granite, marble, salt, lignite, mica, peat, quartz	Crude petroleum, natural gas
Botswana	Copper, nickel, ***cobalt, PGM, graphite,*** zinc, feldspar, gypsum, iron, manganese	Coal, soda ash, salt, diamond, gold, semi precious gemstones, asbestos, chromite, lead	
Burundi	Nickel, copper, ***cobalt, niobium,*** vanadium, limestone, ***tungsten, tantalum***	Tin, peat, gold, sand, uranium	
Congo DR	Copper, zinc, ***cobalt, tungsten, germanium, tantalum, niobium,*** silver, aluminium, iron	Coal, tin, lead, diamond, gold	Crude petroleum
Congo	Copper, zinc, iron, ***magnesium***	Potash, lead, diamond, gold, lime	Natural gas; liquid petroleum gas; crude petroleum
Cote d'Ivoire	***Cobalt, niobium, tantalum***, nickel, copper, iron, bauxite, manganese, silica sand	Gold, diamond	Natural gas; crude petroleum
Ethiopia	***Niobium, Tantalum,*** feldspar, iron, limestone, gypsum, kaolin, silica sand, silver, diatomite, ***PGMs***	Salt, soda ash, granite, marble, pumice, rhyolite, gold, gemstones, quartz, coal	Petroleum
Gabon	***Niobium***, iron, manganese	Uranium, phosphate, gold, diamond	Crude petroleum, natural gas
Kenya	Iron, ***fluorspar,*** diatomite, gypsum, kaolin, bentonite, feldspar, limestone, aluminium	Lead, soda ash, salt, gemstones, gold, marble, granite	Petroleum refinery products
Madagascar	Aluminium, ***beryllium, tantalum, niobium,*** vanadium, kaolin, **graphite,** limestone, chromium, nickel, bauxite, copper, ***cobalt, titanium***, gypsum, ***PGMs, graphite***	Coal, labradorite, ilmenite, rutile, gemstones, quartz, salt, mica, marble, gold	Crude petroleum, refines petroleum
Mali	Copper, lithium, nickel, iron, chromium, ***titanium, tungsten, niobium,*** bauxite ***PGMs,*** silver, gypsum, manganese, talc	Granite, marble, phosphate, salt, rutile, zircon lead, tin, uranium, thorium, kaolinite, Gold, diamond, semi-precious stones	
Mozambique	Bauxite, iron, ***niobium, tantalum,*** titanium, ***beryllium,*** diatomite, bentonite, aluminium, silver, ***graphite***, copper, limestone	Salt, quartz, marble, rutile, zirconium, ilmenite, gold, coal, gemstones, diamond, coal, granite, uranium	Natural gas
Namibia	Copper, zinc, ***fluorspar,*** manganese, silver,	Salt, granite, marble, sodalite, wollastonite, lead, tin, uranium, tantalite, diamond, gold, gemstones, sulphur, dolomite	
Nigeria	Aluminium, limestone, ***tantalum, niobium,*** copper, zinc, iron, ***tungsten***, barite, kaoline, feldspar, gypsum	Tin, lead, coal, granite, marble, soda ash, talc, zircon, phosphate, rutile, monazite, ilmenite, gold, gemstone, diamond	Crude petroleum, refined petroleum, natural gas
Rwanda	***Tungsten, tantalum, niobium***, nickel	Tin, pozzolana, gold, columbium, gemstones	Natural gas
South Africa	Zinc, bauxite, copper, nickel, iron, chromium, vanadium, titanium, ***cobalt, antimony, fluorspar***, bentonite, feldspar, gypsum, kaolin, silver, talc,	Lead, Coal, phosphate, kyanite, vermiculite, ilmenite, silicon, asbestos mica, rutile, zircon uranium, gold, diamond, gemstone, perlite,	Crude petroleum, natural gas

	limestone, aluminium, manganese, ***PGMs***	salt, sulphur, granite	
Tanzania	Nickel, bauxite, copper, ***cobalt,*** gypsum, silver, limestone	Coal, phosphate, uranium, gemstone, marble, diamond, gold, salt, soda ash, pozzolana	Natural gas
Uganda	Copper, ***cobalt, tungsten, niobium, tantalum,*** iron, gypsum, kaolin, silica sand, ***beryllium,*** limestone	Gold, tin, lead, uranium, salt, vermiculite, pozzolana, marble, soapstone, phosphate	Petroleum
Zambia	Copper, nickel, ***cobalt,*** manganese, feldspar, barite, silver, limestone, zinc, ***magnesium***	Gemstones, diamond, gold, tin, uranium, coal, sulphur, lead	Petroleum refinery products
Zimbabwe	***PGMs,*** silver, nickel, copper, iron, chromium, ***cobalt,*** lithium, feldspar, ***graphite,*** talc, barite, aluminium, ***tungsten, tantalum, niobium***, limestone, kaolin	Gold, diamond, coke, tin, lead, coal, vermiculite, phosphate, kyanite, perlite, mica, sulphur, asbestos	

Source: Table compiled by the author, extracted from US Geological Country Surveys, 2008, 2009, http://minerals.usgs.gov/minerals/pubs/country/africa.html#bc ; British Geological Survey – African Mineral Production 2001-05, www.bgs.ac.uk/downloads/start.cfm?id=1390

Table A2: Main producers of natural resources

Natural Resources	Top world producers	Share in world production (%)	Main EU import source	Share in EU imports (%)
1. Antimony *(EU dependency on imports: 100%)*	*In 2009:* 1. China 2. Bolivia 3. Russia 4. ***South Africa***	 91.2% 2.4% 1.6% ***1.6%***	*In 2007*: 1. Bolivia 2. China 3. Peru	 76.8% 15.4% 6.1%
2. Beryllium *(EU dependency on imports: 100%)*	*In 2009:* 1. USA 2. China ***3. Mozambique***	 85.1% 14.2% ***0.7%***	Trading partners vary from year to year and include USA, China, Brazil and Canada.	
3. Cobalt *(EU dependency on imports: 100%)*	*In 2008:* ***1. DR Congo*** 2. Canada ***3. Zambia*** ***Other African producers*:*** *Uganda* *Botswana* *South Africa* *Zimbabwe*	 ***40.8%*** 11.3% ***9.1%*** ***In 2008**** *1.0%* *0.51%* *0.34%* *0.04%*	*In 2007:* ***1. DR Congo*** 2. Russia ***3. Tanzania***	 ***70.3%*** 19.1% ***5%***
4. Fluorspar *(EU dependency on imports: 69%)*	*In 2009:* 1. China 2. Mexico 3. Mongolia ***4. South Africa*** *Kenya* *Namibia*	 59% 18% 6% ***3.5%*** *2.14%* *1.94%*	*In 2007:* 1. China ***2. South Africa*** 3. Mexico ***4. Namibia*** ***5. Kenya***	 27% ***25%*** 24% ***15.7%*** ***6.1%***
5. Gallium *(EU dependency on imports: large changes in statistics in different years)*	*In 2010:** 1. China 2. EU 3. Japan	 75% 12.5% 12.5%	Trading partners vary from year to year and include USA, China and Russia.	
6. Germanium *(EU dependency on imports: 100%)*	*In 2009:* 1. China 2. Russia 3. USA	 71.6% 3.6% 3.3%	*In 2007:* 1. China 2. USA 3. Hong-Kong	 72.3% 18.6% 7.1%
7. Graphite *(EU dependency on imports: 95%)*	*In 2008:* 1. China 2. India 3. Brazil ***Other African producers*:*** *Zimbabwe* *Madagascar*	 72.3% 12.5% 6.9% ***In 2008*:*** *0.6%* *0.44%*	*In 2007:* 1. China 2. Brazil ***3. Madagascar*** 4. Canada	 74.1% 7.7% ***3%*** 3%
8. Indium *(EU dependency on imports: 100%)*	*In 2008:* 1. China 2. Japan 3. Korea 4. Canada	 58.1% 10.6% 8.8% 8.8%	*In 2006:* 1. China 2. Hong Kong 3. USA 4. Singapore	 81.3% 4.0% 3.8% 3.8%
9. Magnesium *(EU dependency on imports: 100%)*	*In 2009:* 1. China 2. Turkey 3. Russia	 56.1% 12.0% 7.0%	*In 2006:* 1. China 2. Israel 3. Norway 4. Russia	 81.5% 9% 3% 3.1%
10. Niobium *(EU dependency on*	*In 2009:* 1. Brazil	 92.4%	*In 2006:* 1. Brazil	 84.1%

imports: 100%)	2. Canada	7.0%	2. Canada	15.8%
11.PGMs *(EU dependency on imports: 100%)*	*Only Platinum, 2009:* ***1. South Africa*** 2. Russia ***3. Zimbabwe*** ***Other African producers*:*** *Botswana* *Ethiopia*	 ***78.7%*** 11.2% ***3.4%*** ***In 2008*:*** *0.1%* *< 0.01%*	*In 2006:* ***1. South Africa*** 2. Russia 3. Norway	 ***60%*** 32% 4%
12. Rare Earths *(EU dependency on imports: 100%)*	*In 2009:* 1. China 2. India 3. Brazil	 97% 2.2% 0.5%	*In 2007:* 1. China 2. Russia 3. Kazakhstan	 89.7% 9.2% 0.6%
13. Tantalum *(EU dependency on imports: 100%)*	*In 2009:* 1. Australia 2. Brazil ***3. Rwanda*** ***4. DR Congo*** ***Other African producers*:*** *Mozambique* *Ethiopia* *Nigeria* *Burundi*	 48.3% 15.5% ***8.6%*** ***8.6%*** ***In 2008*:*** *Data n/a for Tantalum only*	*In 2007:* 1. China 2. Japan 3. Kazakhstan	 46% 40% 14%
14. Tungsten	*In 2008:* 1. China 2. Russia 3. Canada ***Other African producers*:*** *Rwanda* *DR Congo* *Uganda*	 77.8% 5.4% 4.1% ***In 2008*:*** *2.4%* *0.6%* *0.12%*	*In 2006:* 1. Russia ***2. Rwanda*** 3. Bolivia	 75.6% ***13%*** 6.6%

Source: Table compiled by the author, extracted from EC (2010): "Critical Raw Materials for the EU: Report of the Ad-Hoc working group on defining critical raw materials". For data marked with an (*), source: World Mining Data 2010.

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

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.

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