

## Domestic revenue mobilization in natural resource-rich developing countries: Guidance for EU delegations

Author: Grégoire Rota-Graziosi, CERDI-CNRS-UCA

**MACRO HELPDESK INTPA**

**Policy Brief<sup>1</sup> – 06/2023**

*Summary: This policy brief provides guidance to EU delegations on how to best support Domestic Revenue Mobilization (DRM) in natural resource-rich partner countries. It apprehends the respective role of the main actors (international, regional, national, public, and private organizations) on this topic with a special attention to the Extractive Industry Transparency Initiative (EITI). The note stresses also the main tax issues and provides some solutions. It concludes with some guidelines on a potential strategy for the EU delegations in their dialogue with the authorities of their countries and proposes some related SMART indicators. The mining production in Zambia and the Democratic Republic of Congo (DRC) will illustrate this policy note as case-studies.*

### 1. INTRODUCTION

This note aims at informing the EU Delegations on the main issues regarding Domestic Revenue Mobilization (DRM) in natural resource rich countries, at identifying key players on each main topic, and at providing some guidelines in their dialogue with the authorities.

The extractive industry is a prominent sector and potentially significant revenue base for some developing and emerging countries. State intervention in the resources sector is a sensitive issue, especially in resource rich developing countries. It may take several forms: Direct and indirect ownership, management and control of national resource companies, licenses allocations, contract negotiations, taxation, and regulation. These forms of control over the extractive industry are mainly complementary. For instance, taxation may reinforce the State capacity to regulate private and public mining or petroleum companies.

State ownership can be complete equivalent to government (quasi)-monopole of natural resources (Saudi Aramco in Saudi Arabia, Gecamine in DRC), majority control (Petrobras in Brazil, Statoil in Norway, Debswana in Botswana, ZCCM in Zambia), or even minority.<sup>2</sup>

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<sup>1</sup> This policy brief has been prepared at the request and exclusive use of the EU Commission DG INTPA. The information and views set out are those of the author and do not necessarily reflect the official opinion of the EU Commission.

<sup>2</sup> SOEs' contributions are particularly important in DRC equal to 24.8 percent of total revenue (see Table 3).

Minority shareholding concerns many developing countries that grant mining exploitation licenses in exchange of free equity in mining companies' capital (10 to 20 percent).

Regulation and taxation are often complementary instruments. Taxation can also be a substitute to State-ownership: The lower is the State ownership of extractive industry, the more important are taxes to capture a fair share of the rent. Regulation concerns private and public firms. There is a risk of competition between the regulatory authority and the Ministry of Finance (MoF) that may translate into the proliferation of quasi-taxes or fees ("parafiscalité") and multiple tax exemptions. This competition or miscoordination explains an apparent paradox: Profit tax exemptions and special fees or quasi-taxes paid to some special funds or authorities.<sup>3</sup> Profit tax is neutral and efficient while fees and quasi-taxes are generally poorly designed and then highly distortive. Such quasi-taxes were so numerous in DRC that this country has a third administration<sup>4</sup> in charge of non-tax revenue collection besides the tax and customs administrations.

There is no optimal level of State ownership in the natural resource sector. State-Owned Enterprises (SOEs) may be less performant than Multinational Enterprises (MNEs) to exploit the natural resource deposit, while the fiscal contribution of MNEs may be extremely weak. In presence of public (quasi-)monopole, the regulatory authority is crucial to maintain an environment with some competitive pressures (the tax instrument is useless). The tax regime becomes crucial when extractive industry is mainly privately organized.

The rest of the note is organized as following: Section 2 presents the main principles guiding the definition of an optimal extractive tax systems in natural resource rich developing countries; Section 3 reviews the main organizations and institutions involved on this issue; Section 4 develops the central issue of aggressive tax planning and provides some solutions; Finally, Section 5 concludes and presents some recommendations, their priority, and potential related SMART<sup>5</sup> indicators.

## **2. PRINCIPLES TO DESIGN EXTRACTIVE TAX SYSTEMS**

The main characteristics of the extractive industries, that determine their fiscal regimes are: Potentially important rents that are an attractive taxable base; High irreversible investments that induce a time inconsistency problem in the tax regime;<sup>6</sup> The important role of MNEs that may develop complex tax planning strategies to reduce their tax payment; and exhaustibility of natural resources that provides a dynamic dimension of the tax regime. There is a clear difference in the fiscal treatment of oil and gas industry and mining industry. In the former,

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<sup>3</sup> This issue is not restricted to the extractive industry. For instance, telecommunication authorities raise quasi-tax based on mobile network operators' turnovers.

<sup>4</sup> The DGRAD (Direction Générale des Recettes Administratives, Judiciaires, Domaniales Et De Participations) is in charge of collecting fees and quasi-taxes raised by the sectoral ministries. This administration is under MoF's control and then can be viewed as rationalization of quasi-taxes.

<sup>5</sup> SMART: Specific, Measurable, Achievable and Attributable, Relevant, Timely

<sup>6</sup> Investments in extractive industry are physically tied to natural resource deposit (that is less true for oil rigs). This link induces investments' irreversibility: Their cost cannot be recovered once investments are done. Firms are then exposed to the risk of 'hold-up' or time inconsistency: Once they have invested, they may be expropriated partly (or fully) through an increase in taxation (or nationalization). Anticipating this risk, firms invest less (or not at all). Stability clauses are the main legal device that limits the capacity of government to expropriate investors and solves the time inconsistency issue.

SOEs control almost 80 percent of global oil reserves and 60 percent of oil production. In contrast, for some minerals (gold, cobalt, tin, and tantalum), artisanal and small-scale mining may represent 25 percent of total production.

Given these characteristics an adequate fiscal regime for the extractive industries is a reply to several trade-offs such as: Attracting foreign or domestic direct investments and securing a fair share of the rent to the government, reconciling transparency and confidentiality, or being efficient or neutral<sup>7</sup> and simple to enforce. Its design should follow several principles: Transparency, simplicity, neutrality, and progressivity. These principles may reinforce each other but also run counter to each other involving some trade-offs. For instance, a neutral tax system may be very complex to administer.

## **2.a Transparency**

**Transparency** is an essential prerequisite for any effective and efficient fiscal regime. Without transparency special tax agreements may be concluded between the investors and the government. It would be then particularly difficult (if not impossible) for the EU Delegation to build some credible indicators related to the extractive industry fiscal regime. For developing countries, transparency is not only a simple way to reduce the risk of corruption and the information deficit between those in power and the people they govern, but it can be also an industrial policy instrument that allows to distinguish between MNEs operating in their territory. Transparency is then a self-selection tool that filters out MNEs with the most aggressive strategies in tax and other areas, such as environment and working conditions, since they are not subject to the same level of disclosure in their country of origin (i.e. where their headquarters are located). In other words, a Canadian firm would be always unambiguously more transparent than a Swiss one even if Canadian and Swiss companies may be prosecuted and convicted together for tax fraud (see the case of Glencore-First Quantum Minerals vs Zambia).<sup>8</sup>

## **2.b Simplicity and neutrality**

The principles of **simplicity and neutrality** are determining in the effectiveness of the tax system, that means the definition of the tax regime and its enforcement. Indeed, since the development of the optimal tax theory (see Diamond and Mirrlees, 1971) tax policy has been mainly designed under the assumption of perfect revenue administration. This work impacted and continues to impact Technical Assistance (TA) recommendations in tax policy. For instance, it is thus preferable to rely on a tax on profit like Corporate Income Tax (CIT) or a tax on rent like Resource Rent Tax rather than a tax on capital goods such as customs duties or a tax on turnover such as mining royalties. Taxing profit is more neutral or equivalently less distortionary: It does not modify the behaviors of investors, consumers, laborers, and savers. Similarly, a tax on rent could be theoretically raised at 100 percent without disincentivize investments.

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<sup>7</sup> The neutrality means that taxation does no distort investment decision. A tax on capital such as customs duties would reduce investment in capital goods, while a tax on labor would favor more capital-intensive investment.

<sup>8</sup> See <https://www.oecd.org/countries/zambia/building-capacity-to-prevent-profit-shifting-by-large-companies-in-zambia.pdf>

However, the compliance and administration costs are not identical across taxes. The simplicity principle considers the limited capacity of any tax administration in the design of tax policy.<sup>9</sup> Integrating explicitly tax avoidance, evasion, and imperfect enforcement is quite recent in the design of tax policies (see for instance: Slemrod and Gillitzer, 2014) and may modify significantly previous TA recommendations. For instance, import duties on capital goods are easier to administer than CIT. Simplicity and neutrality principles induce then another trade-off whose outcome varies across countries depending on their respective administrative capacity. This capacity may be improved with the support of partners such as the EU Commission through investment in capital such as Information Technologies (e.g. datamining, trackers...), human resources (e.g. training), and political backing.

Simplicity in the law increases transparency. Furthermore, it improves also the business climate by avoiding different interpretations by investors and the government concerned. Finally, it reduces the administration costs of the tax system, regardless of whether they are borne by the administrative authorities or by the businesses themselves (i.e. the costs of submitting tax returns).

The principle of simplicity also imposes a rational organization of the state administrative authorities. For reasons associated with task specialization or the history of the country, the administration of the extractive industry may be split between several ministries, such as the ministry of finance, the ministry of mines, the land registry, and so on. This fragmentation of services generates not only a duplication of costs for the State, but also multiple risks of corruption.<sup>10</sup> It has also a negative impact on transparency and good governance in the sector, exposing investors to contradictory public information.

An important instrument of simplification is ‘ring-fencing’ that limits the capacity of mining or oil MNEs to own several licenses. This restriction reduces the risks of CIT avoidance between two mining or oil projects at different stages of development. It becomes easier for the tax authorities to check the activities and taxable profits associated with each operating permit.<sup>11</sup> Ring-fencing can even mean that the holder of an operating permit is not allowed to hold an exploration permit in addition to their current operating license. Extractive companies are therefore forced to create another legal entity for their exploration activity.

Ring-fencing is also a way to limit a widespread tax fraud resulting from exemption scheme. Exemptions from VAT or import duties are generally granted to holders of research or operating permits in the development phase, in order to reduce the cost of capital and attract Foreign Direct Investment (FDI). Exemptions or rate reductions of this kind can lead to fraudulent behavior by diverting imported goods from their initial intended use, namely mining exploration or operations. Ring-fencing thus consists of excluding economic operators in other

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<sup>9</sup> All tax administrations or revenue authorities have a limited budget and consequently a limited capacity to enforce tax laws. For instance, the adoption of digital services tax in Austria, France, Italy, Spain, and UK in 2020 (before the implementation of Globe Pillar 1) equivalent to a turnover tax expressed the limited capacity of corresponding tax administrations to capture actual profits done by the GAFAM enterprises.

<sup>10</sup> For instance, the IMF identified the licensing process as a critical vulnerability for corruptions in its 2022 Zambia Country Governance and Corruption Assessment: <https://www.imf.org/en/Publications/CR/Issues/2023/01/09/Zambia-Technical-Assistance-Report-Diagnostic-Report-on-Governance-and-Corruption-527982>

<sup>11</sup> With several exploitation licenses at different stages of development, the firm could reduce taxable profit from one producing mine by deducting the development costs of another mine under construction.

areas of activity from holding exploration or operating permits, or imposing the requirement to create a company dedicated to the activity that is correctly identified with the tax authorities.

## 2.c Progressivity

The principle of **progressivity** means that the share taken by the government increases automatically in the profitability of the mining or oil project. It involves also that the government agrees to reduce its share of the rent when the project's profitability decreases. Progressivity displays several advantages: (i) It allows the State to take a larger share, when the world price of commodity increases significantly; (ii) It avoids difficult contract renegotiations and related political issues; (iii) It reduces the risk for the investor by decreasing tax pressure when the profitability is low; and (iv) By reducing the risk for the investor, it reduces the level of required profitability for the investor<sup>12</sup> and it increases taxable income. These advantages improve the stability of the tax system and the predictability way for both parties.

However, progressivity is particularly difficult to implement. It assumes that the profitability assessment of a mining or petroleum project is known and shared between investors and government. This is particularly difficult to establish and requires a tax administration and a legal framework that are able to apprehend aggressive tax planning. Finally, a progressive tax system also indicates that the state is willing to accept part of the risk of the investment. An optimal level of progressiveness induces a tradeoff similar to the choice made by any investor between expected gain (the share of rent paid to the State) and risk associated with this gain. Any tax regime will be more or less progressive, based on the combination of applied tax instruments (cf. Table 1). For instance, customs duties are quite simple to assess and collect. But, they increase the cost of imported equipment and inputs and consequently production costs whatever is the level of profitability of the resource project. Thus, customs duties are regressive. The same logic applies to area tax. By contrast, CIT is a more progressive tax since it increases in the profitability of the project. But, CIT is complex and requires strong capacity in assessing taxable profit especially when MNEs adopt some tax planning strategies.

**Table 1: Characteristics of the main tax instruments**

	Simple	Progressive
Customs duties	1	5
Area tax	1	5
Royalties	2	4
Export tax	2	3
Progressive royalties	3	2
CIT	4	2
Windfall tax	4	2
Resource rent tax	5	1

1: Very simple/progressive

5: Very complex/regressive

<sup>12</sup> This point refers to the classic relationship in finance between risk and return of an investment.



## 2.d Fiscal regimes

Fiscal regimes of the extractive industry have one of the two following forms: **Contractual schemes** and **concession regimes** also described as “tax and royalty” regimes. Contract regimes are common in the oil and gas industry, less in mining. They encompass two categories: Production Sharing Contracts (PSCs) and risk service contract. Under PSCs the investor receives a royalty on gross production called “cost oil” to cover investment and production cost and the net production is shared between the State and the investor following a formula. The investor is usually also taxed under CIT. Under a risk service contract, natural resources (oil and gas) belong to the State that pays a fee to the investors for the exploration and production services. The fee covers investment and production costs and may be taxed under CIT. The concession regime concerns more the mining activity. It combines mining and area royalties, CIT, and potentially free equity. It will be studied more in details in the next section.

Theoretically both regimes could be equivalent in terms of revenue for the government. However, they differ significantly in the role and identity of stakeholders. Under the concession regime, the MoF and the Ministry in charge of natural resources (MoM or MoP) define taxes and other parameters applied to the extractive industry. Contract regimes involve the creation of a SOE that will be in charge of commercializing the government share of extracted resources. This third actor requires additional supervisory and monitoring capacity through a regulatory authority and both of them have to interact also with the two previous Ministries. Consequently, the administration of natural resource sector is more fragmented and complex. This may reduce transparency and increases the risk of corruption.

## 3. WHO DOES WHAT IN DRM IN NATURAL RESOURCE RICH DEVELOPING COUNTRIES?

Table 2 presents the main stakeholders that can assist developing countries or provide information regarding DRM in the extractive industry.<sup>13</sup> As previously explained, transparency of this sector is the first priority. The Extractive Industries Transparency Initiative (EITI) is a critical actor for the promotion of transparency. Thus, being compliant to EITI is a first and indispensable step. The EITI compares the income statements of the firms operating in the extractive industry with reported revenues received by the government from these firms. The EITI associates firms, government, and the civil society. The disclosure process that is promoted reduces the risk of corruption. It also fosters public debate and reinforces the role of civil society.

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<sup>13</sup> Beyond DRM issues, some institutions provide also TA for legal and regulatory reforms (for instance, Extractives Global Programmatic Support from World Bank) or for contracts’ negotiation (e.g. Connex: A G7 initiative implemented by GIZ).

**Table 2: Main stakeholders in DRM**

Institution/Organization		Scope	Support	DRC	Zambia	EU financial support	Link
<b>Governance, transparency</b>							
EITI	Extractive Industry Transparency Initiative	Transparency, data		Yes	Yes	Yes	<a href="https://eiti.org/">https://eiti.org/</a>
GOXI	Governance of Extractive Industries	Hub, platform				No	<a href="https://goxi.org/">https://goxi.org/</a>
IGF	Intergovernmental Forum on Mining, Minerals Metals and Sustainable Development	Governance, Tax base erosion and profit shifting	Canada, OCDE			Yes	<a href="https://www.igfmining.org">https://www.igfmining.org</a>
	Resource contracts	Data	NRGI, WB	Yes	Yes	No	<a href="https://www.resourcecontracts.org/">https://www.resourcecontracts.org/</a>
Trimble	Cadastral survey and mapping	Data		Yes	Yes		<a href="https://landadmin.trimble.com/cadastre-portals/">https://landadmin.trimble.com/cadastre-portals/</a>
<b>Tax policy and revenue administration</b>							
RMFT	Revenue Mobilization Thematic Fund	Assistance: General tax policy and revenue administration	IMF	Yes	No	Yes	<a href="https://www.imf.org/external/np/ins/english/rmtf.htm">https://www.imf.org/external/np/ins/english/rmtf.htm</a>
MNRW	Managing Natural Resource Wealth Fund	Policy advice, capacity building, and training	IMF	Yes	Yes (2)	Yes	<a href="https://www.imf.org/external/np/ins/english/rmtf.htm">Managing Natural Resource Wealth Thematic Fund (imf.org)</a>
<b>Tax policy</b>							
PCT	Platform for Collaboration on Tax	DRM capacity building, Analytical works	IMF, OECD, UN, WB	No	No	No	<a href="https://www.tax-platform.org/">https://www.tax-platform.org/</a>
GTP	Global tax Program	Assistance: Environmental, health, and gender taxation	WB	No	No	No	<a href="https://www.worldbank.org/en/programs/the-global-tax-program">https://www.worldbank.org/en/programs/the-global-tax-program</a>
FARI	Fiscal Analysis of Resource Industries	Data, simulation, AETR, assistance	IMF	(1)	(1)	Yes	<a href="https://www.imf.org/en/Topics/fiscal-policies/fiscal-analysis-of-resource-industries">https://www.imf.org/en/Topics/fiscal-policies/fiscal-analysis-of-resource-industries</a>
NRGI	Natural Resource Governance Institute	Training, analytical works	USAID, private donors	Yes	No priority	No	<a href="https://resourcegovernance.org/">https://resourcegovernance.org/</a>
FERDI	Fondation pour la Recherche et les Etudes sur le Développement International	Data, simulation, AETR, training		Yes		No	<a href="https://fiscalite-miniére.ferdi.fr/en">https://fiscalite-miniére.ferdi.fr/en</a>
OECD	Base Erosion and Profit Shifting	Assistance: Tax policy	OECD				<a href="https://www.oecd.org/tax/beps/">https://www.oecd.org/tax/beps/</a>
<b>General revenue (tax) administration</b>							
TADAT	Tax Administration and Diagnostic Tool	General assistance	IMF, WB	No	Yes	Yes	<a href="https://www.tadat.org/">https://www.tadat.org/</a>
TIWB	Tax Inspectors without Border	Assistance: Tax audit	OECD, UN	No	Yes	Yes	<a href="http://www.tiwb.org/">http://www.tiwb.org/</a>
AFRITAC	Regional Technical Assistance Centers	General assistance	IMF	Yes	Yes	Yes	
ATAF	Africa Tax Administration Forum	Regional association					<a href="https://www.ataftax.org/fr/home">https://www.ataftax.org/fr/home</a>
IOTA	Intra-European Organization of Tax Administration	Regional association					<a href="https://www.iota-tax.org/isora">https://www.iota-tax.org/isora</a>
CIAT	Inter-American Center of Tax Administration	Regional association					<a href="https://www.ciat.org/">https://www.ciat.org/</a>
<b>Private sector</b>							
	Fraser Institute	Attractiveness index		Yes	Yes	No	<a href="https://www.fraserinstitute.org">https://www.fraserinstitute.org</a>
	National Mining Associations	Hub website					<a href="https://nma.org/about-nma-2/resources/mining-associations-and-organizations/">https://nma.org/about-nma-2/resources/mining-associations-and-organizations/</a>
	World Gold Council						<a href="https://www.gold.org/">https://www.gold.org/</a>
TP-G	Transfer Pricing Guidelines	Database of transfer pricing cases		No	Yes	No	<a href="https://tpguidelines.com">https://tpguidelines.com</a>

1: Yes, upon request.

2: Zambia ended this TA program.

EITI reports provide the most detailed information on received tax and non-tax revenues from the extractive industry. Table 3 displays revenue directly raised from the mining sector in the last published EITI report for DRC and Zambia.<sup>14</sup> Total revenue represents respectively 3.9 percent of GDP in DRC and 3.4 percent in Zambia. The larger share of these revenue relies on taxation in particular: mineral royalties (12 percent of total revenue in DRC and 41 percent in Zambia), CIT (18 percent in DRC and 31 percent in Zambia), and some withholding taxes (11 percent in DRC mainly through payroll tax on expatriates and 7 percent in Zambia).<sup>15</sup> Non-tax revenues is significant in DRC representing 29 percent of total revenue mainly driven by SOEs payments (25 percent). Zambia report provides more details on the various stakeholders besides the ministry of finance: Ministry of mines, ministry of lands, environmental protection fund, local councils, local communities.

Beyond its transparency objective, the EITI provides relevant information for an appreciation of tax regimes. EITI reports allow to compare tax payments and effective tax burden across firms in the same country<sup>16</sup> and they provide also information on the multiple quasi-taxes raised by sectoral ministries or regulatory agencies. By June 2023, the EITI will release its new norm that should consider new areas of disclosure such as capital and operating expenditure costs (capital expenditures, CAPEX, and operational expenditures, OPEX), carbon taxes, greenhouse gas emissions, and subsidies.

Other organizations such as Resource Contracts (<https://www.resourcecontracts.org/>) and Intergovernmental Forum on Mining, Mineral Metals and Sustainable Development (IGF, <https://www.igfmining.org> ) may reinforce the EITI approach (see Table 2). African Union (2009) and (2017) developed a guidebook and a framework to assess the governance of extractive industry in Africa. Alence and Mattes (2016) provide a mineral governance barometer covering Southern Africa including DRC and Zambia. Unfortunately, these works remain one-off despite their initial objective to establish regular country reviews. Finally, we can remark that resource rich developing countries have not been proactive to promote transparency. They did not impose their own allocation procedures or methods for managing their natural resources that could be stricter than the EITI standards, unlike well-advanced countries, such as Canada or Australia.<sup>17</sup> For instance, systematic publication of feasibility studies would help improve transparency in the sector. These documents set out the technical and economic characteristics of mining or petroleum projects and are generally essential for obtaining a mining permit. Publishing them is therefore a requirement for listed companies in Canada or Australia, in order to protect shareholders.<sup>18</sup>

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<sup>14</sup> An assessment of the indirect participation of the extractive industry to countries' revenue would require an original analysis based either on surveys or on input-output matrix. The role of VAT is essential to capture the economic activity of local suppliers.

<sup>15</sup> Withholding taxation is a mechanism that protects the CIT base against aggressive tax planning. It consists in taxing any payment done by the mining firm to a non-resident firms or individuals. This mechanism is however restricted by potential Double Tax Agreements (DTA).

<sup>16</sup> It would be also possible to compare the tax burden of subsidiaries of the same MNEs across countries. Such work remains to be done.

<sup>17</sup> These countries are not EITI compliant.

<sup>18</sup> The Canadian website: <https://www.sedar.com/> provides such information for all listed companies. Feasibility studies commit the liability of company's board of directors toward its shareholders.



**Table 3: Revenue in DRC and Zambia from the mining sector**

Dem. Rep. Of Congo (2017)			Zambia (2019)		
	Million USD	Perc. of total revenue		Million USD	Perc. of total revenue excl. VAT
<b>Tax revenue</b>	<b>1 070</b>	<b>72,0%</b>	<b>Tax revenue</b>	<b>1 131</b>	
Royalties	183	12,3%	<b>Tax revenue excl. VAT</b>	<b>742</b>	<b>93,9%</b>
CIT	270	18,2%	Royalties	325	41,1%
Withholding Taxes	162	10,9%	CIT	248	31,4%
Customs and other import duties	141	9,5%	Withholding Taxes	58	7,3%
Taxes on exports	123	8,3%	Customs and other import duties	93	11,8%
Motor vehicle taxes	0	0,0%	Excise Duty - Electrical Energy	0	0,1%
Property transfer tax	28	1,9%	Domestic Excise	15	1,8%
Taxes on property	11	0,7%	Property Transfer Tax	2	0,3%
Other taxes	151	10,2%	Other taxes	0	0,0%
			VAT	389	
			Import VAT	155	
			Withholding VAT	157	
			VAT	77	
<b>Non tax revenue</b>	<b>415</b>	<b>28,0%</b>	<b>Non tax revenue</b>	<b>49</b>	<b>6,1%</b>
<b>Other ministries</b>	<b>46</b>	<b>3,1%</b>	<b>Ministry of Finance (MoF)</b>	<b>-</b>	
Area tax	12	0,8%	Dividends (from ZCCM to MOF)	1	0,2%
Bonuses	1	0,0%	<b>Ministry of Mines and Minerals Develop</b>	<b>-</b>	
Administrative fees	1	0,1%	Fees	3	0,4%
Fines, penalties, and forfeits	33	2,2%	<i>incl. Area Charges</i>	3	0,3%
<b>State Owned Enterprises (SOEs)</b>	<b>369</b>	<b>24,8%</b>	<b>Environmental Protection Fund</b>	<b>-</b>	
Fees	180	12,1%	Emission and pollution taxes	0	0,0%
Dividendes from SOEs	0	0,0%	<b>Ministry of Lands</b>	<b>-</b>	
Royalties	75	5,0%	Ground Rent	0	0,0%
Bonuses	76	5,1%	<b>Local Councils</b>	<b>-</b>	
Administrative fees	38	2,6%	Fees and taxes	11	1,4%
			<i>incl. Property taxes</i>	11	1,4%
			<b>Local communities</b>	<b>-</b>	
			Social Payments (Corporate social respo	28	3,6%
			<b>Industrial Development Corporation Ltd</b>	<b>-</b>	
			Dividends (from ZCCM to IDC)	5	0,6%
			<b>Total revenue</b>	<b>1 179</b>	
<b>Total revenue</b>	<b>1 485</b>		<b>Total revenue excl. VAT</b>	<b>790</b>	
<b>GDP</b>	<b>38 019</b>		<b>GDP</b>	<b>23 250</b>	
Total revenue as % GDP	3,91%		Total revenue (excl. VAT) as % GDP	3,40%	

Source: EITI reports and authors.

The compliance to EITI is a necessary but not a sufficient condition to insure a fair share of the rent, nor an effective protection against aggressive tax planning. The Fiscal Analysis of Resource Industries (FARI) by the IMF provides an overview of the tax policy applied to the extractive industry through the computation of the **Average Effective Tax Rate (AETR)**. The AETR is a measure that captures all the payment a project would have to pay along its lifecycle: Development including exploration costs, exploitation, and closure or decommissioning. The AETR is the net present value of the sum of annual fiscal revenue divided by the net present value of cash flow of the project. The results are particularly sensitive to the discount rate especially when the operational life is long.

The mains interests in the AETR approach are: (1) Providing a simple measure of the government's share of the resource rent; (2) Identifying the main sources of revenue and their respective time profile; (3) Revenue forecasting; (4) Allowing international comparisons; (5) Appreciating the progressivity of the tax policy regime by simulating the impact of commodity price increase; (6) Simulating the effects of tax policy reforms on collected revenue. The AETR

computations can be specific to each mining or petroleum projects in the country. It relies then on two main inputs: Feasibility studies of each project and tax policy regime applied to each project. Feasibility studies provide technical and economic details of resource projects. These documents aim mainly to convince shareholders of the investment return in the resource project.

Even in transparent environment tax policy regime may differ significantly across projects as a result of the application of **fiscal stability clauses**. These clauses are an answer to the time inconsistency issue resulting from investment irreversibility. It is a commitment device through which the resource rich country binds itself against any potential increase in tax rates once the investment is made. The need for fiscal stability clause is less compelling if the resource rich country has a sound progressive fiscal regime. This clause may take two forms: A frozen law formulation that fixes the tax rates and tax base for a determined length or a agree-to-negotiate formulation. Resource rich developing countries use generally the first form. This explains why we may observe several tax regimes applied to similar resource projects in the same country. The project is subject to the existing tax regime at the date of obtaining the exploitation (or exploration) license. These stability clauses limit seriously the short-term effect of tax reforms especially if these reforms aim to increase the tax burden.

#### 4. AGGRESSIVE TAX PLANNING AND VAT

The AETR approach is mainly *de jure*. It displays several limits especially regarding the implementation of tax regimes. It assumes a perfect enforcement of tax laws and ignores the issues raised by aggressive tax planning. Several organizations deal with this issue in general and also particularly in resource rich developing countries (cf. Table 2). The OECD developed the Base Erosion and Profit Shifting (BEPS) and more recently Global Anti-Base Erosion (GloBE) model with two pillars, the second being a minimum effective profit tax of 15 percent.

Figure 1 displays the main financial flows: revenues raised by the government and incomes received by the investors. We consider the main strategies of aggressive tax planning that allow to reduce the taxable bases: Hedging contract, transfer pricing, and thin capitalization.



consider a mining plant in DRC. We assume that the MNE has a central purchasing body locating in a tax heaven. The objective is then to overestimate any purchase done by the mining plant to the central purchasing body. This increases the production costs and decreases taxable profits. For instance, an equipment which costs 60 000 Euro will be sold by the central purchasing body to the mining plant for 75 000 Euro. This increase raises depreciation allowances for the equipment operating life and decreases taxable profits of the Congolese mining plants for several years, while it raises immediately by 15 000 Euro the profit of the central purchasing firm. Notice that the equipment good is usually on a mining or petroleum list that insures total tax and duties exemption. Thus, the reduction in CIT due to equipment overestimation is not compensated by an increase in indirect taxation or customs duties.

A third way to transfer profit is the **thin capitalization** of the natural resource project, or equivalent its over-indebtedness. MNE has an offshore entity located in a tax heaven. This financial center provides loans to the natural resource project. These loans generate the payment of interests that are deductible from the profit base of the natural resource project. Internal debt allows to transfer profit to tax heaven either through high debt levels<sup>20</sup> or high interest rate (above its market value).

#### **4.b The main solutions to address aggressive tax planning**

Receiving mandate from G20 the OECD took the lead to deal with aggressive tax planning with the launch of its BEPS approach in 2013. The main solution was to promote and implement the arm's length principle, that consists in assessing transfer pricing at their 'right' level, that is market price. An intragroup transaction should be priced as if it would be done between non-related firms. The OECD developed five methodologies that are more or less complex: (1) Comparable uncontrolled price method; (2) Resale price method; (3) Cost plus method; (4) Profit split method; (5) Transactional net margin method. The first three methods are traditional transactional methods, while methods (4) and (5) are transactional profit methods.

Taxpayers are free to choose any method. This may depend on the availability of comparable data. Tax administrations prefer generally the method with the fewest adjustments and providing the most reliable measure of an arm's length result. The main criticism against the arm's length principle is that it leaves (too) much room for interpretation, which results in a lot of discussions between taxpayers and tax administrations. For some NGOs (e.g. Tax Justice Network, OXFAM) arm's length principle is not sufficient to prevent aggressive tax planning.

An interesting example is the now called '**Sixth**' **method** that applies to the production of natural resources commodity prices quoted on a relevant exchange market (London, Chicago...).<sup>21</sup> This approach was first developed by Argentina in 2003 and endorsed by OECD only in 2017. By using commodity quoted prices, the sixth method provides a clear and transparent standard for determining the price of related-party mineral sales that would be easier for tax authorities to apply and less vulnerable to tax avoidance. An alternative approach is administrative or norm pricing (e.g. Norway for oil). The sixth method: the use of quoted price may also be used to sales between independent parties. Zambia requires that taxpayers use

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<sup>20</sup> Debt levels are usually defined as the ratio of debt to equity.

<sup>21</sup> See IGF (2022) for more details.

quoted prices on the London Metals Exchange or London Metal Bulletin to set the price of base and precious metals.

The sixth method is a simpler and more transparent approach. It improves tax certainty for investors. The advantage of a quoted price is that it can be observed by the tax authority and taxpayer, as opposed to the actual sale price, which is vulnerable to manipulation. It reduces (but does not eliminate) the need for detailed transfer pricing analysis. The main limit is the potential opposition of investors to comply to this method.

Regarding thin capitalization, several solutions have been proposed that are more or less complex. The simpler is the earning stripping ratio implemented first by Germany. It consists in limiting deductible interest to a ratio (for instance 30 percent) of a measure of economic activity (for instance, EBIDTA).<sup>22</sup> This approach may be extended to any CIT deductible cost. It secures taxable revenue, but it may constrain firms in their operational and even strategic choices. The earning stripping ratio may penalize some economic sectors that use massively debt to finance their activity.

Finally, an immediate solution is **withholding tax** that consists in taxing any payment done by a national firm to a foreign firm. This limits drastically the risk of aggressive tax planning and provides an incentive to create domestic subsidiaries. However, withholding tax systems are largely restricted by **Double Tax Agreements (DTAs)**. These bilateral agreements share the taxing right of any international transaction between two countries in order to avoid a double taxation. There are two models of DTAs that differ significantly in protecting the tax bases of developing countries. The OECD model of DTAs was designed for developed countries and provides main taxing rights to the residence country,<sup>23</sup> that is to the capital exporter country. The UN model<sup>24</sup> protects the source country by allowing to have some residual taxing power. Beer and Loeprick (2018) establishes that a DTA does not increase FDI in Sub-Saharan Africa countries, but decreases their CIT revenue by around 5 percent. They also pinpoint that a DTA with Mauritius would decrease CIT revenue by 15 percent. Senegal and Zambia cancelled recently their respective DTA with Mauritius. The assessment of revenue losses due to DTAs remains to be done in many developing countries and the EU delegations could be proactive to initiate such works.<sup>25</sup>

#### 4.c The role of Value Added Tax (VAT) in the extractive industry

VAT applied to extractive industry raises multiple issues in developing countries.<sup>26</sup> First, despite what appears in Table 3,<sup>27</sup> VAT does not raise any direct revenue from this sector. Indeed, VAT is by definition a tax on consumption. If the main (if not all) production of the extractive industry is exported, it is not locally consumed and it cannot be subject to VAT.

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<sup>22</sup> EBITDA: Earnings Before Interest, Taxes, Depreciation and Amortization

<sup>23</sup> The residence country is the country where capital owners are located. The source country is the country where capital is allocated and ‘works.’

<sup>24</sup> See for more details: [https://www.un.org/esa/ffd/wp-content/uploads/2018/05/MDT\\_2017.pdf](https://www.un.org/esa/ffd/wp-content/uploads/2018/05/MDT_2017.pdf)

<sup>25</sup> Revenue losses resulting from DTAs are hardly considered in tax expenditures assessment.

<sup>26</sup> A detailed treatment of VAT in the extractive industry is provided at: [https://www.un.org/esa/ffd/wp-content/uploads/2016/10/12STM\\_CRP3\\_AttachmentB\\_VAT.pdf](https://www.un.org/esa/ffd/wp-content/uploads/2016/10/12STM_CRP3_AttachmentB_VAT.pdf)

<sup>27</sup> The EITI report for Zambia report VAT revenue equal to USD 389 Million (49 percent of total revenue). Even if VAT cannot be considered as final tax revenue, the interest of looking after this tax is to follow how well VAT refund policy works in the country.



Second, the zero rate of VAT for exporters induces an obligation for VAT credit refunds, which many developing countries do not manage to deliver. For instance, a mining plant imports some capital goods and pays VAT at the border. This VAT must be refunded to the mining plant since the latter exports all its production and does not collect any VAT on the domestic market. Unfortunately, it is frequent that the authorities cannot refund VAT in reasonable delay. Potential and real frauds may complexify the process of VAT refund. Insufficient funds from the Treasury can also explain long delays or even no refund at all.

An inadequate response to this issue is to provide VAT exemption to the extractive industry. This does not induce direct revenue losses, but it narrows drastically VAT base and favors importations over local productions. Indeed, a domestic sub-contractor has to support the VAT on its inputs and cannot collect VAT on its customers (mining plant or oil companies). Thus, it has to reduce its margin or increase its prices or both. Extending VAT exemption to sub-contractors complexifies VAT refund issues, increases the risk of frauds, and shrinks even more the VAT base. It raises an additional issue regarding the definition of sub-contractors that can enjoy VAT exemptions. Finally, VAT exemption of the large mining or petroleum firms involves indirect revenue losses since the tax authorities cannot use invoices paid by these firms to identify suppliers and appreciate their turnover.<sup>28</sup>

Some alternative solutions to VAT exemption exist. Some countries such as Nigeria and Mongolia modified their VAT laws and do not admit the VAT deductibility on capital goods. This transforms VAT into the equivalent of a customs duty or a tax on capital, that increases obviously the production cost in the country and reduces its attractiveness. The creation of a special fund at the Central Bank for VAT reimbursements may secure some reserves. But, this solution remains insufficient to improve the refund mechanism itself. Finally, some VAT reverse charge mechanisms may solve a large part of VAT refunds issue when they are applied at the border for the important of capital goods, which value exceeds a given threshold. The extractive firm remains VAT compliant, but does not pay VAT at the border and then does not claim VAT refunds on its importations. This solution limits the risk of VAT frauds and keeps the mining or petroleum firms in the VAT network.

Before concluding we can stress some tax issues we did not address, especially: The taxation of capital gain related to direct and indirect transfer of mining or petroleum licenses<sup>29</sup> and tax incentives in the extractive industry.<sup>30</sup> Taxing capital gains may be particularly complex and requires reviewing national tax laws. The lack of information regarding ultimate owners of licenses may limit seriously the implementation of capital gain tax. However, this issue relates also to transparency that can be reinforced. Tax incentives in the extractive industries appear paradoxical since natural resources scarcity and exhaustivity generates rent that justifies more tax rather than less. However, despite its bounded rationality tax incentives exist. Their design matters and some forms of tax incentives should be preferred to others: Tax credit is better than

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<sup>28</sup> In 2013, Mauritania reimbursed VAT credits to a mining firm for the first time. By doing this, the tax administration checked the validity of all the invoices paid by this mining firms. It identified many domestic suppliers (almost 2,000) that were not adequately registered at the tax administration. The VAT refund allowed the Mauritanian tax administration to broaden significantly its tax base and improve its tax revenue in a sustainable way.

<sup>29</sup> For a treatment of this issue, see <https://www.oecd.org/ctp/PCT-offshore-indirect-transfers-draft-toolkit-version-2.pdf>

<sup>30</sup> See <https://www.oecd.org/tax/beps/tax-incentives-in-mining-minimising-risks-to-revenue-oecd-igf.pdf>

CIT holidays. The latter target poorly investments and may even shorten the lifetime of mining plants or oil wells.

## 5. CONCLUSION AND SOME GUIDELINES

This Policy Note addressed briefly some issues regarding DRM in resource rich developing countries. There is obviously no silver bullet to fix all the issues and the ‘one-size fits all’ approach is open to criticism. However, we can suggest the following list of priorities in assisting resource rich developing countries:

1. Promote transparency:
  - a. Being at least EITI compliant;
  - b. Publishing all the resource contracts;
  - c. Providing exploitation license conditional upon the publication of relevant feasibility study.
2. Estimate the administrative fragmentation and complexity of the extractive industry governance: Reinforcing the coordination between several administrations (tax administration, customs, mining, and petroleum administrations...) and establishing their respective liability.
3. Assess the relative performance of extractive tax regime(s):
  - a. Estimating AETR of actual mining plants or oil wells (FARI, IMF) with actual feasibility studies;
  - b. Making international comparisons.
4. Reinforce tax bases (royalties, CIT, capital income tax...) against aggressive tax planning:
  - a. Review national tax laws (OECD, IMF, IGF);
  - b. Review active DTAs (UN, IMF) and eventually cancelling some of them.
  - c. Support the 6<sup>th</sup> method to assess exportations and the turnovers of national extractive firms.
5. Streamline (and even cancel) tax incentives in the extractive industry:
  - a. Stability clauses may require legal assistance (UN, WB group);
  - b. Promoting tax expenditures assessment and publishing results participate to budget transparency.
6. Improve the VAT mechanism applied to the extractive industry: Avoiding VAT exemption.
7. Reinforce the capacity of tax administration:
  - a. Tax audit (TIWB, OECD);
  - b. Capacity building (OECD, IMF, AFRITAC).

Given the previous list of priorities, Table 4 provides some potential SMART indicators. We consider some EITI requirements that are essential prerequisites in terms of transparency. We complete the EITI approach by introducing other requirements such as the publication of feasibility studies that allow to compute AETRs of actual resource projects in the country. However, EITI requirement 3.1 appears too broad to be effectively measurable and really achievable. We also pinpoint that stability clauses may limit seriously the effectiveness of tax policy reforms.

Table 4: Some DRM SMART indicators

Ref.	Potential (sub)indicator	Accountable party	Main purpose	Achievement	Potential issues
EITI 2.1	Publish legal framework and fiscal regime	MoF	Transp.	Documents are available online.	No technical issue,
EITI 2.2	Publish the process of contract and license allocations	MoF and MoM/MoP	Transp.		Risk of lack of political willingness
EITI 2.3	Disclose the license register (petroleum, mining, forestry)	MoM/MoP	Transp.	The mining/petroleum cadaster is available online.	Technical issue requiring some fundings to finance private solution (e.g. Trimble). It should be updated regularly (e.g. monthly). Potential confidentiality issue.
EITI 2.4	Disclose contracts	MoM/MoP	Transp.	Documents are available online.	Potential confidentiality issue.
	Disclose feasibility studies connected to each exploitation license	MoM/MoP	Transp.	Documents are available online.	Potential confidentiality issue.
	Adopt and apply a ring-fencing rule: One corporation by exploitation license; Separation of the activities of exploration and extraction.	MoF	Simplicity	The Mining/petroleum Code/Act is modified.	No technical issue.
EITI 2.5	Disclose beneficial ownership	MoF and MoM/MoP	Transp.	Information is available	Ownership may change. This indicator needs a regular updating.
EITI 2.6	Provide information on State participation and State-owned enterprises	MoM/MoP	Transp.	Information is available	No technical issue.
EITI 3.1	Overview of the extractive industries, including any significant exploration activities	MoM/MoP	Transp.	Online publication.	Considerable works. Hardly achievable indicator (not SMART).
EITI 3.2	Production by commodity (volumes and values)	MoF and MoM/MoP	Transp.	Online (monthly) publication	Technical issue. Private accredited laboratory (temporary solution).
EITI 3.3	Exports by commodity (volumes and values)	Customs, MoM/MoP	Transp.		
	Produce a mirror analysis on commodities	MoF and MoM/MoP	Transp.	A report is produced.	Technical assistance from IMF/WB.
	Adopt the 6th method for natural resources production/exportation	MoF	Simplicity	Relevant legal texts (Tax code, mining code or decree) are modified and effectively enforced.	Technical assistance for assessing revenue impact and for legal drafting (IMF/WB/OECD).
	Assess AETRs of the extractive industry	MoF and MoM/MoP		Publication of the report. Capacity building. International comparison of the national tax regime	Technical assistance from IMF/WB, FERDI...
<b>Improving the VAT mechanism of the extractive industry by:</b>					
	Establishing the reverse charge process for capital goods imports above a critical value threshold (e.g. 100 000 Euro)	MoF	Local content	Extractive industry remains VAT compliant.	Prerequisites: Strong coordination between tax and customs administrations;
	Establishing an special account at the Central Bank to finance VAT credit refunds	Central Bank			Fiscal Identifier Number Database is updated and shared by both administrations.
	Funding this special account with a significant share of VAT collected at the border	MoF			
<b>Improve the progressivity of the extractive industry tax regime by:</b>					
	Adopting mining royalty rates increasing in commodity prices	MoF	Progres.	Relevant legal texts are modified.	Stability clauses may limit the scope of the reform.
	Adopting CIT rate increasing in commodity prices	MoF		The new policy is effectively implemented.	

## REFERENCES

African Union, (2009), *Africa Mining Vision*. Addis Ababa: African Union.

African Union, (2017), *Africa Mining Vision: African Minerals Governance Framework*, Addis Ababa: African Union.

Alence, Rod and Robert Mattes, 2016, *Mineral Governance Barometer: Southern Africa*, Open Society Initiative for Southern Africa.

Beer, Sebastian and Jan Loeprick, (2018), "The costs and benefits of tax treaties with investment hubs: Findings from Sub-Saharan Africa," IMF working paper, <https://www.imf.org/en/Publications/WP/Issues/2018/10/24/The-Cost-and-Benefits-of-Tax-Treaties-with-Investment-Hubs-Findings-from-Sub-Saharan-Africa-46264>

Cameron, Peter D.; Stanley, Michael C.. (2017). *Oil, Gas, and Mining: A Sourcebook for Understanding the Extractive Industries*. © Washington, DC: World Bank. <http://hdl.handle.net/10986/26130> License: CC BY 3.0 IGO

Daniel, Philip, Keen, Michael and Charles McPherson (Eds.), (2010), *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*, Routledge New York.

Diamond, Peter A., and James A. Mirrlees, (1971) "Optimal Taxation and Public Production I: Production Efficiency." *The American Economic Review* 61, no. 1: 8–27. <http://www.jstor.org/stable/1910538>.

IGF, 2022, Using the Sixth Method to Simplify the Pricing of Related-Party Mineral Sales and Safeguard Mining Revenues, <https://www.igfmining.org/wp-content/uploads/2022/11/using-the-sixth-method-to-simplify-the-pricing-of-related-party-mineral-sales-and-safeguard-mining-revenues.pdf>

Slemrod, Joel and Christian Gillitzer, 2014, *Tax Systems*, MIT Press, Cambridge, MA.