Working paper

Managing revenue from natural resources: A multi-country analysis of sharing resource revenue with sub-national levels

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I. Introduction

Mineral resources such as coal, oil, and gas generate large revenues for governments and the effective management of the revenue generated from these resources can contribute towards economic growth and development. Mineral resources are not uniformly distributed across geographical regions and often tend to be concentrated in few pockets within a country resulting in certain regions being more resource rich than others. In many countries, the highly concentrated mineral rich regions are also very sparsely populated. This variation in the occurrence of natural resources across regions, has led countries to consider revenue sharing both vertically, between a central and local governments (if any) and horizontally, between mineral rich and non-mineral rich regions. Before sharing of revenue is done, it is important to consider ways to generate the revenue. Countries can use a mix of fiscal and non-fiscal instruments to generate revenue from the extractive industries. Fiscal instruments include royalty, corporate income tax, resource rent tax, property tax , value added tax, import and export duties. Non-fiscal instruments include auctioning of exploration and extraction rights, equity participation and production sharing.

Some of the reasons governments may choose to share resource revenue with sub-national governments include compensation for any negative environmental and social impacts of extraction, promoting economic development of resource rich regions, and reducing conflict through addressing the claims of local communities to mineral resources. On the other hand, the experience of certain countries which have begun to share resource revenue with sub-national levels shows that there is a possibility of increased conflict, negative impact on socio-economic outcomes, and wasteful spending, inter-linked with low transparency and accountability, corruption, and low absorptive capacity of sub-national governments. In this context, it becomes important to examine the experiences of multiple countries to identify reasons for the success or failure of revenue sharing arrangements.

This paper discusses resource revenue sharing practices in five countries: Colombia, Ghana, Indonesia, Nigeria, and Peru; and draws lessons from their experiences for making sub-national transfers effective. The authors also attempt to contextualize the findings for Myanmar to suggest country-specific strategies to manage revenue sharing.

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The literature on the basis of which these case studies were done was taken from a systematic review on natural resource revenue management conducted by the authors for the South Asia Research Hub of the Department of International Development, Government of UK. The purpose of the systematic review was to collect literature on natural resource revenue management and find evidence to specifically examine the effectiveness of natural resource funds as an instrument to manage resource revenues.

As a part of the research conducted for the project, 7387 studies were identified through a systematic literature search, and then based on certain identified inclusion and exclusion criteria, including the type of country (or countries) studied and type of intervention examined, the set of studies were narrowed down for synthesis of and data (both qualitative and quantitative) from.

Of the 293 studies which were including for coding and mapping, 35 studies examined sub-national transfers as an intervention to manage natural resource revenue. An in-depth review of these 35 studies was conducted to understand the manner in which sub-national transfers are made in these country and to draw lessons from their experiences. Some of these analyze the experience of one country, while others undertake a cross country comparison. Based on the available literature, more specifically, greater discussion on a particular country, and information on revenue sharing mechanisms, five countries were selected for the cross-country comparison – Columbia, Indonesia, Ghana, Nigeria, and Peru. The second section of the paper outlines key issues around managing revenue from natural resources, and specifically different types of revenue sharing mechanisms which are available to countries; the third section makes a cross country comparison of the selected countries through the case study analysis; the fourth section seeks to make certain recommendations for effective revenue sharing based on the cross country comparison; and the fifth section contextualizes the findings for Myanmar in particular.

II. Need for sharing natural resource revenue

While the presence of natural resources is expected to generate revenues for resource rich countries and consequently lead to economic growth and development, this is not always the case. In fact, studies indicate the presence of a 'resource curse' in resource rich countries, which are countries where revenues from natural resources contribute a significant amount towards the GDP. This is a condition wherein the presence of natural resources acts as a deterrent to economic growth instead of promoting it. Another related phenomenon is the 'Dutch Disease' wherein a large inflow of foreign currency from the export of mineral resources leads to the appreciation of the currency of the resource rich state, with a negative effect on the growth of other sectors. In addition, resource rich countries are often seen to experience conflict surrounding control and use of mineral resources and the revenues generated from them.

Some literature also indicates the presence of a 'sub-national resource curse', which is a condition wherein a resource rich region in a country has lower economic and social development than non-resource rich regions. In this context, some reasons why governments may want to share revenue with sub-national levels may include compensation for adverse environmental and social effects of mineral extraction, socio-economic development of backward regions, and reducing conflict through addressing claims of local communities over mineral resources. For example, in Peru, Zambrano

(2015) found that mining districts experienced a higher reduction in poverty as compared to non-mining districts after revenue sharing was initiated.

As Bauer et al (2016) point out, in most countries revenue from minerals is collected at the national level and then transferred to sub-national levels. In this case, the transfer of revenue may be either ‘derivation based’ or ‘indicator based’. Derivation based transfers are based on origin of mineral revenues, and resource rich regions therefore receive the majority of revenue transfers. Colombia, Ghana, Indonesia, Nigeria, and Peru make derivation based transfers for the whole, or part, of their resource revenues.

When national governments transfer revenues to sub-national levels based on indicators such as population, or poverty levels etc., these are called indicator based transfers, as occurs in Mexico and Uganda. While derivation based transfers are made to regions where resources are extracted, these indicator based transfers need not be to the regions where resources are extracted, although resource revenue generation may be one criterion on the basis of which revenues are transferred. A third type of revenue sharing mechanism occurs when sub-national governments collect revenue from mineral resources directly, as is seen in countries such as Canada, India, and the United States.

While revenue transfers can address several of the issues discussed above, there are also certain negative outcomes associated with ineffective revenue sharing, including increased regional inequalities, increased levels of conflict, and highly volatile government expenditure, linked with corruption and mismanagement of revenue. For example, studies carried out in Brazil, Colombia and Peru indicate that economic growth, housing, education or health outcomes did not improve following the collection of large oil or mineral revenue windfalls by sub-national governments. In this context, the absorptive capacity of sub-national governments, institutional structures to enable transparency and accountability in revenue management can play an important role in determining the appropriate mechanism for revenue sharing and helping mitigate some of these negative outcomes.

The next section presents five case studies examining the mechanism of natural resource revenue sharing in Columbia, Indonesia, Ghana, Nigeria, and Peru.

II. Experiences of select countries with sub-national revenue sharing

A. Columbia

In Columbia, while mineral resources are owned by the national government, all proceeds collected from royalty are distributed among sub-national governments located in both producing and non-producing regions.

Prior to 2011 revenue sharing was based on a derivation transfer principle with provincial governments in producing regions receiving as high as 80% of proceeds (as direct royalties), and the remaining 20% going to the National Royalty Fund. These direct royalties (80% of the proceeds) were then shared between producing municipalities, provincial governments and port municipalities, with each receiving 23%, 50%, and 7% respectively (Brosio year). With 17% of the population receiving 80% of the royalties, the concentration of revenue in small regions led to inefficient spending,

rampant corruption and impoverished regions. Poverty levels were higher than the national average in six of the eight regions that had received the largest share of royalties by 2005. For example, in La Guajira, the region which the largest amount of royalties from mining prior to 2011, roughly 50% households did not have access to sanitation in 2009, 41% did not have access to a continuous water supply and only 67% of children under 17 attended school, compared with the national average of 85% (Korinek, 2015).

In 2011, a constitutional reform mandated that direct royalties transferred to the producing region constitute only 20% of total royalty proceeds. The remaining 80% now goes to the ‘regional royalty funds’, under which revenue transfers are based on basic unmet needs index that combines indicators of poverty, population, health and unemployment along with giving weightage to environmental, social and economic impacts of extraction, transportation and processing of natural resources. The distribution of royalty payments also has to meet two additional criterion 60% of royalty proceeds must go to the regions which fail to meet the basic thresholds and 5% of royalty proceeds must be for the indigenous community which resides within 5 km of mining area. This explicitly brings in the equity criteria in revenue sharing and resulted in 80% of royalties collected reaching regions comprising 70% of the population in 2012 (Korinek, 2015).

The 2011 constitutional reform also issued guidelines for sub-national spending and transparency mechanisms for increasing the efficiency of spending. These guidelines directed that the revenue transfers needs to be spent on infrastructure projects, science and technology, innovation expenditures and pensions. Additionally, out of the total revenue, 2% has to be set aside for administrative expenses, 1% for monitoring, control and evaluation of projects and 2% for funding research and development of geological services and geological mapping. Funds are also allocated to finance investment projects by municipalities, departments, and other territorial entities. Selection of projects and their management is the responsibility of public-sector management bodies called *Órganos Colegiados de Administración y Decisión* (OCADs) that exist at the local, regional and national level.

This triangular system of local, regional and national involvement in decision-making regarding infrastructure investments enhanced transparency and provided the necessary oversight which increased the efficiency of spending in terms of project development and management (ibid).

B. Indonesia

Natural resources constitute a great source of wealth in Indonesia with mining contributing more than 10 percent to the GDP, which is about 5 times higher than the international average. Over time, Indonesia has developed a complex system in which natural resource revenues are shared with subnational entities according to a mix of derivation and equality principles. The fiscal decentralization framework under Law 33/2004 mandates that the central government allocate a share of the income from natural resources to provincial and local governments. Table 1 highlights different revenue-sharing arrangements according to the type of natural resources. While the system provides for equal shares to be transferred to producing and non-producing districts, within districts, areas closer to mining sites usually receive a larger share (World Bank, 2014).

Table 1: Revenue Sharing arrangements in Indonesia

Revenue Share	Mining	Oil	Gas
Central	20%	84.5%	69.5%
Province	16%	3.1%	6.1%
Districts	64% Land-rent: Only for producing districts Royalty: 32% for producing districts 32% for non-producing districts (equally distributed)	12.4% 6.2% for producing districts 6.2% for non-producing districts (equally distributed)	24.4% 12.2% for producing districts 12.2% for non-producing districts (equally distributed)

Source: World Bank 2014

However, the revenue sharing system is different in Aceh, Papua and Papua Barat, on account of the fact that Aceh is nearing the end of its natural resource reserves (natural gas), and Papua Barat is at a much earlier stage of its exploitation of oil and minerals (Lynn, 2014).

Historically the legal distribution of natural resource revenue was primarily based on tax sharing, where specified percentages of the tax revenue raised from each extractive activity were divided between central and local governments, with vertical shares differing across components of the natural resource sector. Horizontally, revenue sharing arrangements were based on ad-hoc rules that tried to compensate natural resource regions for costs incurred and for the use of exhaustible resources (Bahl and Tumennasan, 2002). Thus revenue transfers were mainly confined to resource producing regions resulting in inequities across districts. Further the problem became more complicated as revenue sharing argument often gets confounded by the ethnic differences in the natural resource regions (Ross, 2007).

For the allocation and management of the resource revenues at the sub-national level, a community-driven development approach was developed, focusing on community participation and transparency at each stage of extractive projects. The Government of Indonesia launched the Kecamatan Development Program (KDP) aimed at alleviating poverty improving rural governance. Under KDP block grants ranging between US$ 40,000 to US$ 114,000 are directly provided to sub-districts and villages to finance small-scale infrastructure, socio-economic activities. For ensuring checks and balances at every stage of the extractive project, a sub-district forum consisting of village

heads, civil society, and other participants from villages oversees the financial management of KDP funds and implementation of welfare projects (World Bank, 2014).

The country also faces a concern linked to the spending by sub-national governments. If the sub-national government does not spend its entire share within a given financial year, it goes back to the federal government. Hence, there appears to be a bias in favour of spending the money to benefit current voters or the current power structures. In this context, Bojonegoro, an oil rich district is demanding that the federal government allow for the creation of a natural resource fund at the sub-national level. This highlights the need to transfer funds to sub-national levels based on absorptive capacity constraints of sub-national governments, while also transferring funds which can finance public investment adequately.

C. Ghana

Ghana has been a case of particular interest in the context of sub-national resource revenue sharing as it is one of the few African countries to have created and effectively implemented policies for redistributing a proportion of its mining wealth directly to communities. Nearly 45% of the revenue disseminated at the grassroots level is at some point handled by district assemblies and traditional authorities. It is also important to note that despite high production value of mining (which in Ghana is mostly gold and has grown significantly by 290% since 2000) with mining representing over 25% of the country's export trade, and revenue sharing practices, the country continues to have low levels of human development and high levels of poverty, even in mining areas (Andre 2013).

The Minerals and Mining Act of 2006 provides that entire revenue that comes from mining needs to be paid to the Large Tax Unit of the Internal Revenue Service, which then dispenses the money into the Consolidated Fund. Out of the total revenue collected, 80% is retained by the government and used for general budget support, and 10% is transferred to the Mineral Development Fund (MDF), which is used to fund public mining sector institutions, finance development projects in mining communities and compensate communities for social and environmental costs associated with mining. MDF has financed small infrastructure projects, including loans to small scale miners and geological assessments. The remaining 10% of mining revenue is transferred on a quarterly basis to the Office of the Administrator of Stool Lands, which, in turn, transfers the money directly to beneficiaries at the grassroots, according to a formula outlined in the Minerals and Mining Act of 2006.

The Act mandates that the Office of the Administrator of Stool Lands retain 10% of the revenue received to cover administrative expenses, and transfer to remaining amount in the following manner: (i) 25% to the traditional authority for 'the maintenance of the stool', (ii) 20% to the traditional authority for other purposes, and (iii) 55% to the District Assembly. It is to be noted that there are no checks and balances, to assess whether these funds are reaching communities and District Assemblies (Andre, 2013)

Cases of mismanagement and corruption of mineral wealth by traditional authorities and District Assemblies are reported in local media quite regularly[4]. In addition, there is no legislative mechanism that governs the management and auditing procedures of the MDF. There is considerable evidence that utilization of revenue is undermined by embezzlement and elite capture. Even in cases where district assemblies received their share, 85% of respondents to a survey conducted across districts reported that their assembly members were financing projects that were not in the public interest (Debrah, 2009). The evidence is no different when it comes to CSR expenditures, where there are reports that companies have misused social funding to consolidate power and influence regulations. All this fuelled in a feeling of local discontent among the communities, and led to increased competition between mining and agriculture for arable land, inadequate public services, poor infrastructure at the local level and high unemployment. Recently, the Government of Ghana has prepared guidelines for the use of royalties at the district and municipal level, but these are yet to be notified (World Bank, 2014).

The discussion above becomes more relevant given that that Ghana became EITI signatory in 2010. Ideally it would have provided information on the flow of funds to district assemblies, traditional authorities from the Centre to the state but reports of rampant corruption suggests dubious reporting practices. Thus, despite macro-economic growth fueled by the mining boom, Ghana remains a country with high rural poverty. UNDP ranks Ghana 135th out of 187 countries on its Human Development Index (year), which is precariously low given the fact Ghana, has recently transited to the status of a middle income country. 28% of the population is classified as living below the poverty line (living on less than USD 2 a day), while rates of poverty in the north of the country are thought to be rising. Finally, the growing gap between the south and the north in terms of income levels has reached alarming proportions, reflective of widespread inequalities in the country (Andre 2013).

D. Nigeria

In Nigeria, the federal government holds all mineral rights and is responsible for the allocation of exploration and development licenses as well as revenue management. The revenue system is highly centralized and state and local government depend on intergovernmental transfers and statutory allocations (Alex G. et al). Since 1981 shares under the Revenue Allocation System (RAS) are largely driven by political considerations and formulas combining equity and efficiency principles. However in general, the total proportion of RAS shared on the basis of the efficiency principles has rarely exceeded 30-35 percent, as governments (both civilian and military) have shown distrust over the measurement criteria with respect to ‘absorptive capacity’ and ‘fiscal efficiency’ principles.

The allocative formula under RAS which is used for distribution of oil revenues is decided and reviewed by parliament every five years taking into account the population, equality of states, internal revenue generation and land mass (Acosta, 2012). The formula specifies that mineral revenue gets distributed between federal, state and local governments in the share of 50%, 30% and

[4] For instance, in 2011 it was reported that in Kwanre East District, Ashanti Region, the district assembly has only received one tenth of the roughly US$1.3 million dispensed into its District Common Fund, with the remainder being unaccounted for.

15% respectively. The remaining 5% of the revenues goes to special funds such as a stabilization fund, economy fund and fund for the development of mineral producing areas. However, there are no guidelines issued by the federal state guiding local government expenditures and no information available on how local governments currently spend their revenue. While every Nigerian state is entitled to a share of natural resource revenue, producing states gets an additional share of 13% of revenues generated within their state (Lynn, 2014).

Until the advent of a military government in 1966, an ad-hoc commission over revenue allocation would precede each revenue distribution scheme. Between 1966 and 1979, eight such ad-hoc commissions were established to decide upon the share of sub-national government. During the span of 14 years, RAS was amended four times without prior commission on revenue allocation, largely motivated by powerful elites (Phillips, 1991). Moreover Olumide (n.d.) highlights that ethnicity was used as a basis for allocation in some way or the other till 1966 leading to its own set of problems. The mobilization of resources on the basis of ad-hoc rules has negatively impacted the quality of public service provision and increased regional inequalities. The inequitable use of resource revenue has been shown to be a major factor behind conflicts in Nigeria (World Bank, 2014).

Acosta (2012) finds that the 1981 RAS formula presents a significant improvement over the pre-1981 systems in at least two aspects: firstly, shares of three tiers of government are explicitly determined, and secondly, internal efforts of local governments are accounted for when it comes to determining sub-national shares. Acosta (2012) asserts that there is a lack of fiscal discipline at the sub-national level, but this might be because of volatility in revenue transfers from the central government. However, corruption, rent seeking and vested interest of elites have emerged as obstacles to the transparent management and usage of resource revenues in the country.

It becomes important here to highlight Nigeria's endorsement of the Extractive Industries Transparency Initiative (EITI) which aims at bringing transparency in the allocation, disbursement and utilisation of revenue from the Federation Account to federal, state and local governments and thereon to local beneficiaries. The National Stakeholder Working Group (NSWG) in their efforts towards greater transparency, are complementing EITI implementation and engaging in physical, financial and processes audits. (Refer https://eiti.org/nigeria)

E. Peru

Since 2001, with the beginning of fiscal decentralization process in Peru, natural-resource revenues have been an important source of income for subnational governments. The 2004-2009 commodity boom embraced the new localism in natural resources management (Yanguas, 2011). The total tax revenue from mining, including corporate tax, royalties and special mining levies, was distributed between the central, regional and local governments in the share of 50%, 12% and 38% respectively.

It is important to note that the distribution of taxes between central, regional and local governments is specific to each type of tax. For instance, total taxes distributed by instruments among sub-national governments include: corporate tax (50%), royalties (6%), special mining taxes and levies (5%) and employees' participation in earnings (19%). Half of the corporate tax from mining

companies goes to the subnational governments where the minerals got extracted and this transfer is called ‘canon’ and the other half is retained by the central government.

Under the 2004 Canon Minero Law, distribution of canon and royalty follows a two-step process. As a first step, law determined shares of municipalities, provincial and regional governments where resources gets extracted, and as a second step it sets in a distribution mechanism within each portion, based on population, poverty and unmet basic needs (Zambrano, 2015) . While the distribution of mining canon varies depending upon which criteria is given priority, distribution of oil canon prioritizes population density over extraction proximities. This created several distortions, as rich city areas with large number of inhabitants received more resources than oil producing municipalities and districts hosting the extractive operations.

Transfers of Canon Minero and royalties to local governments grew from US$100 million in 2004 to US$ 2.5 billion in 2012 (Zambrano, 2015). More than 96 per cent of regional and local government budgets comprise financial transfers from the central government. According to Yanguas and Acosta (2014) bypassing the regional governments resulted in lack of accountability between the regional and local levels, but to our observations it minimized chances and escaped potential source of corruption.

Unlike transfers from Canon Minero, there are certain restrictions on how royalties must be invested in the mining affected communities. Sub-national governments tend to spend on average, approximately 75% of their revenue in building new public infrastructure, up to 20% in maintenance of public projects and up to 5% in the preparation of investment profiles. Public universities received 5% of the royalties that were allocated to the extractive regions (author).

Initially, the devolution of resource revenues had a significant impact on the pace of poverty and inequality reduction. For instance, poverty rate and inequality rate was 2.65% and 1.3% lower in mining districts as compared to the non-mining districts (Zambrano, 2015). However, in general, benefits for the population staying near the extractive areas were limited. The rates of poverty in either localities or provinces where resources are extracted are among the highest, and people’s access to health and education services in these areas is insufficient (Gallegos 2014). Moreover in 2007, it was found that 70.9% of the total canon transfers, and 52% of all fiscal transfers from the central government to subnational governments were concentrated in 6 out of Peru’s 25 regions which accounts for just 16 per cent of the total population, resulting in large inequities between the districts (Yanguas, 2011).

Although there is no clear evidence that increased devolution of natural resources revenues led to more conflicts in Peru, there are reports that sub-national governments that enjoy large financial transfers often use them inefficiently (Yanguas, 2011). This had triggered a number of corruption cases due to the misappropriation of funds and illicit associations, which was evident in the fact that in 2014, 9 regional presidents out of 25 were accused of corruption charges in Peruvian courts (Lynn, 2014). Expectedly, these regions were those that received sizeable transfers from the Canon Minero and royalties. Thus redistribution policies created territorial fragmentation and exacerbated inequalities as districts that received relatively lower shares were not able to implement any large infrastructure projects due to the small and volatile amount of revenue being transferred to them. In the efforts to address the rampant corruption prevalent in allocation and use of transfers, Peru has

become the first country to disclose its earnings at the sub-national level within the context of EITI, and has also issued guidelines for regional and provincial government directing the use of funds in order to strengthen transparency and accountability mechanisms.

III. Learning from case studies for enhancing the effectiveness of sub-national transfers

The case studies discussed in the previous section present some of the different ways in which sub-national transfers can be made, including the specific basis for the allocation and concerns linked to the use of the allocated revenue. It was also noted that all these case studies had atleast some part (if not full) of resource revenue being transferred to the sub-national government using a derivation based system. These case studies also highlight aspects which need to be considered for enhancing the effectiveness of sub-national transfers.

Addressing inequality revenue potential due to extractive resource endowment: A key aspect to be considered while designing sub-national resource revenue transfers is the concentration of extractive resources in a few areas in a country, which results in differences in the revenue generation potential of the regions with implications on the manner in which the revenue can be shared with them. Most countries have tried to reduce these inequalities by providing for some equalization of fiscal capacity between sub-national jurisdictions and also create allocative efficiency and stability in their countries. The equalization can be done either by bringing natural resource revenue within the general equalization framework followed by the country using all revenue sources or by using a distinct equalization system for natural resource revenue. It is important to note that the extent to which the equalization framework incorporates resource revenues in the calculation of fiscal capacity has significant implications for horizontal equity between sub-national units and for allocative efficiency across the regions in the country.

Decentralization of government responsibilities and matching fiscal capacity: Another important consideration while sharing resource revenues is that the shared resource revenue should match a properly-designed assignment of government responsibilities to the local government. Resource revenue sharing should be directly related to the roles of the governments in managing, developing (including providing infrastructure) and conserving the resource. If a significant portion of revenues goes to the sub-national governments without corresponding responsibility assignment, particularly to the origin of the revenue, it could not only lead to persistence of regional inequality, but also the inefficiency in the use of the resource revenue of local government could occur as another challenging problem like in Nigeria.

Mitigating impact of volatility linked to resource prices using fiscal rules and resource funds: Volatility of resource prices in world markets may result in highly volatile resource revenues. When revenue diminishes abruptly due to falling prices of natural resources, sub-national units may have to resort to expenditure cuts, thus endangering even the provision of minimum levels of essential services, such as education and health, when these are decentralized. During upturns in prices, sub-national jurisdictions may have access to excess revenue which they are not able to spend efficiently, or may enter into spending commitments that might not be sustainable in the longer term. Inefficient resource revenue management can also occur because of the inability of sub-national government to implement large infrastructure projects due to the small and volatile

amount of revenue being transferred to them, as has been seen in Peru. So for the sub-national governments to meet their expenditure requirements, it is important that the fiscal policy in the country and design of fiscal federalism framework reduces the possible impact of volatile resource revenues. For this, there should be clear and transparent fiscal rules at the sub-national level to ensure that revenues are used to promote intra or inter-generational equity, for example through placing limits on transfers to state budgets, and requiring that a certain amount be transferred to natural resource funds at sub-national level or to manage public debt. This would then suggest paying down debt in good times or borrowing in tough times or saving revenues in a fund in good times and drawing on that fund in tough times. In addition, while establishing a resource fund at the sub-national level attention must be paid to enacting strong transparency and oversight requirements, so that fiscal rules are consistently applied. These funds would function like natural resource funds at the national level to protect the budget and the sub-national economy from the volatility of resource revenue flows and also save for future generations as well as other purposes such as investment in infrastructure, education, and health. This would help ensure long term and inclusive growth that can be sustainable even when the natural resource revenue has dried up. A good practice relating to fiscal displace, often cited in literature, is one followed by Norway, which places a limit on the amount of money that may be spent directly from resource funds, and mandates that the use funds should be subject to the same scrutiny as the budget.

Fiscal rules can also specify how money should be spent by local governments. For example, in Colombia and Peru, the central government earmarks resource revenue transfers to specific investment projects either through laws or executive orders, placing limits on spending by sub-national governments.

Access to clear information on resource sharing: Even when the rules are well defined, it can still be a challenge for local governments to access enough information to predict and monitor their revenues. Therefore, in order for sub-national governments to manage their natural resource revenues optimally, they must have access to information from the national government and companies about how much revenue they would be getting overtime, sharing formulas and projections related to resource production. This can help them anticipate expected revenues to plan their expenditures, and address volatility linked to resource revenue. In the case of Ghana (and many other countries across the world including Democratic Republic of the Congo, Philippines, Iraq, and Malaysia), local governments rarely know how much they are owed in oil, gas and mineral revenues and whether they are receiving the correct amount. This lack of information about revenue sharing and the volatile nature of oil, gas and mineral revenues combine to make planning the annual budget quite difficult. It is therefore not unusual for sub-national governments to either underestimate or overestimate revenues. The oil-rich Nigerian state of Bayelsa, for instance, underestimated revenues by 97 percent in 2000 and overestimated revenues by 20 percent in 2007[5].

Legal framework and guidelines for revenue management: Specifying the amount and basis of transfer allocation in legislation while also allowing for some flexibility to address changing macroeconomic conditions can assist in effective revenue management. In Nigeria, there are no

[5] Banabo Ekankumo and Koroye Braye Henry, "Stimulating internally generated revenue in Nigeria: the entrepreneurial option revisited," European Journal of Social Sciences Vol. 24, No. 4 (2011)

legal mechanisms to impose fiscal discipline at lower tiers of government. The adoption of revenue sharing in Nigeria has not necessarily lead to improved or more accountable revenue management at the local level, much less to a targeted government effort to invest in education. In Columbia, the selection of investment projects funded by resource revenue and their management is the responsibility of Organos Colegiado de Administration y Decision (OCADs), public-sector management bodies that exist at the local, regional and national level.[6] Colombia's six regional OCADs are responsible for defining, evaluating, prioritizing and approving regional investment projects presented by territorial governments. The Government of Ghana prepared guidelines for the use of royalties at the district and municipal level with an objective to ensure maximum community benefits and set clear rules on how to implement corporate social responsibility programmes. Designated bank accounts have been established to easily track and monitor royalty transfers to local communities. These measures intend to prevent misuse of funds and ensure projects are in line with the communities' development priorities[7]. In the absence of guidelines, sub-national transfers may be utilized inefficiently.

Addressing challenges faced by sub-national governments in revenue utilization: Reasons for misspending by sub-national governments may include insufficient absorption capacity and/or corruption. As noted earlier, mineral resources are geographically concentrated, and this can result in revenue transfers being disproportionate to the absorption capacity of sub-national government units (at times, even disproportionate to the absorption capacity of the national government). Absorptive capacity is a government's ability to absorb additional spending efficiently and transform financial resources into concrete infrastructure and social services . It also encompasses the ability of the domestic private sector to provide the goods and services contracted by the government This could lead to non-economic investments, especially in developing countries with generally weak local administration. The absorptive capacity depends on the domestic supply of qualified labour, speed at which people can be trained, ease of access to inputs, ease of access to credit for businesses, and the presence of management systems and institutions that can cope with an increase in spending (Bauer 2013). With regard to the public sector, if a government can easily draw on a pool of technically skilled human resource, administrators and other service providers, if management systems are in place to efficiently increase spending, and if there are adequate accountability mechanisms in place to prevent waste and corruption, then absorptive capacity is considered high. On the other hand, if there is a lack of qualified staff and governance systems are weak, then absorptive capacity is considered low and there is a good chance public funds will be wasted. The extent of absorptive capacity of the local government will depend on adequacy of supply of capital (financing and equipment) and local labour to meet the demand generated by an inflow of resource revenues into the local economy. This will enable local businesses to operate and create employment opportunities. If there is not enough skilled labour, then the inflow of money into the local economy may cause instability.

Accountability and transparency: Accountability with respect to spending decisions and transparency in spending also play an important role in effectiveness of sub-national transfers. In

[6] OCAD consists of representation from Universities, public sector and government Departments

[7] http://progrep.eiti.org/2015/country-focus/ghana

Indonesia, under the current system of natural resource revenue sharing the local politicians and other local elites have a decided bias towards using resource revenues to benefit current voters or the current power structures. Though there has not yet been a thorough monitoring of these expenditures, many believe that much of the money has been squandered (Bahl and Tumennasan (2002)). This is a result that one might expect in the case of receipt of a large revenue windfall with little accountability to voters and little transparency. In Peru, disclosure of its revenue earning at the sub-national level is a common practice within the context of the EITI to enable greater accountability in the management of resource revenues.

In the context of the utilization of the allocated revenue, it would be useful to engage local communities to understand their needs and priorities so that these can be integrated in the revenue utilization plan. For example, in Peru, legislation has mandated participatory consultations on the use of the revenues locally, and civil society organizations and mining companies have been encouraged to help sub-national governments to spend the money. Indonesia draws on a community-driven development approach for the allocation and management of the resource revenues at the sub-national level. This will also help build trust between the government and the communities.

IV. Contextualization: country-specific recommendations for Myanmar

Myanmar has a unitary structure and the state and regional governments were created by the 2008 Constitution which came into force in 2011. Recently, in 2016, in a historical power shift, Myanmar has shifted to a partly democratically elected government with a civil head.

Under the 2008 Constitution, sub-national involvement in natural resource management and revenue collection is limited. Table X presents the revenue related management roles of Central and Sub-national governments

		Management	
		Central	Subnational
Revenue	Central	Example: Oil and gas, concessions and revenues both centralized	Example: Small-scale mining proposal (licensing to be sub-national and revenue to go to centre)
	Sub-national	Example: Certain species of timber. Managed by MOECAF with revenue to state/region fund	Example: Salt products under Myanmar Salt and Marine Chemical Enterprise

Through the creation of state/region governments, there has been a trend to de-centralize revenue collection without aligning incentives through devolution. Currently the shares of various sub-national governments in resource revenues are largely determined through a process of negotiations between the states/regions and the Union, taking into account the level of deficit between local revenues and expenditures and past patterns of resource allocation. There has been a marked increase in transfers to sub-national governments which is reflected in the increase in grants or loans from union budget from 3.6% of overall spending in 2013-14 to 11.8% of the overall spending in 2014-15. However, excessive political interference in the collection of revenues has negatively impacted efficiency of revenue collection.

Another concern that the country faces is that most of the mines are still under the military control area and there is no accountability and transparency with respect to providing production and revenue related information. Even local governments are unaware of what is being negotiated between the mining companies and the central government, and how their share is being calculated. Myanmar's military owned companies and holding groups such as UMEHL (Union of Myanmar Economic Holdings Limited) and MEC (Myanmar Economic Corporation) had invested heavily in the extractive sector. There are also reports of illegal mining and illegal gas exports to Thailand and China. In the late 1980s and early 1990s, when the then military government (SLORC/SPDC) reached ceasefire agreements with several large ethnic armed groups, it was found that extraction of natural resources increased in the ceasefire areas, particularly mining and logging in Kachin, Shan and Kayin States. In addition, the official exchange rate was overvalued leading to a condition wherein the true value of the income of state owned enterprises (SOEs) , particularly those operating in the gas and oil industries did not appear in government accounts.

Civil Society Organizations (CSOs) have demanded higher levels of revenue sharing with the sub-national government and greater accountability of the government. The current civilian government is considering formula based transfers for which it had earlier invited suggestions from the state governments for making constitutional amendments. The government has indicated that under the formula based transfers, sub-national shares would be determined based on prevailing poverty rates and spending needs. CSOs are demanding more channels for routine communication around resource governance to help to prevent future conflict around resource misuse related issues.

One concern that still needs to be addressed is the use of the natural resource revenues to reinforce the power of local elites. Because of elite capture of revenues, the revenues accruing to sub-national governments from natural resources remain relatively minor compared to the extractive activities taking place in the regions. However, the new administrative structures and natural resource management responsibilities of sub-national government is a positive step, representing the beginning of institutions, practices and structures for managing natural resources.

According to Lynn (2014), several policy makers in Myanmar cited Indonesia as an example that can be emulated considering the vast variety of resources which are widely distributed. But here it becomes important to understand that fiscal decentralization arrangements in Indonesia have evolved overtime, as have production sharing contracts negotiated with oil and gas companies.

It is possible that the mechanism used in Indonesia could be adapted for the context present in Myanmar. Resource revenues could be shared with sub-national governments in a manner which builds trust and adds to local content thereby increasing absorptive capacity. At the same time sub-national government should establish some kind of resource fund which not only ensures intergenerational benefits but helps sub-national governments address the effects of volatile revenue transfers from the central government. For Myanmar a natural resource fund could potentially play a role in bringing about equity in sharing and distribution of resource revenue thereby reducing conflicts and strengthening federalism through allocation of revenue from extractive industries directly to the sub-national governments. Further, the use of resource revenues at the sub-national level should be guided by regular discussions between the CSOs, village heads and civil society so that the immediate needs could be prioritized.

Myanmar could put in place institutions and mechanisms which could ensure checks and balances at each step of the value chain (right from the project getting sanctioned to revenue flows and its expenditure) and involve local communities in decision making. In this way, the natural resources can be exploited for the greatest benefit of the people as stated in the constitution. Since Myanmar has no freedom of information law, and environmental and social impact assessments are not required, it is unclear which authority receives payments from extractive companies. It is widely assumed that corruption is rampant in the sector and that much of the country's resource revenues have been diverted to the foreign bank accounts of a few government officials[8]. A system to share information with stakeholders on natural resource wealth, revenue generation, and transfers should be created. This will create transparency and build public trust. In June 2014, Myanmar became an Extractive Industries Transparency Initiative (EITI) candidate country and came out with its first report in March 2016. This report provided the most comprehensive publicly available data to date on extractive revenues in the country, though did raise many questions too.

Conclusion

As countries look towards managing their natural resource revenue, sub-national transfers can play an important role. It is important to recognize that a uniform optimal solution regarding the design of sub-national transfers may not exist, and the resource revenue sharing may need to be done for each country on a case to case basis. However, a revenue sharing system has better mechanism to align the interest of different layers of government in internalizing the negative externality of resource sector and be able to create a more even distribution of resource revenue. Also, beyond the proper design of resource revenue sharing, its success will depend on the transparency in the management of resource revenues and the accountability of government.

Sub-national transfers can also play a particularly important role for low income fragile countries which are resource rich such as the case of Myanmar as discussed in this paper. One other such country is Afghanistan, where despite there being abundance of natural resources, the political fragility combined with ineffective economic policies, inefficient institutional arrangements has led to poor developmental outcomes. It may then be relevant to explore the role of sub-national transfers in this context and its potential to transform the country into a prosperous and successful economy.

[8] https://resourcegovernance.org/sites/default/files/country_pdfs/myanmarRGI2013.pdf

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