

Extractive Industries Revenues Distribution at the Sub-National Level

The experience in seven resource-rich countries

Matteo Morgandi
Consultant

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1. INTRODUCTION

1.1 SCOPE OF THIS STUDY

This paper presents a comparative analysis of the legislation that regulates the distribution of revenues from Extractive Industries (EI) across levels of government in seven resource-rich countries. The sample of countries includes low-income and middle-income economies, from three Regions, with varying levels of fiscal dependence on extractive industry revenues.

The study concentrates on the *oil and gas sectors* in all countries except for Ghana, where mining is the main extractive activity. The focus of the analysis is on the revenues that extractive industries generate through sector-specific taxes (such as royalties, special participations, EI-specific profit tax rates). Only in some countries it was possible to include in the calculations of revenues the “regular” business taxes, such as corporate income tax or property tax, which means that the information presented is not entirely comparable across countries. The weight of regular taxes varies considerably from country to country, though it seems to be always a smaller share of the total¹. The fiscal function of special taxes on extraction differs from “regular taxes” on business activities. The allocation of the latter is already regulated within the general fiscal architecture of the country, while the special taxes on extractives represents the compensation for the extraction of the natural resource that belongs to the State². There is no doubt that in the context of the EITI principles revenues from regular taxes play an equally important role; so the sections on transparency will also take into account regular taxes wherever these also accrue to sub-national governments.

¹ For instance (ESMAP, 2005) calculated that in that year in Ecuador, Bolivia, Peru, and Colombia revenues from “regular” corporate income tax amounted to 0%, 6%, 13% and 36% respectively of total government take.

² The allocation of regular business taxes is part of the general inter-governmental fiscal balance, and for this reason outside the scope of this study, which attempts to understand how the *extra revenue* that extractive industries generate is managed. Certainly in countries where the extractive sector is the main sector of the economy, such as Nigeria, this distinction becomes blurred, and in such a case we will see that the law itself is designed to capture *all revenues* from extraction, including corporate tax and dividends, into a single revenue pool.

It is also technically difficult to account for the regular tax revenues from extractive activities, unless a specific effort is made by the Internal Revenues agency to include a differentiation by sectors in its reports. Secondly, even when we have access to the firm-level fiscal payments (which in the cases of Pemex and Petrobras represent almost the total of the industry in Mexico and Brazil), it is not possible to differentiate how much of the tax depends on upstream extractive activities and how much from downstream retailing activities.

1.2 LITERATURE ON THE ALLOCATION OF EXTRACTIVE INDUSTRY REVENUES

The issue of revenue distribution at the sub-national level is usually treated as a sub-set of two main themes: (i) the literature on natural resources revenues management, and (ii) the literature on fiscal decentralization. An additional indirect reference to this subject is made by to studies on sub-national conflicts, which often touch upon on the question of national resources revenue-sharing.

We can differentiate two *complementary* theoretical views on the allocation of Extractive Industry Revenues (EIR).

Public sector economists discuss the optimal allocation of natural resources revenues within the predicaments of the established decentralization economic literature. They value efficiency of allocation, and the overall stability and equity of the fiscal system. The literature often considers EIR a risk to manage as much as an opportunity, because these fiscal streams are: (i) unstable across years (ii) a source of revenue that is by definition temporary in time (iii) potentially negatively impacting on macro-economic stability (iv) potentially distortionary on the territory if not allocated in the most efficient way. Hence, the standard position on their allocation is the following:

“In an unconstrained world, it would be best to fully centralize oil revenue. This should be accompanied by (1) appropriate revenue assignments that give the subnational administrations control over some major tax rates at the margin (needed for accountability); and (2) well designed transfers with appropriate transparency and based on equalization principles”.³

It is also worth citing the main predicaments of the established economic literature on decentralization, which has influenced directly the economists’ perspective on the distribution of NRR⁴:

- Neutrality of transfers of Resources and Taxation Power: Decentralization of funding should be matched by a proportional assignment of responsibilities to avoid overall cost increases. Revenue collection responsibilities should be assigned according to comparative advantages, to minimize collection costs, maximize coverage and avoid distortions.
- Predictability of funds: revenue sources at the sub-national level should enjoy greater stability and predictability than at the center, given the limited adjustment capacity of SNGs to fiscal shocks (including their difficulty to borrow and the nature

³ Emphasis added. (Ahmad and Mottu, 2002), p. 22. Also (Hofman and others, 2006)p. 5;

⁴ (Bahl, 2004); (Bahl, 2002)p. 3-5; (ESMAP, 2005) p. X; (Kaiser, May 2007) p.30; (Shah, 1994) p. 5-9.

of some of the services that they deliver, which are “essential” and are based on recurrent expenditures).

- Clearly defined and relevant powers: SNGs should be assigned those functions in which they may have functionally a comparative advantage, and should have (or build) the capacity to respond to their responsibilities.
- Fiscal Responsibility: adequate controls on utilization of funds, and established limits on excessive borrowing.

However, this literature also recognizes that these revenues have an environmental as well as a political effect on the local communities. For this reason, most authors concede some degree of sharing may be necessary, with two main justifications: to adjust to the “political” constraints of the country, and to redress some of the environmental costs of extraction.

Other studies factor in more explicitly the importance of the historical compromise between central authorities and peripheral communities over management of resources, and the relevance of the established political power (on which depends the legitimacy of taxation)⁵. These studies expound more the rationales in favor of an allocation of revenues by derivation. The main arguments in this sense include⁶:

(i) compensating for the depletion of the natural resources of the land belonging to its inhabitants, especially if these have been occupying the land before the establishment of the contemporary state; (ii) replacing the existing revenues with sources for economic development for the future generations (iii) redressing environmental damages caused by the extraction, (iv) preempting autonomous taxation efforts by local authorities if not duly compensated, and in worse cases, (v) preserving harmonious political relations between the central government and the periphery.

⁵ (Otto, 2001), p.2ff

⁶ (Searle 2004); also (Bahl and Tumennassan, 2002); (ESMAP 2004) p. 162;

2. OVERVIEW OF COUNTRIES STUDIED

2.1 RELEVANCE OF EXTRACTIVE INDUSTRY REVENUES

This study covers countries with varying levels of budget reliance on extractive industry revenues (EIR). Figure 1 shows that in 4 out of 7 countries, EIR represent between 20% and 40% of total revenues, with Nigeria and Brazil as the two “outliers”, on opposite sides. To place this data in context, Figure 2 shows the overall government revenue collection effort. With the exception of Bolivia, the three countries with the highest revenue reliance are also the weakest in overall revenue collection⁷.

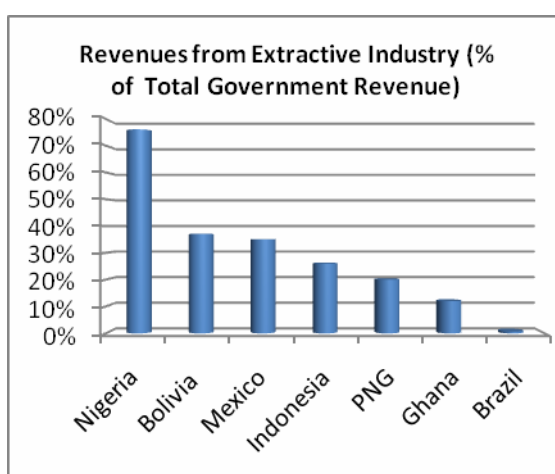


Figure 1: Revenues from EI (% of Total Government Revenues).

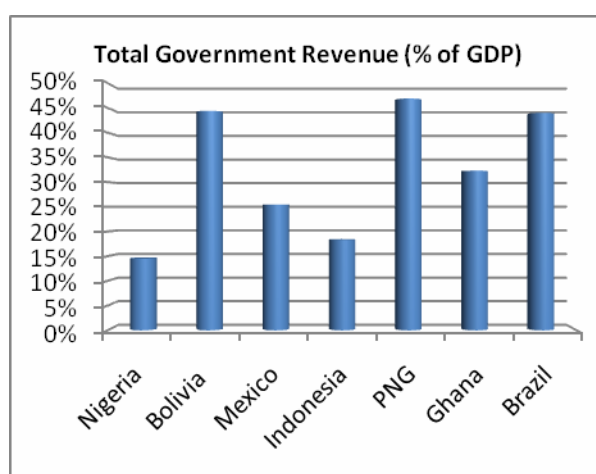


Figure 2: Total Government Revenues (% of GDP)

2.2 REVENUE DISTRIBUTION LEGISLATION – COMPARATIVE SUMMARY

In order to offer a comparative perspective of the chosen sample, the table below analyzes the legislation of each country according to the Revenue Sharing Mechanism employed, the use of earmarking, and the transparency measures in place.

Every country of the sample utilizes **derivation** to assign at least some share of the revenues (though in Mexico’s case the amounts are minimal), and in Nigeria, Bolivia,

⁷ Without inferring any causal relationship between the two measures, the data reminds us that the relevance on EIR is not only a function of the size of the extractive industries sector vis-à-vis other sectors of the economy, but also of the overall government capacity to collect revenues across the economy.

Indonesia and Mexico there are also direct mechanisms of partial **revenue re-distribution** to non-producing regions. Interestingly, the latter 4 countries are also those where EIR represents a higher share of the budget. This may confirm the intuitive idea that redistribution becomes politically more important as resources from EIs become essential to sustain the overall budget expenditure. Also, among the four countries that redistribute, Bolivia is the only case in which redistribution is not based on a formula that takes into account specific socio-demographic characteristics (further discussed in the Bolivia chapter).

In PNG, Brazil and Ghana **non-government beneficiaries**, which include both private and communal/customary owners of land, are entitled to permanent shares of revenues. This differs significantly from the requirement to offer one-off compensation or to pay land rent. In fact, the inclusion of private beneficiaries derogates from the more common principle that all natural resources are property of the state; secondly, the amounts distributed may be considerable, especially if the number of landowners is limited. In this respect, all the sample countries in Latin America are signatories of the ILO Convention 169 on Indigenous People, though only Bolivia include in the legislation specific mention of the Convention and allocations to Indigenous Communities⁸.

Most countries make use of **earmarking**, though at varying degrees. Bolivia and PNG earmark a large part of the revenues shared at the local level, while Mexico, Nigeria and Brazil earmark funds at the central level. We can distinguish two types of earmarking:

- Agency Earmarks, which guarantee increasing funding to the agencies that regulate, monitor or serve the extractive industries, as the sector grows.
- Policy Earmarks, which represent the attempt to make natural resource revenues a driver for change in terms of economic, social or human development.

Earmarks for research & development of the domestic energy or extractive sectors are the most frequent. Also common are earmarked revenues for the agencies that manage natural resources. These funds are centrally managed and spent. Funds for social expenditures, economic development and environmental mitigation are reinvested in the producing regions (except Bolivia's Direct Hydrocarbon Tax).

Regarding transparency-enhancing provisions, the most common requirements that the revenue distribution legislation contain include:

⁸ The Convention articulates in detail the right of indigenous people to express their prior and informed consent to the exploitation of the land, the way in which the exploitation should happen compatibly with their other rights and uses of the land, as well as to the right to receive a share of the revenues that eventually ensue. More research would be needed to establish the level of compliance of each national law with the ILO convention 169, also taking example from other countries outside our sample such as Colombia (discussed in (ESMAP, 2004)).

- Specifications about the dedicated bank accounts to regularly deposit the sum to which each government authority is entitled.
- Designation by law of all actors involved in the revenue payment chain
- Publication of revenue entitlements up to the lowest level of government.
- Penalties, such as the discontinuation of revenue payments from the central government to the regions, for failing to expense earmarked funds as required, or for failing to report on their usage.

	Peru	Nigeria	Bolivia	Brazil	Ghana	Indonesia	PNG	Mexico
Relevance of Natural Resource Revenues								
Extractive Industry Revenues (% of total rev) (various years)	n.a.	76%	37%	0.7%	12%	26%	20%	35%
Budget Revenue (% of GDP)	n.a.	15%	44%	44%	32%	18%	47%	25%
Revenue Sharing Mechanism								
Use of Derivation Principle	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Very Minimal
Redistribution to non producing regions	No (except for Camisea fund)	Yes	Yes	No	No	Yes, indirectly but automatically	No	Yes
Formula-based redistribution according to specific characteristics.	Only for intra-regional distribution	Yes	No (except Large Cities Fund)	No	No	Yes	No	Yes
Private beneficiaries considered in the law	No	No	Yes, Fund for Indigenous People & <i>Campesinos Communities</i> out of treasury share of revs.	Landowners (Royalty rate of 0.5% to 1% of value)	Stools (customary land title holders)	No	Private and Communal landowners	No
Ratified ILO Conv. 169 on Indigenous People	Yes	No	Yes	Yes	No	No	No	Yes

	Peru	Nigeria	Bolivia	Brazil	Ghana	Indonesia	PNG	Mexico
Earmarking of Revenues for Specific Sectors or Funds								
Share earmarked Minimal = <1%, Partial = < 20% Major = > 20%	No	Partial	Major	Major	Minimal	Minimal	Major	Minimal
Environmental mitigation	No	Yes, 2% of Gov Share to projects in deriv. states;	Yes 100% of License Fees to local government & environmental agency	Yes 10% of special participations to Ministry of Environment for local mitigation	Yes, 1% of Gov Share.	No	Yes	Yes (minimal)
Fund for Research, Technology and Development of Extractive Industry and Energy.	No	Yes 3% of Gov. Share to developme nt of Natural Resource sector	Yes Through 32% Participations from large fields to YPFB. 5% of IDH tax to Fund to increase gas accessibility.	Yes 40% of revenues from "special participations" to Ministry of Energy, 25% of 5% Royalty to Ministry of Science.	Yes 10% of royalties paid to the Mineral Development Fund	No	No	Yes 0.15% (to raise to .6%) of value extracted paid in National Fund for Energy Technology
Social Expenditures and Development Programs	Only in investmen t projects (infr.)	No	Yes IDH (32%) entirely for development and pensions	No	No	0.5% of revenues for education in deriv. states	Yes	No
Heritage (future generations) fund	No	No	No	No	No	No	Yes Local Trust Fund	No

	Peru	Nigeria	Bolivia	Brazil	Ghana	Indonesia	PNG	Mexico
Other purposes	No	1% of Gov Share for stabilization fund, 2% to Federal Capital	Fund for 3 Major Cities		No	No		Fund for stabilization of revenues across years
Transparency and Monitoring Mechanisms								
Dedicated Accounts for each beneficiary entity	No	No States have joint account with Local G	No States have joint account with Local G	Yes Royalties paid directly to each beneficiary by companies	Single collector agency has accounts for each beneficiary.		Yes Each benef. has a trust fund account	Not applicable
Regular Publication of revenues and transfers up to last level of government.	Yes	Yes	Yes	?	No	Generally No. Shared revenues accounts in Special Provinces are audited independently ⁹ (but not clear whether these are accessible to the general public).	No	Not Applicable since allocation is part of budget process.

⁹ 58 p. 3

2.3 DISTRIBUTIVE RESULTS IN SELECTED COUNTRIES

Appendix 1 contains the **definition** of key terms used in this study, including revenue allocation mechanisms and revenue distribution measures.

VERTICAL DISTRIBUTION

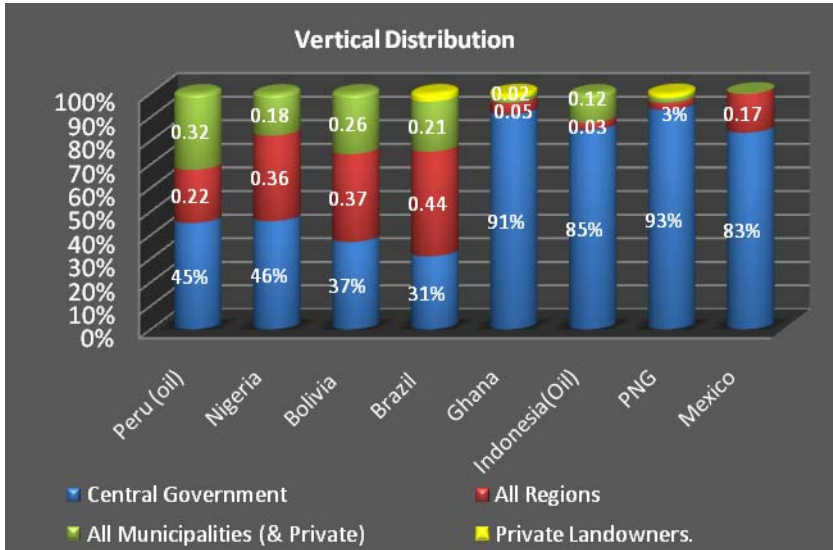


Figure 3: Vertical distribution of EIR. See Appendix 4 for sources.

overall fiscal decentralization, but simply that SNG are less dependent on natural resource revenue flows.

Figure 3 measures the degree to which EIR is shared across government levels. Bolivia, Nigeria and Brazil exhibit a high level of direct EIR decentralization, compared to Indonesia, Papua New Guinea and Mexico. A lower level of direct revenue sharing does not imply that the country is subject to a lower level of

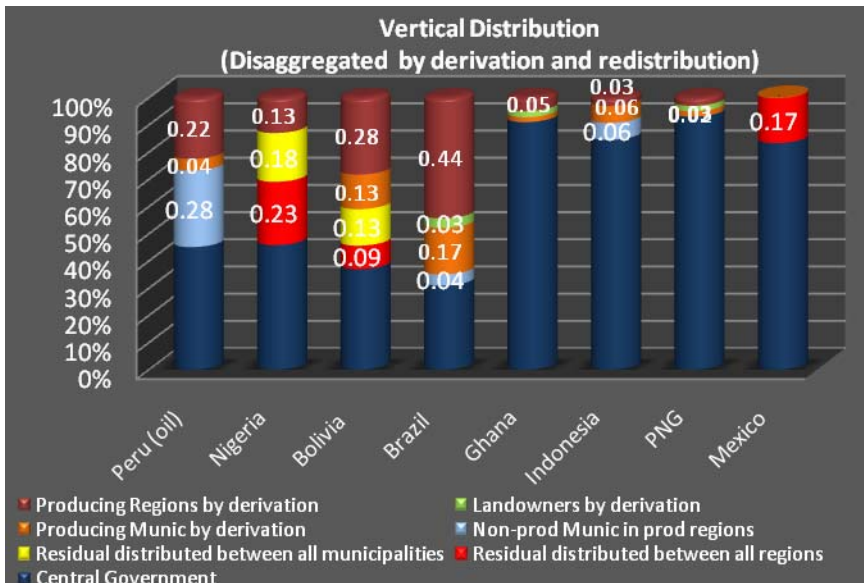


Figure 4: Vertical Distribution of Revenues, disaggregated by distribution method. See appendix 4 for sources.

Figure 4 disaggregates the revenues distributed to SNG according to the revenue sharing mechanism: by derivation or by redistribution from a central pool. Every country in the sample assigns part of the revenue “by derivation”, but the relevance of derivation varies considerably. In the

case of Nigeria and Mexico, the remainder revenues are partially shared across all regions according to other criteria, while Bolivia assigns upfront shares of revenues to all non-producing regions.

HORIZONTAL DISTRIBUTION

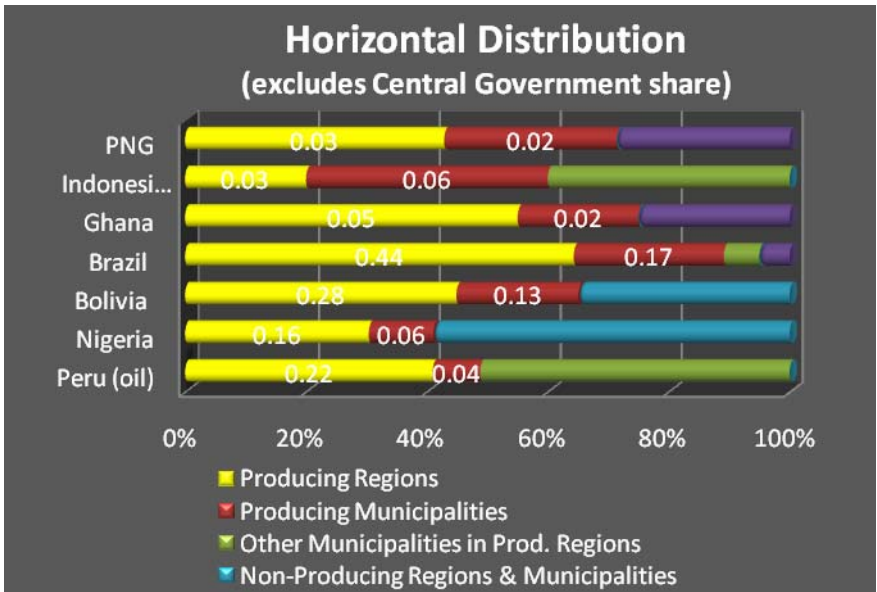


Figure 5: Horizontal Distribution from EIR, excludes Mexico. See Appendix 4 for sources.

The horizontal distribution refers only to the SNG level, and it highlights how much of the decentralized revenues accrue to producing territories and how much are redistributed. In all cases (except for Mexico), producing SNGs receive a larger share of natural resource revenues than non-producing

SNGs, even when redistribution mechanisms are in place. The share accruing to producing SNGs includes both the allocation received by derivation and the allocation received through other distribution mechanisms. Since usually only a minority of regions are “producers” (the ratio in each country varies), the final per-region allocation is even more skewed in favor of producers than it is displayed in this graph.

3. COUNTRY CASE STUDIES

3.1 METHODOLOGY

The main sources for the following country case studies are national legislation, secondary literature and official data from national accounts. As a complement to the illustration of the national legislation, each country analysis contains a snapshot of the political economy of EIR, and comments on the level of application of the law. These paragraphs are based on the opinions of a group of national experts surveyed for this study. Their contributions provide context to the legal and distributive outcomes that the study presents, and enhance our understanding of the merits of these regulations, particularly in terms of transparency.

3.2 BOLIVIA.

Main Source of Extractive Industry Revenues: Gas and Oil

LEGISLATION ON REVENUES DISTRIBUTION

Bolivia introduced a new law regulating hydrocarbons taxation and revenue distribution in 2005; a series of Presidential Decrees in the subsequent years modified the distribution of some of the revenues (see Annex 2, page 42). The main revenues derive from a Royalty and a Direct Hydrocarbon Tax (which works exactly like a royalty) amounting respectively to 18% and 32% of the gross value extracted. In 2007 the Nationalization Law introduced an additional compulsory participation of 32% on the gross value extracted from the country's largest fields, which finances directly the national corporation YPFB.

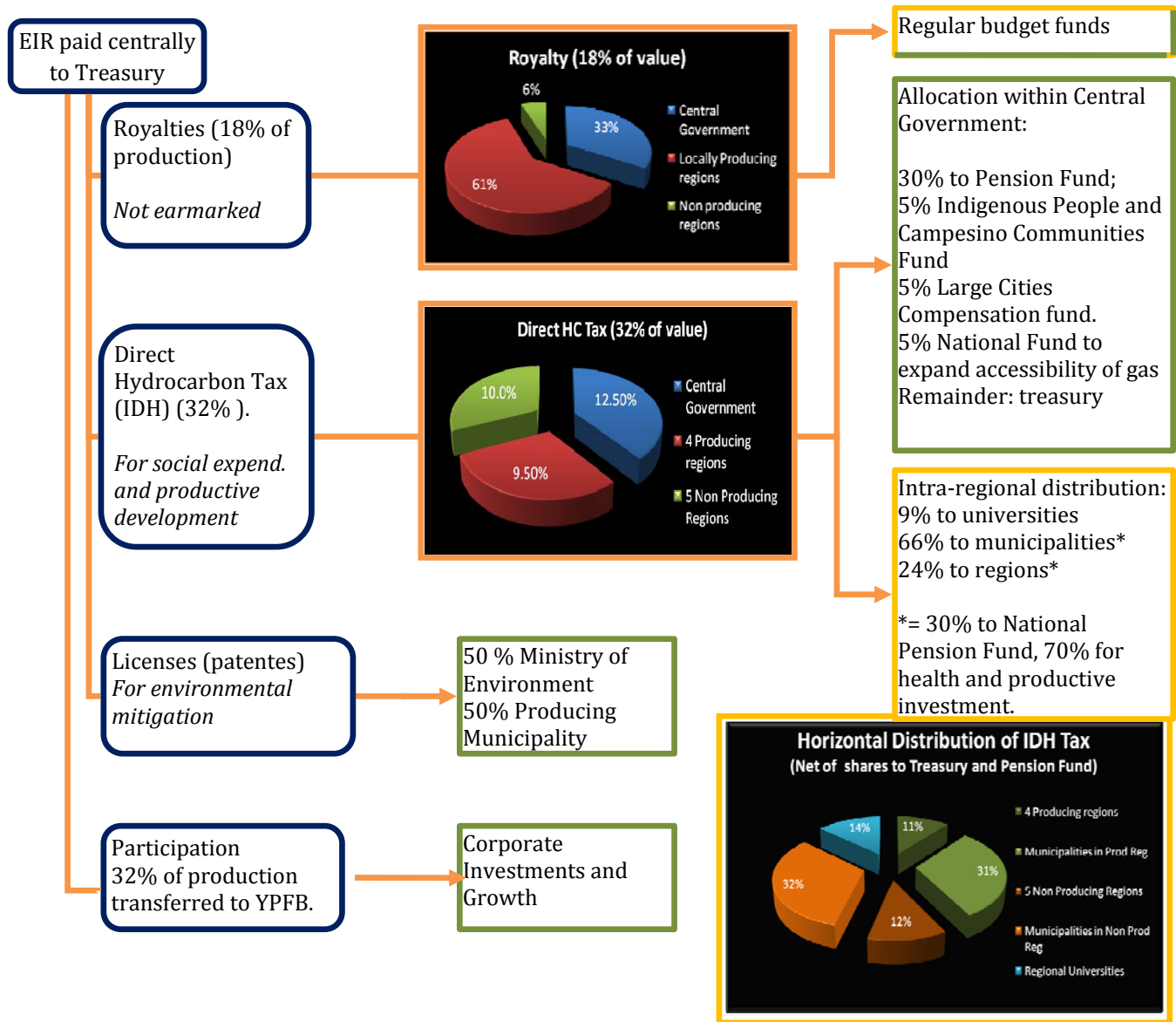
The 18% royalty is in most part assigned according to derivation rules to the producing regions (see Figure 6 below for details). On the other hand, the Direct Hydrocarbon Tax (IDH), which is intended for economic development and poverty alleviation of the entire country, includes a large number of beneficiaries: municipalities, regions, universities, old age citizens and a number of special funds¹⁰. While the Royalty distribution has remained unchanged since 2005, the allocation of the IDH has changed several times, and it is still the object of most political bargaining.

Producing regions (*departamentos*) receive a percentage of the value extracted, while producing municipalities receive equal treatment to non-producers within the same producing region. However, the law assigns 50% of the Extraction License (*Patente*) to the originating municipality, specifically for environmental mitigation. A tax of 0.5% on the value of any capital investment in exploration and extraction is attributed to the environmental protection agency, presumably increasing its resources as the demand for auditing and mitigation expands. The final distribution displayed below takes into account

¹⁰ (Faust, 2007)p. 27.

the weights of the two taxes, and incorporates the division of the revenues among sub-national entities that is prescribed in the presidential decrees.

Figure 6: Bolivia revenue sharing legislation



OUTCOMES AND STABILITY OF THE ARRANGEMENT.

Bolivia is the only country in the sample where there are *both* a high level of **distribution** by derivation *and* a (moderate) level of re-distribution to non-producing regions (which receive about 20% of the revenues). As shown in the table below, the take of the Central Government is relatively small (37%). It is also unique that the re-distribution does not take into account region-specific characteristics, such as population, size and fiscal capacity. To

partially redress the resulting imbalances, the Central Government instituted, out of its own share of revenues, a special fund for the 3 largest cities, and also a Departmental Compensation Fund financed by 10% of the fuel-products excise tax (Impuesto Especifico a Hidrocarburos y Derivaodos). Even after this grant, the final per capita distribution remains very unequal, with the lowest populated departments receiving almost twenty times the per-capita share of largely populated departments.¹¹

Vertical Distribution (Royalty + IDH)		Horizontal Distribution (Royalty + IDH)	
Central Government	37.00%	Central Government	37.00%
All regions	33.36%	Producing regions	26.60%
All Municipalities	25.74%	Municipalities in Producing Reg.	12.70%
Special entities (university)	3.90%	Non producing regions	6.80%
		Municipalities in non-Producing Reg.	13.40%
		Regional Universities	3.51%
Total Revenues	100%	Total Revenues	100%

In terms of **stability**, the distribution of revenues underwent at least four changes since 2005. In some cases, this reflects the overall change of economic policy that took place in the past four years within the country (like the introduction of Pension Fund and Nationalization). In most instances changes occurred in the context of the domestic struggle between the government and the four producing regions, which are led by political factions that pursue greater (if not complete) autonomy from the center. A further source of instability is the fact that the article of the Hydrocarbon Law that regulates the allocation of the IDH mentions a large number of beneficiaries, leaving to the presidential discretion its exact allocation. This has become the section of the legislation most affected to the political bargaining.

APPLICATION OF THE LAW AND TRANSPARENCY MEASURES.

According to a 2007 study on Gas Revenues Management in Bolivia¹², the main obstacles to transparency include:

- The complexity of the transfer system, which hinders revenue tracking from collection to distribution point.

¹¹ A projection for the year 2008 foresees a per capita allocation to the municipalities located in the departments of Pando (non-producer) and Tarija (producer) of 2,173 and 430 Bs respectively (net of shares to the Provinces and Pension Fund contributions) . Even accounting for the compensatory fund, the municipalities of the high-populated departments of La Paz and Santa Cruz receive respectively 119 and 111 Bs per capita. (Servicio de Informacion de Analisis Municipal, 2008).

¹² (Faust, Amy L. 2007)

- The discontinuation since 2004 of the practice of disclosing royalty payments between companies and YPFB, which is the first collector of revenues.
- The lack of regular disclosure of the amounts of the IDH *collected*, besides yearly projections published by the Ministerio de Hacienda and occasional press releases by the government.

Regarding the expenditure of the EIR allocated to SNGs, a reported problem is the lack of capacity of the central government to monitor the expenditure of the IDH at the regional and municipal levels. This has made difficult enforcing the many earmarks attached to the IDH, such as the payment to all citizens of health insurance. The situation is particularly problematic in the regions that are rising against the current government, which recently stopped reporting the utilization of funds¹³.

3.3 BRAZIL

Main Source of Extractive Industry Revenues: Oil and Gas

LEGISLATION ON REVENUE DISTRIBUTION

The main legislation regulating resource revenues from all natural resources used to be Law 7990 of 1989, which assigns *by derivation only* a modest share (up to 5%) of the value of

Distribution of regular royalties ¹⁴ (composed of two royalties, corresponding together to 10% of value extracted)		Distribution of "special participations" (about 109% of regular royalties in 2007)	
Producing States	52.50%	Producing states	40.00%
All municipalities in producing state	8.75%	Producing municipalities	10.00%
Producing Municipalities	17.50%	Ministry of Mines and energy	40.00%
Municipalities affected by transport	8.75%	Ministry of Environment	10.00%
Ministry of Science	0.13%		
Total	100%	Total	100%

hydrocarbons and minerals extracted to producing municipalities and states (see Appendix for details, p. 44). With the liberalization of the oil sector in 1997, new legislation (Oil Law,

¹³ (Prudencio, 2008).

¹⁴ A royalty corresponding to 5% of the value extracted is regulated by Law 7990/89, while a second royalty also corresponding to 5% of the value extracted is regulated by Law 9478/97 (and distributed under different rules). The current table provides an illustrative summary of the final distributional outcome of the two royalties combined together, for *on-shore* fields only. Producing municipalities and municipalities affected by transport have been grouped in a single category. The distribution of revenues from off-shore fields differs slightly. See the appendix for full details.

No 9478) allowed the entry of other actors in the industry. This law introduced an additional 5% royalty rate on all fields, and a “special “participation” for high-yielding fields, amounting to 10% to 40% of *net* revenues (depending on the depth of the well and on the quantities extracted).

Given the allocation of the royalty rates entirely to SNGs and earmarked projects, the main sources revenues for the central government is actually from regular corporate taxes and dividends in the national company Petrobras¹⁵, which represents 95% of hydrocarbon extraction in Brazil. Regular taxes include:

- Central Government: Corporate income tax (25%), Social Contribution Charge on Profits (9%), CIDE (a tax on retailing and import of petroleum products), PASEP (Social Security participation), Dividends from the 32% government stake in Petrobras¹⁶.
- States: ICMS, a tax similar to VAT (rate varies state by state).

The Figure 7 below summarizes the distribution of the regular royalties and of special participations. The graph displays the resulting final allocation, at 2007 values ¹⁷.

OUTCOMES AND STABILITY OF THE ARRANGEMENT

The Oil Law 1997 was drafted to provide incentives for all stakeholders to favor the industry’s growth (quite successfully¹⁸): it maintains relatively low royalty and profit tax rates, it provides proportional funding to specialized agencies that can foster expansion of

¹⁵For instance, in 2007 Royalties and Special Participations paid by Petrobras amounted to R\$ Mil. 14,835. Income Tax, Social Contribution Tax, and State VAT totalled R\$ Mil 28,793. However, since the company is also a major player in downstream operations and retailing, it is not possible to know how much the company would be paying in regular taxes only due to its extractive operations. In any case these figures demonstrate the importance of regular taxation in the overall revenues from extraction of hydrocarbons.

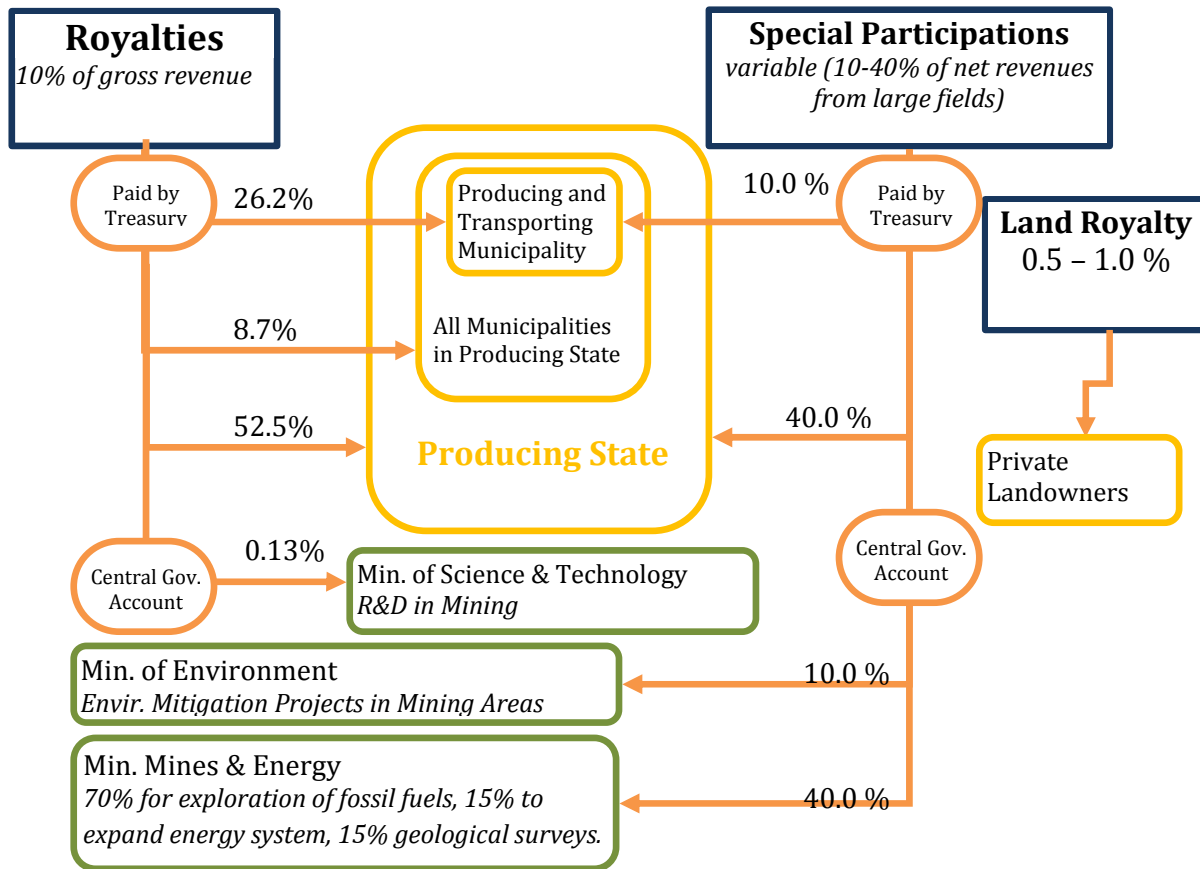
¹⁶ (Petrobras, 2006)

¹⁷ Though it is not possible to combine Royalties and Special Participation taxes in a single function, in the last 5 years on average Special Participations paid by Petrobras ranged between 96% and 111% of the value of paid royalties. So on average Special Participations amounted to 109% of Royalties. In this chapter we use this as a proxy of the relationship between the two rates.

¹⁸ One reason explaining the relatively low level of taxation is that revenues not captured by royalties would at least in part return to the treasury as dividends from the controlled Petrobras. Secondly, the Oil Law was designed to encourage exploration and increase national production through foreign direct investments, so it maintained the taxation level low (Marketwatch.com, 2008)and channeled a considerable share of the resources to technological development and geological exploration. In this sense the policy has been successful, as Brazil has recently become a net oil exporter , and gas production has also grow, though not sufficiently to match rising demand, (Energy Information Administration, 2008).

the sector and reduce its negative impacts, and it compensates (moderately) SNGs and private landowners for the externalities associated with the industry. Secondly, the low taxation levels may also reflect the central role of the government-led corporation in extraction. Perhaps due to the relative unimportance of natural resource revenues for the overall government budget, the law has remained unchanged since its establishment, so overall it appears to be relatively stable¹⁹. However, the spike in gas and oil prices has sparked recently a debate within the government on whether to introduce a windfall tax on profits, to align the taxation level to other countries in the region²⁰.

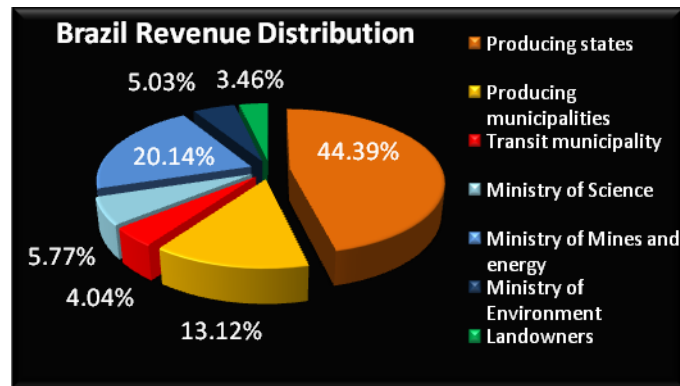
Figure 7: Brazil Oil & Gas Royalty Revenue Sharing legislation and distribution (on-shore fields)



¹⁹ The main changes to the 1989 Natural Resource Revenues legislation regarded the distribution of royalties revenues within the government share (across government agencies). The position of the states has remained unchanged.

²⁰ (Marketwatch.com, 2008)

Figure 8: Brazil Oil & Gas revenues Horizontal Distribution



APPLICATION OF THE LAW AND TRANSPARENCY MEASURES.

The National Petroleum Agency validates the information on production amounts and values provided by the extractive companies every quarter. Based on this information, the Secretariat of the National Treasury is then in charge of distributing the revenues to each beneficiary entity (Decree 2075/1998).

3.4 INDONESIA

Main Source of Extractive Industry Revenues: Oil and Gas

LEGISLATION ON REVENUE DISTRIBUTION

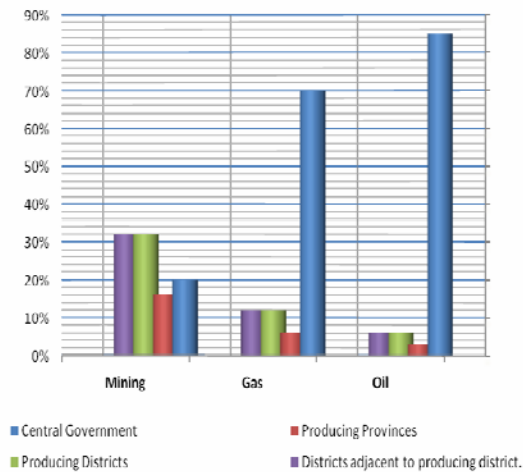
Revenue sharing from natural resource is regulated within the overall decentralization legislation (Fiscal Balance Law 2004 and Government Regulation 104/2000), except for the two special autonomous provinces of Papua and Aceh, which benefit from special regimes defined by specific laws (see annex for full details, p. 47).

Royalty revenues are distributed on the basis of derivation. Beneficiaries include Provinces (regions), producing districts, and all districts contiguous to producing districts (presumably to prevent assignment disputes, and to compensate for environmental costs of transportation across municipalities). Another noteworthy detail is that the government's take on oil & gas is almost the opposite of its shares in mining revenues (and other types of natural resources such as fisheries), where most revenues are retained at the source. This

may be related to the fact that revenues from Oil & Gas account for 25% of fiscal revenues while revenues from other resources only account for 1%²¹.

Indonesia is an interesting case because EIR are redistributed at the sub-national level *indirectly* through the overall fiscal transfers system. The amount of EIR collected locally by derivation discounts proportionally half of province's entitlement to the General Grant (DAU). The DAU is main intergovernmental transfer, which accounts for 60% and 16% respectively of the revenues of local and provincial governments²².

Figure 9: Indonesia Revenue Distribution

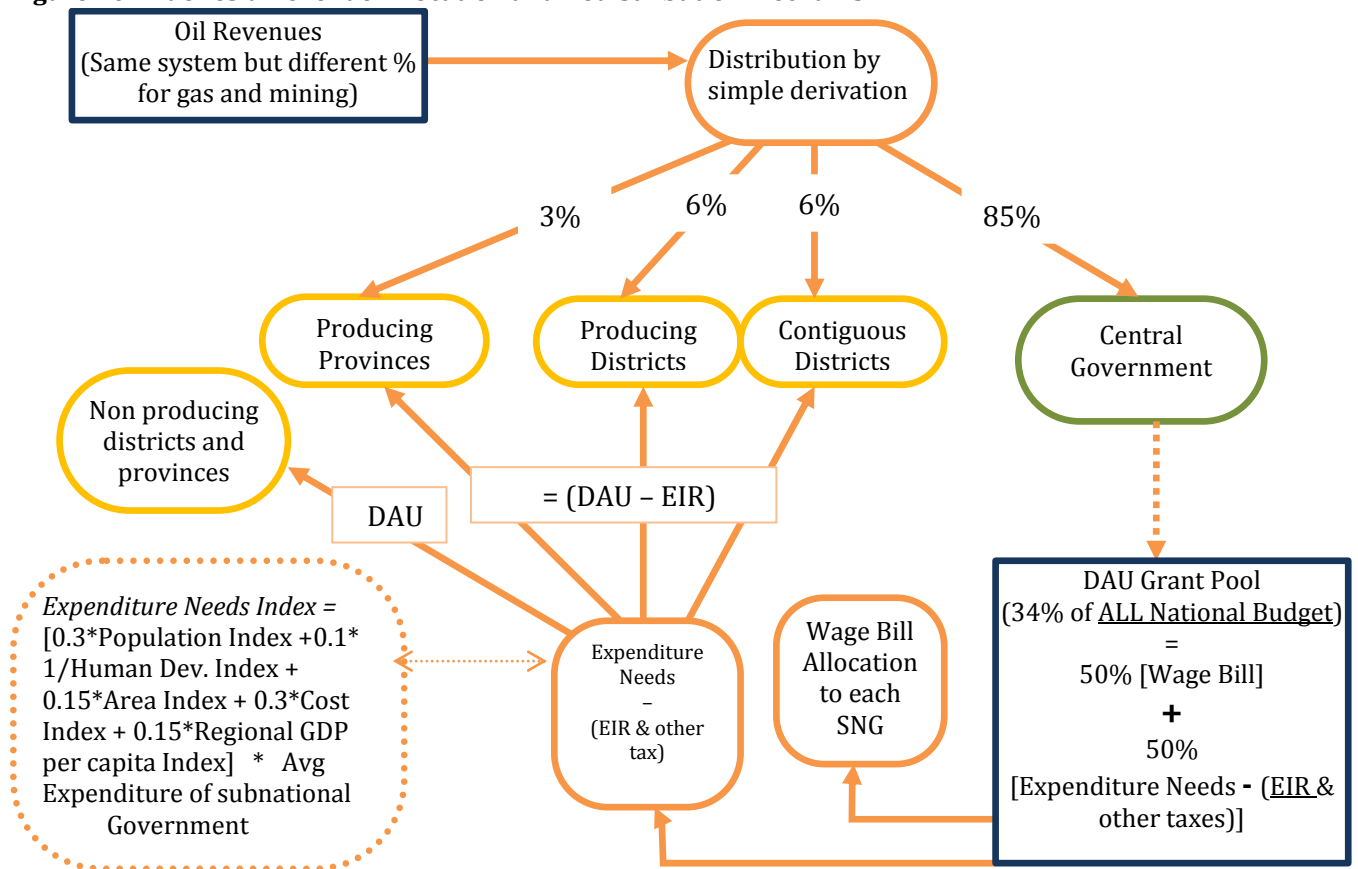


	Oil	Gas	Mining
Central Government	85%	70%	20%
Producing Provinces	3%	6%	16%
Producing Districts	6%	12%	32%
Districts adjacent to producing district.	6%	12%	32%
Non-producing Provinces & Districts	0%	0%	0%
Total	100	100	100

²¹ (World Bank, 2007a) p156. Figures include both tax and non-tax fiscal revenues from natural resources in 2007.

²² (World Bank, 2007a) p. 120

Figure 10: Indonesia Revenue Allocation and Redistribution Mechanism



Half of a province’s share in the DAU Central Pool is calculated as the difference between a formula-based “expenditure need”, minus the province “collected revenues”. The expenditure needs are based on objective criteria including population, size, per capita GDP (see graph for full formula). The other 50% of the DAU is based on the wage bill that each region had at the time decentralization was first implemented.

Allocation of DAU = 50% (Wage Bill) + 50% (Expenditure Needs – Collected Revenues).

Since the natural resource revenues are entirely accounted within the “Collected Revenues” of the province, the formula may reduce by up to 50% the share of DAU to which a province is entitled.

DISTRIBUTIONAL OUTCOMES AND STABILITY

In spite of the equalization mechanisms, the World Bank calculated that *EIR distribution remains the main driver of the high inter-regional inequality*, with 5 out of 33 provinces receiving most of the revenues; this happens because provinces are receiving from the

shared EIR more than what they forfeit through the DAU formula. The elimination of the Wage Bill from the DAU formula would significantly improve its equalization effect²³.

The current revenue sharing framework was first introduced by the Fiscal Balance Law of 1999, subsequently replaced by a similar law in 2004 and specified in Government Regulation No. 104/2000. Although the derivation principles have not changed and are not being challenged²⁴, the DAU formula has been subject to political pressures (and temporarily changed) from revenue-producing regions during the first years of decentralization, and the DAU allocation to the two autonomous regions was also re-negotiated recently.

APPLICATION OF THE LAW AND TRANSPARENCY

In terms of revenue transparency at the SNG level, the World Bank's general finding on public financial management have implications also for the situation of EIRs :

- SNG reporting duties of fiscal and financial information to the central government are in many cases not carried out. In spite of the State Audit Law (No. 15/2004), 40% of SNGs are not audited, due to staffing deficiencies in the national auditing agency.
- Sub-national governments are under no obligation to publicly disclose fiscal and financial information, and the vast majority does not make such information available.

At the upstream level, the only information available for the public is the amount of revenues in each sub-sector (mining, oil, gas, etc) that should be shared in each region, though there is no rough data to verify this. At the municipal level there is no public information about EIR allocation. The inability to reconcile accounts and to trace amounts back to the formula has fostered suspicion on the way that the shares are calculated by the central government²⁵.

3.5 NIGERIA

Main Source of Extractive Industry Revenues: Oil and Gas

LEGISLATION ON REVENUE DISTRIBUTION

²³ (World Bank, 2007a). p 130

²⁴ (Chandra Kirana, 2008)

²⁵ (Chandra Kirana, 2008).

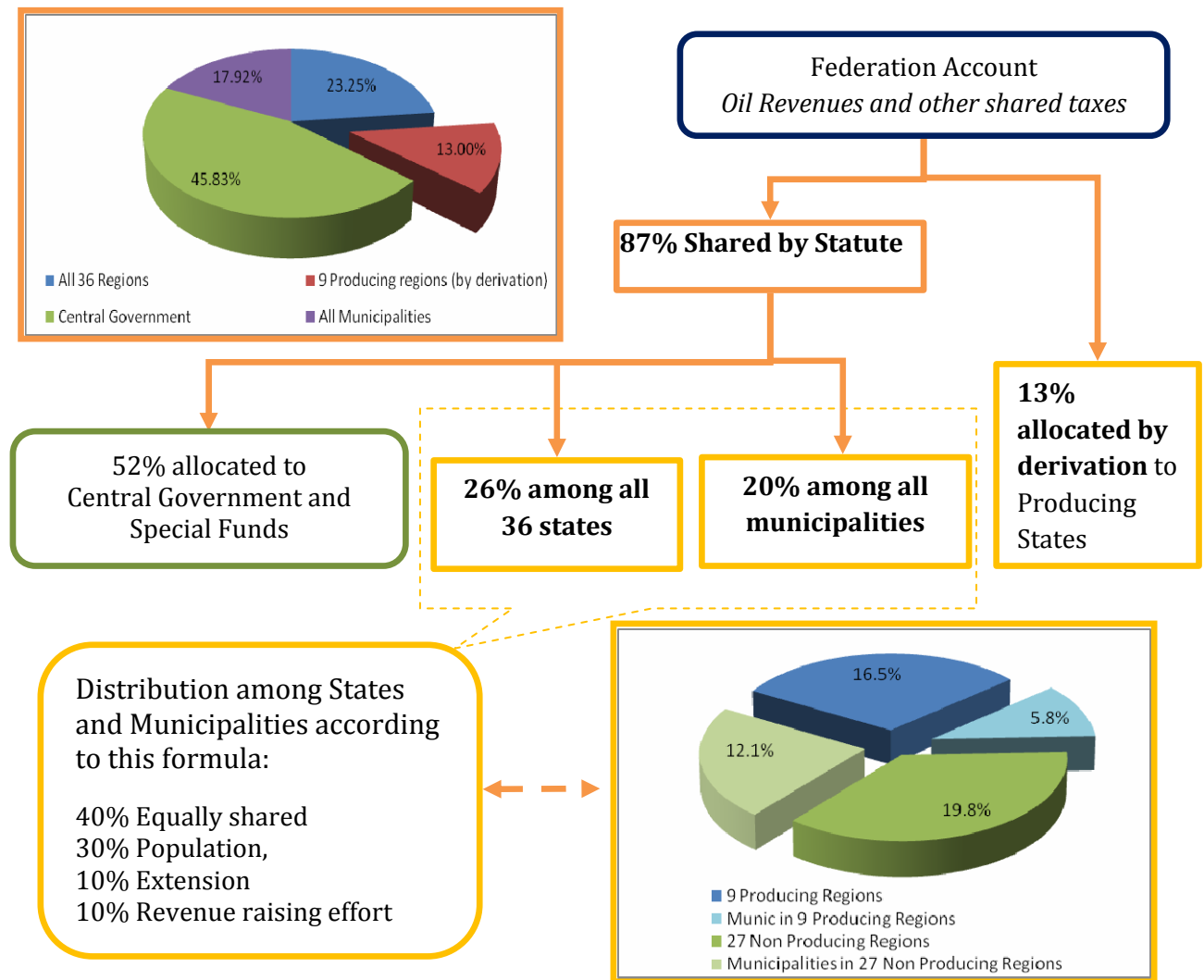
The revenue distribution is regulated by Art 162 of the 1999 Civilian Constitution (See Annex 2, page 44). The law requires *all revenues* from the production of oil (representing 72% of the budget) to be channeled in a “Federation Account”. The other revenue source of the Federation Account is VAT (representing 7% of the pool).

After deducting “first line charges”²⁶, 13% of the Federation Account pool is paid to producing states by derivation. The remainder is distributed according to a formula, which is decided by an ad-hoc commission, and never changed since 1999. The formula allocates funds both at the state and at the municipal levels, with the following weights: 40% equally across all states, 30% by population, 10% by extension, 10% by revenue raising effort and 10% by social development effort. The share to the Central Government includes a 7% allocation to special funds, which include: a stabilization fund, an ecological fund to mitigate environmental damages, a fund for the development of the Natural Resource sector, and an extra allocation to the Federal Capital (see Figure 11).

Vertical Distribution		Final Horizontal Distribution	
Central Government	45.83%	Central Government	45.83%
All 36 Regions (by formula)	23.25%	9 Producing Regions	16.45%
All Municipalities (by formula)	17.92%	Municipalities in Prod. Regions	5.81%
9 Producing regions (by derivation)	13.00%	27 Non-producing Regions	19.80%
Total	100%	Munic. in Non-producing Regions	12.11%
		Total	100.0%

²⁶ These include Joint Venture cash calls to finance the Nigerian Petroleum National Corporation.

Figure 11: Nigeria Revenue Sharing



OUTCOMES AND STABILITY OF THE ARRANGEMENT

Since the almost entirety of SNGs funding depends on federal transfers²⁷, the statutory formula plays a fundamental role in the allocation of revenues across sub-national governments. Only 40% of the formula allocation is based on the states' population and social development levels, so that the current revenue-sharing mechanism benefits mostly middle and high-income regions, and it does not target the regions with the highest population or poverty levels²⁸. Also, since the allocation to municipalities is first allocated to

²⁷ Federal Account funding amounts to 93% of municipalities' revenue. (Adespo, 2006)

²⁸ (Sing, 2003), p. 17

each region, and then shared across municipalities, regions with more municipalities are further penalized²⁹. Including the effect of derivation, in the final horizontal distribution 9 of 36 regions receive 41% of the resources allocated to SNGs. Secondly, oil producing communities and local governments argue for direct control over the oil derivation fund – which is currently controlled and apportioned by State Governments.

Since its latest reform in the 1999 civilian constitution, the distribution arrangement has not changed, but its legitimacy is constantly challenged. Though it is recognized that the current formula should be improved, the issues is so contentious that that the most recent reform proposal from the ad-hoc Commission did not move forward in parliament³⁰.

The failure to generate economic development, employment and poverty reduction through oil revenues is at the base of the high level of instability that the producing regions are experiencing. For large sections of the population, including ethnic groups such as the Ogoni People- the costs in terms of environmental damage, institutional deterioration and economic inequality far exceed the benefits of relatively high oil revenues. This in turn legitimizes the requests for increasing substantially the derivation share, often accompanied by vandalism of infrastructure, rioting and violence, carried out by organized groups such as the Movement for the Emancipation of the Niger Delta (MEND)³¹.

APPLICATION OF THE LAW AND TRANSPARENCY

The application of the revenue distribution arrangement has faced both judicial and practical challenges³².

- The Supreme Court ruled in favor of the Government in a major dispute against coastal states about ownership of oil extracted off-shore.
- The absence of clear procedures for the handling of local government allocations deposited by the federal government into state-controlled joint allocation accounts undermines local government public finances. Holding joint-accounts between states and municipalities in a context of weak controls does not ensure that the published amounts are actually transferred to the local government levels.
- Since 2003, the government has also taken steps to increase revenue transparency at the state and local levels of government. The monthly allocations from the federal to the state and local governments are published each month on the Ministry of Finance website and in local newspapers. First introduced in 1999, the Freedom of

²⁹ (African Network for Environment and Economic Justice, 2004) p. 55

³⁰ Information gathered from Consultant working on EITI in Abuja.

³¹ Based on contribution of Revenue Watch Institute expert (Heuty, 2008). Also see (African Network for Environment and Economic Justice, 2004) Chapter 2.

³² Following paragraphs based on (Heuty, 2008)

Information (FOI) bill still has to be approved and forced into law. Recent efforts to pass the FOI have been delayed by the legislature, which represents a major impediment to monitoring oil revenue management.

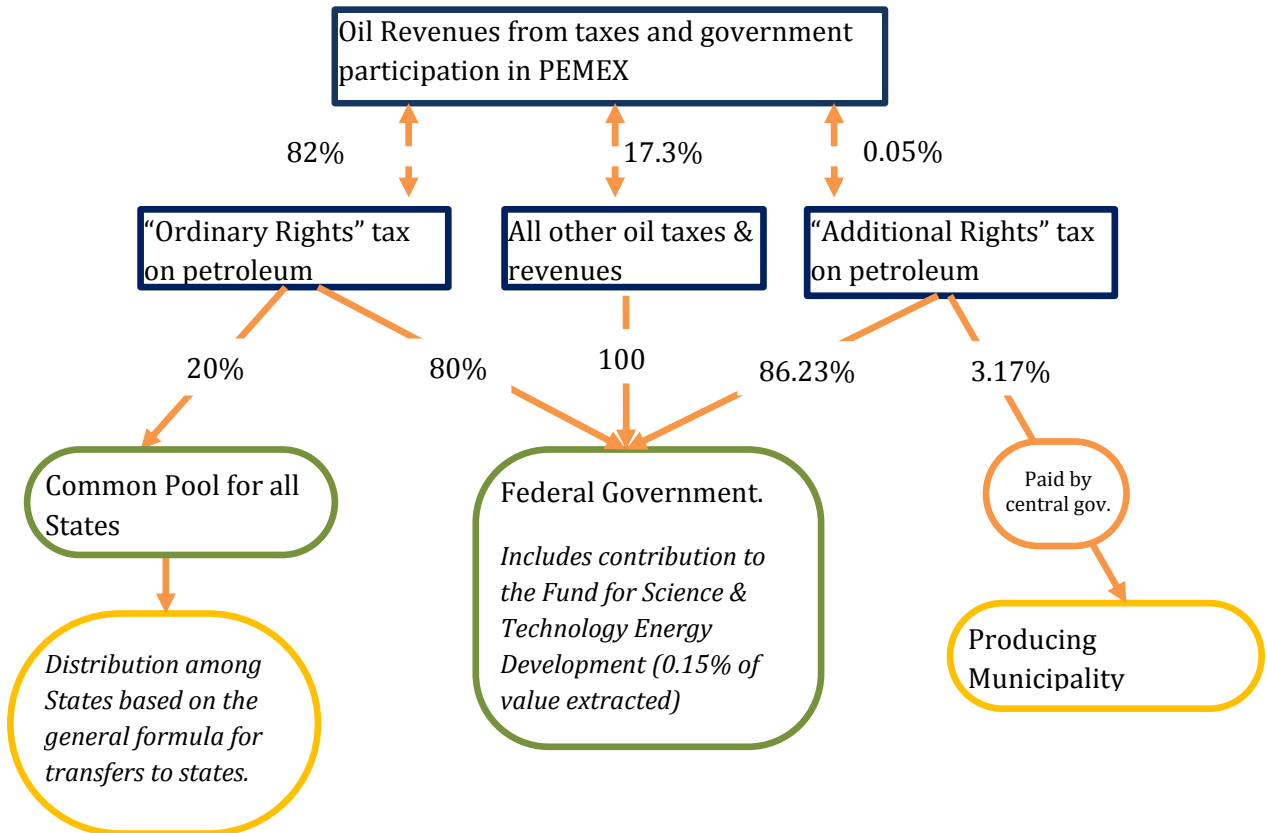
3.6 MEXICO

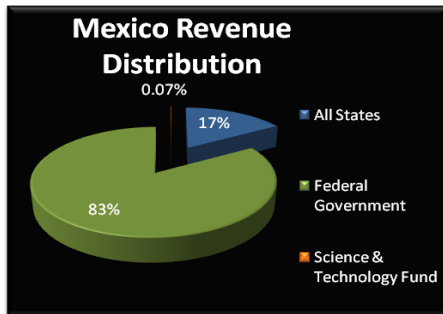
Main source of extractive industry revenues: Oil

LEGISLATION ON REVENUE DISTRIBUTION

Like in the Indonesian case, Mexico’s revenue sharing mechanism is embedded in the overall intergovernmental fiscal framework (Law of Fiscal Coordination 1978). Art 3 of this law assigns 20% of “Ordinary Extraction Rights” to the general pool of shared taxes. This pool is distributed among the States according to a complex formula based on population, fiscal capacity and equalization. In 2007, Ordinary Extraction Rights accounted for about 82% of the overall government revenues from oil. Thus the effective take of the states through this tax was about 16.5% of the total oil revenue.

Figure 12: Mexico Revenue Allocation





Vertical Distribution	% of oil revenues
All States	16.52%
Federal Government (incl. 0.07% Science & Tech Fund)	83.48%
(Derivation) Municipalities	0.002%
Total	100.00%

To place this in perspective, oil revenues constitute about 30% of the states' budget, and about 37% of the entire national budget.

Municipalities participate to 3.17% of the “additional rights on oil extraction” (A tax amounting to less than 1% of the “ordinary” extraction rights), so that the final derivation is a negligible share of the total³³. A special tax equivalent to 0.15% of the gross revenue extracted is allocated to a Fund for Scientific and Technological Research in Energy³⁴. In this long-standing arrangement there is *no link between oil revenues distribution to SNGs and derivation*, except for the minimal share accruing to producing municipalities.

DISTRIBUTION OUTCOMES AND STABILITY OF ARRANGEMENT

In spite of being entirely oblivious of states and local government, this arrangement has been remarkably stable over the years. However, we should also note that the legislation dates back to the period of political monopoly of the Mexico's one party (PRI) at all government levels. Analyzing the distributional outcomes in this case would require a broader review of the entire fiscal decentralization system of Mexico. At the macroeconomic level blending oil revenues in the general pool for state transfers (which decentralizes overall 25% of government revenues) has lowered the volatility of funds³⁵, which is usually one of the main problems of revenue decentralization in EIR-dependent countries. More research would be needed to understand to what extent other negative externalities of petroleum extraction at the local level are being adequately addressed with this system.

³³ On average, in the periods March 2004 – March 2006 (latest data available), the revenues from “additional rights” represented 0.07% of the “ordinary” extraction rights, amounting to about 296 Million Pesos per year. This means that all municipalities receive by oil derivation 9.4 million pesos a year, about 0.89 M US\$. Author's calculation with data from Mexico Secretaria de Hacienda y Credito Publico.

³⁴ This tax will increase progressively to reach 0.65% by 2011. (Congress of Mexico, 2007)

³⁵ (Ahmad, 2002), p. 17

3.7 PAPUA NEW GUINEA

Main source of extractive industry revenues: Oil and Gas

LEGISLATION ON REVENUE DISTRIBUTION

The Oil and Gas Act 1998 and the Mining Act 2002 regulate the exploitation of natural resources, including the allocation of revenues. Within this very articulate arrangement, revenues derive from Royalties, Corporate Income Taxes, and Equity Stakes assigned to the Government at project inception.

All revenues from the relatively low royalties (4% of value extracted) are assigned to sub-national entities, which include: municipalities, regions, holders of communal title to the land and private landowners. A Development Levy equal to a 2% royalty is reserved for the derivation municipality and province, while the remaining 2% is shared among all public and private landowners: the exact split among them depends on the amount of land occupied. There is no redistribution mechanism to benefit non-producing territories.

These royalties amount to only 10% of the total public revenues from the sector. The main sources of revenue (entirely attributed to the central government) are an ad-hoc Profit Tax of 40% and a Dividend Withholding Tax of 10%.

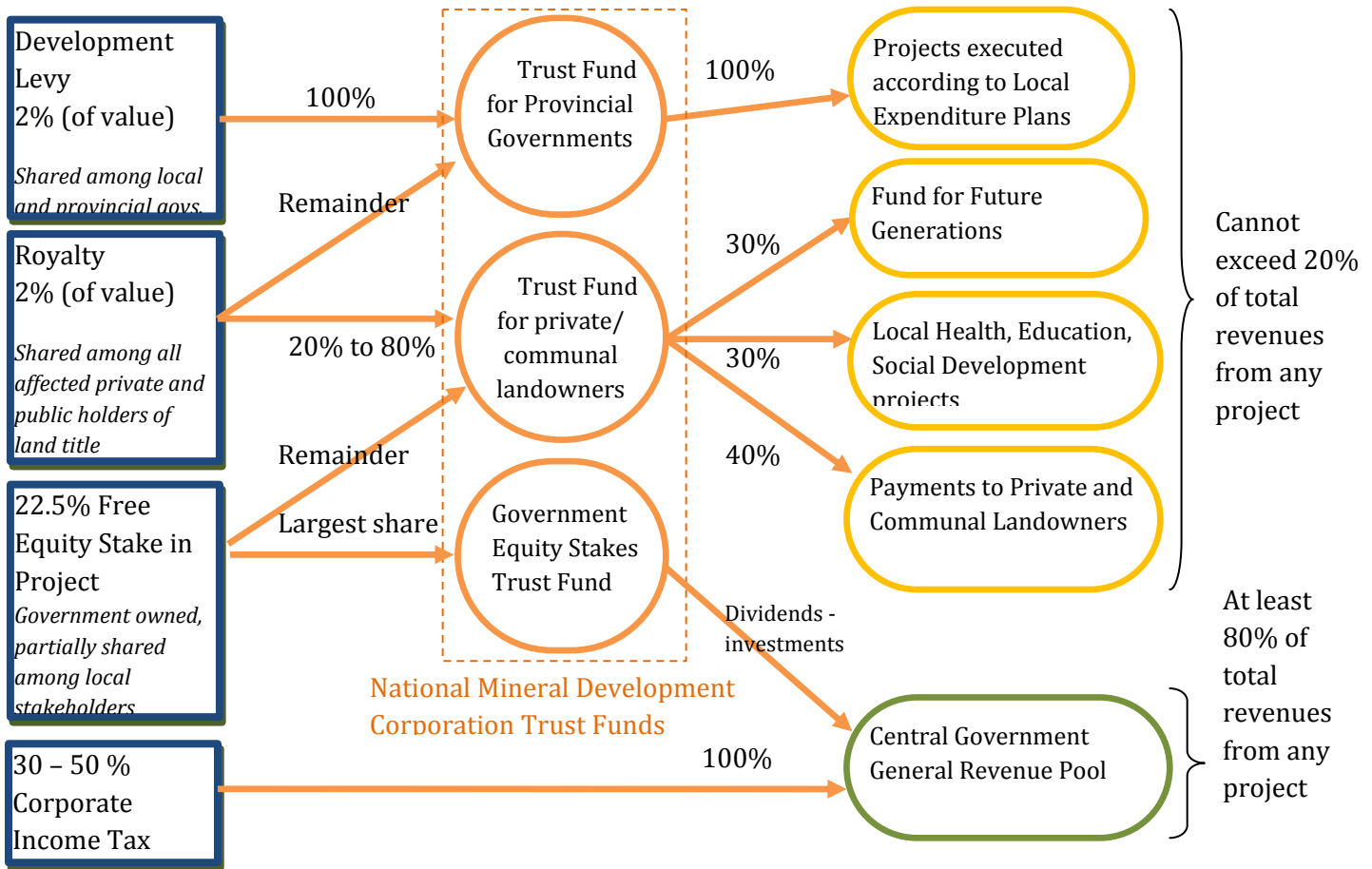
In addition to these taxes, the State is entitled to receive for free a 22.5% equity stake in the project, which is then in part assigned to local landowner beneficiaries. The public equity owners are treated like any other commercial partner: they need to finance any cash call for investments through own resources or by seeking external financing, and they also participate to profits. The main rationale of the provision is to ensure that the government and local communities become part of the project, sharing its revenues and risks.

The law requires a prior social mapping exercise to define all effective landowners; another peculiarity of this arrangement is that a trust fund managed by a government agency holds the royalties and equity share for each beneficiary, to be disbursed only for authorized expenditure types.

Besides these direct financial benefits, the legislation also includes a range of provisions that tries to integrate the development process of corporations and local communities:

- Infrastructure tax credit scheme whereby the developers may spend up to 2% of their assessable income on infrastructure for the community.
- business seed capital grants from the Government to help landowners start business associated with the petroleum projects;
- An obligation on the developers to foster the use of local labor for the delivery goods and services.
- MoU between the Government and the landowners, and local level and provincial governments for an array of community projects.

Figure 13: PNG Oil & Gas Revenue Allocation Law



DISTRIBUTION OUTCOMES AND STABILITY OF THE ARRANGEMENT

A provision in the Oil and Gas Act forbids the aggregate revenues distributed at the subnational level to be greater than 20% of the net total revenues, so by law the government receives at least 80% of the revenues. However, available data on the revenues from Oil only in the last 10 years suggest that in that sector royalties represent on average 10% of the total revenues³⁶, which are entirely devolved at the subnational levels.

APPLICATION OF THE LAW AND TRANSPARENCY

³⁶ Data provided by former official working in PNG Oil and Gas sectors. More information on income tax revenues from all revenue sources (oil, gas, and mining) would be needed to calculate the effective share of the total EIRs that accrue to the central government at the country level.

The most recurrent finding of a consultation of stakeholders in preparation for the EITI in PNG was that revenue transparency is mostly problematic at the sub-national level³⁷. The payment of a large number of private landowners, either individually or through “incorporated landowners groups”, requires transactions, including handing out cash, that cannot be monitored top-down. This may be the main drawback of the current arrangement in PNG. In the case of Mining revenues, the law is particularly problematic because benefits are distributed directly by the company to the beneficiaries. As in other cases, major challenges remain in monitoring expenditures and in ensuring that the allocations to municipalities and individuals are used for social development as prescribed by law.

An often-mentioned preoccupation among upstream government agency representatives regarded the local level inequalities generated by the law and the need not to advertise too widely the revenue that some communities receive. In their view, implementing local-level citizen-driven monitoring could ignite local conflicts, or individual citizens suddenly “empowered” could rise against their local strongmen, and communities that are not benefited could perceive to be treated unfairly. Likewise, officials commented that dissemination of revenue payments information nationwide could potentially incite resource-poor regions to challenge the current arrangement.

3.8 GHANA

Main source of extractive industry revenues: Mining

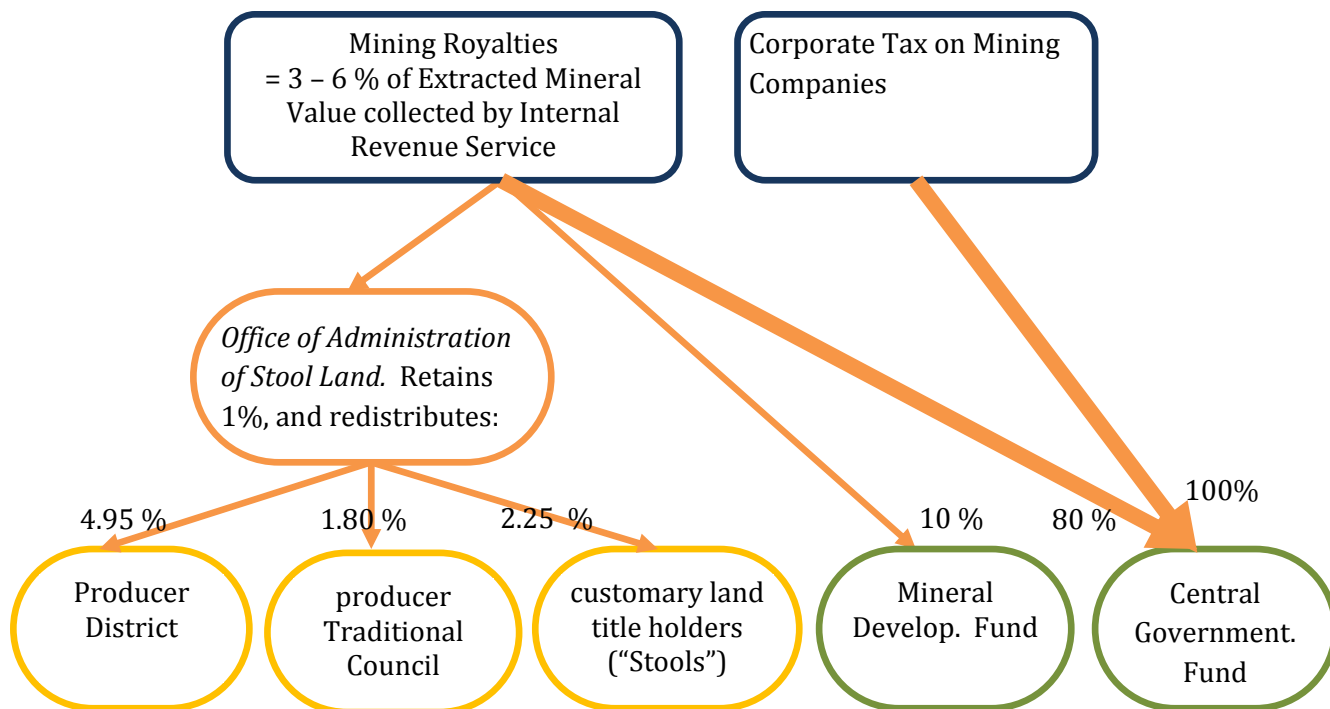
LEGISLATION ON REVENUE DISTRIBUTION

The extractive industry in Ghana consists mainly of mining operations, which provide 12% of total government revenues. The mining legislation was recently updated through the new Minerals and Mining Act 2006 (703), which sets Royalties at a rate between 3% and 6% of the value extracted, depending on the return of the investment. The distribution arrangement of revenues across levels of government has remained unchanged, and it is regulated by Chapter 22 of the 1992 Constitution and by an Administrative Fiat of 1999 (See Appendix, p. 50). Overall the system centralizes most resources, assigning by derivation only 9% of the Royalties. However part of the central government’s shares are redistributed through the District Assemblies Common Fund, which by law should be no less than 7.5% of the total central revenues. These funds are then redistributed to the District Assemblies according to a formula agreed by parliament every year.

All revenues are collected centrally by the Controller and Accountant-General, which transfers the funds for distribution to the SNGs and private beneficiaries to the Office of Administration of Stool Lands. This agency has several branches in the country.

³⁷ (Pastre', 2006) Annex 2

Figure 14: Ghana Revenue Distribution



DISTRIBUTION EFFECTS

In 2004, Royalties represented about 89% of revenues from mining, the remainder deriving from Corporate Tax (3%), Property Tax (1%), Dividends Tax (7%) and Ground Rent³⁸. Given the distribution arrangement of royalties, the government effectively receives almost the whole of the revenues from mining. And in fact one of the reported challenges to the current legislation is that SNGs feel the shares that they receive are just too small, in particular the owners of stool land³⁹.

APPLICATION OF THE LAW AND TRANSPARENCY⁴⁰

- To a large extent the formula has been adhered to, the major challenge has been delays in the release of the funds by the central agencies, and the utilization by local institutions.

³⁸ Ghana Ministry of Finance and Economic Planning (2007) p. 27

³⁹ (Kuyole, 2008)

⁴⁰ This section was prepared with the contribution of the RWI local expert. (Kuyole, 2008)

- The payments to the local institutions are not required by law and this weakens their capacity to assert and enforce a right to receive them. A similar issue regards the lack of legislation regulating the operation of the Mineral Development Fund, which incorporates 10% of the revenues.
- As it was the case in Papua New Guinea, the preliminary evidence from an EITI report on Ghanaian accounts shows that even where corporate payments match national revenues, monitoring the allocation to the lowest tier of beneficiaries remains challenging. Stools and Traditional Councils lack upstream information to monitor whether they are receiving the correct amounts from the regional branches of the Office of Administration of Stool Land. Secondly, it is difficult to understand how the allocation is divided among neighboring stools or traditional authorities⁴¹.
- Regarding revenue payments, no accountability mechanisms can be introduced until information about the revenues to be paid to each institution becomes available. Secondly, at present no procedures are in place for traditional authorities to report expenditures, and there is no mechanism to audit the utilization of these funds.

⁴¹ Ghana Ministry of Finance and Economic Planning (2007), p. 39-40

4. SUMMARY OF FINDINGS AND CONCLUSIONS

What share of the revenues should be allocated to producing regions?

Almost all the countries considered in this paper share some of their revenues from extractive activities with sub-national governments *on a derivation basis*.

However, according to the economic literature revised in this paper, a high level of decentralization of EIR at the subnational level may lead to inefficient and inequitable allocations, due to the specific challenges that such atypical revenue streams present. These include the “Dutch Disease”, revenue volatility, planning and expenditure capacity constraints of local agencies, lack of functional responsibilities proportional to the revenues, absence of external controls, and institutional deterioration.

At the same time, the country-specific literature indicates that hosting extractive activities in a territory generates by itself economic and social costs, and for many local actors the net effects of these operations have been negative⁴². In this context, compensating producing regions with a share of the total revenues is more than legitimate. However, the literature also shows that a mere transfer of resources at the local level is not a sufficient remedy against the negative externalities of extractive activities, and in absence of an explicit strategy that can spur economic development and employment, and safeguard institutions and the environment, these resources may in the long run even become counterproductive forces for development (resource curse).

The legislation surveyed in this paper contains several provisions that attempt to specifically redress the negative effects of extraction, either by mitigating externalities or by introducing mechanisms to make the EI an engine of development. These include social development funds, environmental mitigation funds, infrastructure expansion requirements, local labor requirements and participation in equity stakes.

Understanding whether these targeted policies are delivering the expected policy objectives, and what is the optimal expenditure amount at each government level beyond which the revenues are no longer effective is outside the scope of this study, but it would greatly inform the discussion on what minimal or maximum share of revenues should be assigned by derivation. On a related point, it would be important to understand what types of unintended incentives may be associated with the assignment of high shares of revenues at the local level by derivation. For instance, in cases where the local governance structure is not fully inclusive, local governments could be induced into excessive moral hazard behavior, by attempting to attract extractive industry investment even where the environmental costs are high, and this may be even more problematic in cases where the

⁴² (Duncan C., 2007), (African Network for Environment and Economic Justice, 2004); (Dietsche, 2007) p. 57ff. (Tordo, 2007), (Overseas Development Institute, 2006).

groups that are mostly affected are not adequately represented (such as indigenous groups)⁴³.

Redistributing revenues at the sub-national level

Countries in which EIR represent a large share of the budget (Nigeria, Bolivia, Indonesia and Mexico) seem to be more likely to have in place *mechanisms for the partial redistribution of revenues among all regions (between 17% and 41% of revenues)*. The cases that we considered suggest that at least three interplaying factors determine the effectiveness of any re-distribution mechanism:

- *The share of total revenues allocated for re-distribution to all regions rather than to producers only.* This is particularly important where production is concentrated in a minority of regions: in such case, even a relatively small derivation assignment can generate strong inter-regional imbalances.
- *The distribution formula.* The case of Bolivia shows that a failure to introduce in the redistribution formula weights that consider population and income levels may generate more inequalities than assignments by derivation in terms of per-capita allocation.
- *The role of other compensatory mechanisms within the fiscal architecture of the country.* The fiscal context determines the outcome of any distribution mechanism: for instance a centralization of revenues may be an effective way to redistribute funds equitably and efficiently, if the central government pursues an overall fiscal and expenditure policy that favours disadvantaged regions. An example of this balancing effect is the DAU Grant formula in Indonesia, by which non-producing regions receive automatically more funds than producing regions from the general pool of collected taxes.

Nevertheless, even where redistribution mechanisms are in place, the country studies show their limited effectiveness in redistributing resources in favour of the poorest regions (Indonesia, Bolivia, Nigeria), either due to the inadequate formula or to the limited amount of funds redistributed.

Political Economy of distribution and stability of the revenue-sharing arrangements.

The political economy of EIR is by definition idiosyncratic in each country. Nevertheless the case studies allow us to draw some lessons learned that may be transferable to other contexts. In particular, the legitimacy of a revenue distribution arrangement was found to

⁴³ (Duncan, 2007) reporting on the impact of decentralization in Indonesia's indigenous groups provides evidence that such type of risk exists.

be sensitive to several factors that seem to transcend the crude percentage of funds assigned to each government entity:

Shared Purpose

While no legislation on revenue sharing can satisfy fully all actors that intend to partake in the revenues, agreeing on a rationale that underpins the distribution may guide the preparation of an intelligible mechanism based on objective criteria, and in this way increase its legitimacy among most stakeholders. Given this premise, it is important that any new revenue-sharing legislation be preceded by an inclusive dialogue, which can produce a basic consensus on the intended purpose of these resources within the national development agenda.

Transparency

In several country studies it emerged that *the perception of non-producing regions of receiving a fair treatment is as important as the effective distribution of revenues*. The complexity of the revenue sharing formula, or the unintelligible interplay between the EIR sharing mechanism and other fiscal equalization mechanism, may cause unwarranted unhappiness among non-producing SNGs.

Clarity of legislation

Ambiguities in the legislation can lead to discretionary application, or increase the likelihood that some actors challenge part of the existing arrangement: these may regard the percentages allocated to each group (Bolivia), or the calculation of any specific factor in a formula (Mexico). Even if not challenged, ambiguities can still give rise to suspicions of mismanagement or preferential treatment (Indonesia, Mexico).

Universal Application

As with any other legislation, any derogation weakens the legitimacy of the rule. In this context, negotiation of “special agreements” on a region by region basis can be problematic, as it sets precedents for other actors, and it sends the message that politics and not policy is the driver of the legislation⁴⁴.

Achieving transparency at the sub-national level:

Management of EIR at the sub-national level presents challenges to transparency similar to those faced by central governments, with additional practical constraints due to the lack of “infrastructure” to monitor both payments and expenditures. It is not only a question of “will” to be transparent, but also of simple circulation of information, local capacity to understand the agreement, and coordination between agencies.

In almost every country analyzed, the disclosure of full information about shared revenues up to the local level is either absent or incomplete. Secondly, the complexity of the revenue

⁴⁴ (Searle, 2004)

sharing mechanism may make more difficult for SNGs to verify the correct payment of their share of revenues, unless each step of the payment process is clarified and quantified.

The cases also highlighted that the lack of transparency at the upstream level affects directly transparency at the lower levels. For instance in Bolivia and Indonesia the total amount available for re-distribution cannot be computed by SNGs independently, because the production amounts and the related revenues paid into the central account are not published systematically. In such cases, even a full publication of the formula and the resulting shares may not guarantee that the revenues are shared as the law prescribes. In this respect, confidentiality clauses on corporate tax payments can also reduce the capacity SNGs to monitor in full the revenue-sharing process.

Finally, the distribution of revenues through a chain of beneficiaries (such as regional government paying local governments out of their own account) rather than through designated accounts for each beneficiary entity may hinder monitoring from the center or from the grassroots. This can be particularly problematic if the local government is politically isolated or when there is no control mechanism. The same problem may be faced by local governments or private beneficiaries when regional branches of central revenue agencies are in charge of local payments (Ghana).

Regarding monitoring of expenditures, the country studies confirm an intuitive point, that transparency on the use of EIR will depend primarily on the overall financial management and control systems that are in place for the entire budget of SNGs. Due to the fungibility of the resources, if the local government engages in resource misappropriation and corrupt practices, EIR may be either directly or indirectly (by substituting other missing revenues) finance these activities. However, a more general shortcoming that emerged in various countries did not regard corruption per se, but rather lack of information on expenditures. Once the funds are paid into the local budget, there is rarely a separate accounting system to monitor how the funds are used.

In this respect, an accounting system to trace the expenditure of EIRs would serve two purposes. On the financial management side, it would facilitate assessing whether the statutory earmarks are being enforced. On the policy side, separate accounting would enhance the understanding of the spending behavior of local governments, and, in select cases, it would allow the evaluation of the development outcomes of the individual projects. Besides serving as incentives to focus on poverty-reducing expenditures, this type of controls would finally provide some relatively objective information to feed the national debates on the effectiveness of EIR decentralization.

Finally, the case of PNG highlighted the practical difficulties in monitoring the utilization of funds among the large number of private landowners, and the even more arduous task of assessing the distribution of resources within the indigenous communities that hold communal titles and receive the funds as a group. In addition to the monitoring challenge, further research could ascertain the effects of incorporating indigenous groups in a

revenue-sharing mechanism on their internal economy and social structure. As much as EIR at the SNG levels may produce unintended results, it should not be taken for granted that the direct distribution of funds to private actors, especially if unconditional, is per se beneficial.

APPENDIX 1: TERMS USED IN THIS STUDY

Subnational Governments (SNG): wherever not specified otherwise, this study assumes three levels of government: Central Government, Regions and Municipalities. In some countries Provinces or States are the equivalent to Regions, and Districts or Local Governments are the equivalent of Municipalities. “Producing” governments are those where the natural resource is extracted, or offloaded (if the platform is off-shore); “transporting” governments are those through which the resource is channelled by oleoduct or pipeline.

Revenue allocation mechanisms:

By Derivation: a percentage of the revenues (usually a share of the market value of the resource at extraction point) is allocated upfront to the producing territory (this can apply to both Regional and Local governments). The remainder of the revenues are either retained by the central government or partially redistributed.

By Statutory Formula: any revenue that accrues to a common pool is distributed among a set of beneficiaries across all levels of government, according to a set formula. The formula may include a series of characteristics (such as population size, per capita income or revenue collection effort) to determine the shares allocated to each entity.

Undifferentiated: No subnational entity is entitled by statute to a share of the natural resource revenues accruing to the central government. In this case any redistribution of these revenues occurs as part of the regular budget process. The revenues in this case are fungible, and may be partially redistributed as part of the general allocation assigned to subnational governments within the national budget.

Revenue Distribution measures:

Vertical Distribution: displays the allocation of resource revenues across levels of government (Central, Regional and Local). It does not assume that the distribution is even among peer governments of the same level.

Horizontal Distribution: It shows how revenues vertically allocated to a particular level of government are then distributed among peer entities (such as among Regions or Local Governments). Horizontal allocations can be determined by Derivation-based mechanisms, by Formula-based mechanism or by both.

APPENDIX 2: REVENUE SHARING LEGISLATION.

BOLIVIA

<i>Ley de Hidrocarburos, No 3058 (2005).</i>	
Art 51: Assigns proceeds of Extraction Licensea:	50% to the Ministry of Sustainable Development for public investment and environmental management of production regions. 50% to the Municipality where extraction occurs, for environmental mitigation projects.
Art 52: Assigns the Royalty fee (= 18% of gross value extracted):	6% to Treasury 11% to 4 producing regions 1% to 2 of the 5 non producing regions (Beni and Pando).
Art 53, and Assigns the Direct Hydrocarbon Tax (=32% of value).	12.5% of the total tax to Treasury. Of which: 95% at presidential discretion to: Indigenous People, farmers communities, Municipalities, Universities, Army, Police, other; 5% to national Fund to expand domestic accessibility of gas for social and development purposes. 4% of value extracted to each of the producing regions, or 2% of the total tax collected, whichever is the greatest. 2% of the total tax to each one of the non-producing regions. All recipients should spend funds on: education, health, roads, productive development or employment generation activities.
Art. 130: Capital Investment Tax (0.5% of all investments)	Assigned to the Ministry of Sustainable Development, earmarked for environmental auditing and projects related with hydrocarbon sector mitigation
<i>Other legislation</i>	

<p>Decreto Supremo 29322 (October 2007).</p> <p>IDH Revenue distribution.</p>	<p>Revenues assigned to Regions by art 53 above are distributed 66% to municipalities, 24% to regions, and 9% to universities.</p>
<p>Ley 3322 (Jan 2006), arts 2, 3,4.</p> <p>Fondo Compensatorio for Municipalities.</p>	<p>Establishes a Compensation Fund financed with 9.5% of the National Treasury's share of IDH, to benefit the three largest cities:</p> <ul style="list-style-type: none"> i) La Paz 46.19%. ii) Santa Cruz 36.02%. iii) Cochabamba 17.79%. <p>80% of the funds are assigned to the Municipality (for health, education, employment creation, and roads), 20% to the University.</p> <p>Art 6 contains a provision that revokes the payments if the beneficiary entity fails to expend the funds as mentioned in the law.</p>
<p>Law 3791 (Nov 2007), as modified by DS 29400 (Dec 2007) and DS 29432.</p> <p>Renta Dignidad.</p>	<p>Assigns 30% of the share of IDH received by Treasury, Regions, Municipalities to finance the Universal Fund for Old Age; this fund pays a pension to people above 60 years of age formerly uncovered (Renta Dignidad).</p> <p>Assigns to the Universal Fund all dividends from the capitalized public utility companies previously accruing to Bolivian Citizens.</p> <p>Excludes the Compensation Fund established in Law 3322 from the levy.</p>

	Regulates in detail the management of the pension fund.
D.S 28701 (1/05/07) Nationalization Law	Establishes a new “participation” tax, requiring all companies operating in Bolivia to pay an extra 32% royalty as “special participation” directly to YPF.
DS 24914, updated with DS 25764 Impuesto Especial Sobre Hidrocarburos y sus Derivados (IEHD)	Updates the previous law on gasoline retail prices, including the IEHD (gasoline tax). Assigns 20% of the share of IEHD reserved for Municipalities to the University in the respective Region. <i>(note, the effect of this law is not taken into account in the current research as it only regulates downstream gasoline retailing tax)</i>

BRAZIL

Law 7990, 28 March 1989.	
Art 7: Oil and gas revenues	Royalty equals 5% of the value extracted. 70% to derivation State [of which 75% to the state and 25% shared among all municipalities according to article 9 below] 20% to the derivation municipality. 10% to municipalities where oil is transported or where it is shipped to from off shore platforms.
Art 6: mining revenues [Taking into account new royalties set by law 8001 (art2), and new allocations as amended by law 9993(art6).] ·	Royalty is between 1 and 3 % of value of mineral, depending on mineral. 23% to states 65% municipalities 2% national fund for science and technology development 10 % Ministry of Mines and Energy, dept of Mineral Production
Art 9: transfers to municipalities	25% of revenues above should be divided among all municipalities on a population basis.

Law 9478, 1997 (Oil Law).	
Art 47: Regular royalties for hydrocarbons	Sets the regular royalty rate at 10% of the gross value of production of petroleum and gas (with some exceptions to lower it to 5%)
Art 48: Regular royalties distribution	<p>5% of the gross value of production (half of the regular royalty) is distributed according to criteria of law 7990 above.</p> <p>The remaining 5% is distributed in the following way :</p> <p>On-shore Production</p> <p>52.5% to producing states</p> <p>15 % to producing municipalities</p> <p>7.5% to municipalities affected by oil landing or shipment</p> <p>25% to ministry of science and technology (R&D)</p> <p>Off-shore Production:</p> <p>22.5% state facing production area</p> <p>22.5% municipality facing production area</p> <p>15% Navy</p> <p>7.5% to municipalities affected by oil transport or shipment</p> <p>25% to ministry of science and technology (R&D)</p> <p>7.5% for Special Fund to be distributed among all entities (purpose unspecified)</p>

<p>Art 45 and 50: special participation tax. (regulated by decree 2705/98, ANP Administrative Rules 10 and 102/99.36 and 58/01)</p>	<p>Extraordinary financial payment due on oil and natural gas production in the case of high volume or high profit margin fields. Presidential decree set a progressive scale of rates from 10% to 40%, which is applied to the production revenues of each well, net of costs, deductions, taxes and royalties.</p> <p>Revenues distribution:</p> <p>40% to ministry of Mines and Energy: 70% for further exploration of fossil fuels, 15% for planning studies to expand energy system, 15% geological surveys"</p> <p>10% to ministry of Environment: environmental protection and mitigation projects</p> <p>40% to producing states</p> <p>10% to producing municipalities</p>
<p>Art 52: landowner compensation</p>	<p>0.5 - 1.0 % of value of hydrocarbon extracted assigned to landowners.</p>
<p>Decree 2705, 8 August 1998.</p> <p>Contains technical specifications for the implementation of Law 9478/1997, including the formulas for the calculation of special participations.</p>	
<p>Art. 20 and 27</p>	<p>Assigns to the Secretariat of the National Treasury the task of distributing the revenues from royalties, based on the calculations provided by the National Petroleum Agency (which validates the production data provided by the companies).</p>

NIGERIA

<p>Constitution 1999</p>	
<p>Sec 162 (2)</p>	<p>Attributes 13% of earnings from oil and gas to derivation states.</p>

Sec 44(3)	Attributes the entire property in and control of all mineral resources to Federal Government.
Sec 162 (1)	Institutes Federation Account into which all revenues and royalties from oil production are paid, to be distributed among each level of government and agency according to a formula decided by an ad-hoc commission.
(a) Petroleum Profit Tax Act 1959 and amendments. Now consolidated and cited as the Petroleum profits Tax Act 1959, Cap 354, Laws of the Federation of Nigeria, 1990. ⁴⁵	
Oil Profits Tax	85% tax upon profits from petroleum proceeds in Nigeria from 1st April 1975. (65.75% in first five years, and allowance of full amortization of expenses).
Royalty	Between 16,3 % and 20% of official selling price, depending on whether the concession is on- or offshore, and on the depth of water for offshore.

INDONESIA

Fiscal Balance Law 2004 and Government regulation 104/2000 on Revenue Sharing allocations.				
Assigns natural resource revenues to derivation provinces.		Gas	Oil	Mining
	Producing Province	6%	3%	16%
	Producing District	12%	6%	32%
	Districts adjacent to producing district.	12%	6%	32%
	Central Government	70%	85%	20%

⁴⁵ From: Amasi, Germiso & Henriksen (2006): *Statoil in Nigeria. Transparency and local content*. P 52.

Determine formula for the General Grant to Provinces (named DAU) ⁴⁶ , the main tool for inter-governmental allocation.	The DAU fills the gap between locally collected revenues and expenditure needs of each region. Extractive Industry taxes are counted as locally collected revenues and subtracted from the DAU entitlement.			
Laws on Special Autonomy of Nanggroe Aceh Darussalam (Law 18/2001) and Papua Province (Law 21/2001).				
Assign shared revenues to special autonomous provinces		Gas	Oil	Mining
	Aceh Province			
	to Aceh	40%	55%	80%
	to Central Gov	60%	45%	20%
	Papua Province			
	to Papua	70%	70%	80%
	to Central Gov	30%	30%	20%

MEXICO

Law of fiscal coordination (Ley de Coordinacion Fiscal , 27 December 1978).	
Art 2(a): Assignment to Producing Municipality	Municipalities that are located in oil-producing regions or where oil is shipped abroad receive 3.17% of the “Additional oil extraction Rights”.
Art 2: General Pool for States	20% of the “ordinary oil extraction rights” are incorporated into a general fund, which is distributed to the states based on a fixed formula taking into their characteristics.

PAPUA NEW GUINEA

⁴⁶ See World Bank (2007): Indonesia Public Expenditure Review. Pages 115 ff

Oil and Gas Act 1998 Act	
Sec 168 - Sec 159 Royalty fees	<p>2% of wellhead value. Sharing: 20 to 80% of the royalty (depending on amount of land occupied) is assigned to landowners, customary rights holding group. The remainder to local & provincial governments.</p> <p>A share of the Royalty is held on trust for future generations and social development projects.</p>
Sec 160 Development Levy	2% of wellhead value. Assigned to a trust fund from which Provincial Governments can draw.
Sec 173 Special Grants	The mining contract can include payment of grant from the central government to compensate the affected local government.
169 Identification of Landowner Beneficiaries	Procedures to determine all eligible landowners and incorporated landowners groups, includes social mapping and identification studies.
176 Trust for beneficiaries of sect.s 168 and 167	<p>All benefits received pursuant to sects. 168 and 169 are held in separate trust funds (one for each beneficiary group) by the Mining Revenues Development Corporation.</p> <p>The share to Landowners and Incorporated Landowner Groups are allocated as follows: 30% held by the trust for future generations; 30% can be expensed for education, health, and social development or local projects; the rest as income to beneficiaries.</p> <p>The share to local and provincial governments can only be expensed according to an agreement between the local government and the central Ministry.</p>
<p>Other Provisions</p> <p>* Identified by the PNG Revenue Legislation expert, Michael McWalter</p>	
Compensation to landowners*	Compensation to landowners, occupiers and person with an interest in land for deprivation of the use and enjoyment of land; damage to the land surface and any trees, fish and animals; severance from land; rights of way and easements, and any other consequential damage.

Tax Credit for local infrastructure development. *	Infrastructure tax credit scheme whereby the developers may spend up to 2% of their assessable income on infrastructure in the area in which the resource is being developed on approved public welfare projects like schools, aid posts, hospitals and roads, etc. Assessable income is the net income before taxation so this represent a large amount.
Equity share to landowners before inception of project*	An equity benefit of a 2% participating interest in the petroleum project granted by the State to the project area landowners and affected local level government free of costs up to the commencement of commercial production
Other benefits for local economic development*	<ul style="list-style-type: none"> ▪ business seed capital grants from the Government to help landowners start business associated with the petroleum projects; ▪ an obligation on the developers to foster the use of local persons for the delivery of goods and services; ▪ some special grants of project equity to affected Provincial Governments on a negotiated basis; ▪ memoranda of agreement between the developers and the landowners for special assistance projects; ▪ memoranda of understanding between the Government and the landowners, and local level and provincial governments for an array of community projects [sometime quite exhaustive and more than the project is worth].

GHANA

Minerals and Mining Act 2006, No 703, 1992	
Reconnaissance fees, Prospecting fees, Mining Lease (art 24)	Upon granting of licences, these fees are paid directly to Minerals Commission, which withholds the entirety of the revenues.
Mineral Royalties Minerals and Mining Act 2006 art 25	<p>Establishes royalty of 3 to 6% of value extracted. Paid quarterly to Office of Administration of Stool Land. Revenues are shared as follows:</p> <p>Consolidated Fund 80% (central government pool), Mineral Development Fund 10%, and Office of the Administrator of Stool Lands 1%.</p> <p>District Assembly 4.95%, Traditional Council 1.80% Stools 2.25%</p>

Land Rent Minerals and Mining Act 2006 , art 23. (1)	A holder of a mineral right, shall pay an annual ground rent to the owner of the land, except in the case of annual ground rent in respect of mineral rights over stool lands, which shall be paid to the Office of the Administrator of Stool Lands
Compensation. Of owner art73.	The owner or lawful occupier of any land subject to a mineral right is entitled to compensation for the disturbance of the rights of the owner or occupier, in accordance with section 74. Includes rights of resettled land owners.
Other legislation: Constitution (chapter XXI), Administrative Fiat of 1999 (Letter no AB.85/156/01), Minerals Commission Act 1993.	
Corporate Tax and Dividend Tax	Paid directly to the Internal Revenue Service for the Consolidated Fund. Currently set at 25%.
Property Tax on mining premises	Paid to the District Assembly
Stool Land revenues (sec 267 Constitution)	All revenues paid to the Office of Administration of Stool Land, which retains 10.0% of the amount. The remainder is distributed as follows: District Assembly 49.5%, Traditional Council 18.0%, Stools 22.5%.
Article 252 of the Constitution; The District Assemblies Common Fund Act, 1993 (Act 455); Local Government Act, 1993 (Act 462)	Provides for the establishment of the District Assemblies Common Fund (DACF), and regulates the use of oil and Consolidated Fund resources within District Assemblies.
Minerals Commission Law of 1986, as amended by the Minerals Commission Act of 1993	Establish and entrusts to the Commission the regulation and management of the utilization of the mineral resources of Ghana

APPENDIX 3: SOURCES.

A) REVENUE DISTRIBUTION IN SAMPLE COUNTRIES (% OF TOTAL REVENUES).

		Peru (oil) ¹	Nigeria	Bolivia	Brazil	Ghana	Indonesia	PNG	Mexico
Vertical Distribution	A Central Government and earmarked special funds	0.45	0.46	0.37	0.31	0.91	0.85	93%	0.83
	B All Regions ²	0.22	0.36	0.37	0.44	0.05	0.03	3%	0.17
	C All Municipalities (& Private)	0.32	0.18	0.26	0.21	0.02	0.12	2%	0.00
	D Private Landowners.				0.03	0.02		2%	
Vertical Distribution (with shares by derivation)	E Producing Regions by derivation	0.22	0.13	0.28	0.44	0.05	0.03	0.03	
	F Producing Munic by derivation	0.04	0.00	0.13	0.17	0.02	0.06	0.02	0.002
	G Non-prod Munic in prod regions	0.28	0.00	0.00	0.04	0.00	0.06		
	D+E+ F+G Total distributed by derivation	0.55	0.13	0.41	0.69	0.09	0.16	0.07	0.002
	L Residual distributed between all regions		0.23	0.09					0.17
	M Residual distributed between all municipalities		0.18	0.13					
Effective Horizontal Distribution	E Producing Regions	0.22	0.16 ³	0.28	0.44	0.05	0.03	0.03	n.a.
	F Producing Municipalities	0.04		0.13	0.17	0.02	0.06	0.02	0.002
	G Other Municipalities in Prod. Regions	0.28	0.06		0.04 ⁴		0.06		N.A.
	F+D All. Munic. in Prod. Regions	0.32	0.06	0.13	0.21	0.02	0.12	0.02	n.a.
	D Landowners by derivation				0.03	0.02		0.02	
	E+F+ D Total to Producing Regions and their municipalities	0.55	0.22	0.41	0.69	0.09	0.16	0.07	0.00
	H Non-prod. Regions	0.00	0.20	0.09					n.a.
	I Munic. in Non-prod. Regions	0.00	0.12	0.13					n.a.
H+ I Non-Producing Regions & Municipalities	0.00	0.32	0.22					n.a.	
Shares include Special Taxes specific to hydrocarbons/mining:		Royalties & Canon	All oil revenues	Royalty & Direct HC Tax	Royalty & Special Participat.	Royalties	All special revenues	Royalties only	All oil revenues
Shares Include Corporate Income Tax from EI		Yes Canon	Yes	No	No	No	No	Yes	Yes
Extractive Activity revenues considered		Oil only	Oil & Gas	Oil & Gas	Oil & Gas	Mining	Oil only	Oil & Gas	Oil

Notes to table A:

¹ The data in the table is based on (Esmap 2005) values of Canon and Sobre canon, for Oil only. The choice of referring to Oil rather than gas or mining was given by the availability of information on the level of re-distribution that takes places within regions (to the benefit of non-producing provinces and municipalities).

As a complement, the table below displays the vertical distribution of all EIR for Peru in 2007.

	Canon & Sobre canon			Royalties		Total
	Mining	Gas	Oil	Mining	Gas (incl. Focam)	Oil + Gas + Mining
Provinces (incl. Municipios)	37%	37%	30%	85%	52%	39%
Regions	13%	13%	20%	15%	18%	14%
Central Government	50%	50%	50%	0%	29%	47%
Total	100%	100%	100%	100%	100%	100%

As it was done in other cases in this paper, regions through which minerals are transported are counted as “producing” regions.

Since Peru has four levels of government, in order to follow the structure of the table, provinces and municipalities have been grouped in a single category.

² Includes regional universities in Bolivia and Peru

³ Includes both upfront derivation and standard allocation

⁴ Includes both producing and non-producing municipalities

B) SOURCES FOR FIGURE 1 AND FIGURE 2

	% Total Gov. Rev from NR ¹	Budget revenue (% of GDP) ²	Real GDP (US\$bn in 2005 prices) ³	GDP per capita (US \$) ³
Nigeria	76% ⁶	15%	103.11	921
Bolivia	37% ⁶	44%	10.26	1,350
Mexico	35% ⁸	25%	831.12	8,220
Indonesia	26% ⁹	18%	320.67	1,844
PNG	20% ⁵	47%	4.64	792
Ghana	12% ⁷	32%	11.87	574
Brazil	0.5% ⁴	44%	964.23	6,940
Peru	-	30%	93.31	3,790

Notes:

¹: Sources for this column vary by country and year, and depend on the most recently available data found by the author. This does not allow full comparability across countries.

²: Source:

- Brazil: author’s calculation from Brazil Consolidated Accounts 2006, Ministry of Finance.

- All other countries refer to year 2007, Economist Intelligence Unit, Country Data Annual Time Series.

³: Source: Economist Intelligence Unit, Country Data Time Series.

⁴: Revenues from all mineral resources in 2003. Today it is certainly higher (World Bank, 2007c)

⁵: Information from PNG national consultant and former government official in PNG Oil and Gas sector.

⁶: Refers to year 2006, source: (World Bank, 2006) p.41.

⁷: Source: (Bank of Ghana, 2007).

⁸: Source: Author's calculation from Mexico Instituto Nacional de Estadística, 2007 revenue accounts.

⁹: Authors' calculations from (World Bank, 2007a), p. 156.

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