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Macroeconomic and socio-political issues

Extractive Industries and Economic Growth

The discovery of large reserves of non-renewable natural resources, such as oil, gas, or minerals¹, may represent a one-off opportunity for a country to transform its society. In the words of the United Nations Industrial Development Organization, 'the process of harnessing natural resources in the context of development is fundamentally about transforming assets that are below the ground into productive assets above the ground.'² Many developing Commonwealth countries are endowed with an abundance of natural resources that have the potential to make a significant contribution to economic growth and development.

A thriving extractive sector can spur wider development in other sectors of the economy and raise domestic output, contribute to poverty alleviation, and expand the tax base to the government. Moreover, extractive sector development often leads to a significant increase in exports. Typically, companies in the extractive industries (EI) will base their investment plans on selling product into international markets (since domestic markets, especially in developing countries, can rarely absorb the total production), thus allowing EI to make a significant positive contribution to the trade balance and generate valuable hard currency, vital for imports of energy, foodstuffs and manufactures.

One might, therefore, expect to see a positive correlation between EI activity and GDP. Yet, as figure 1 demonstrates, EI activity does not always necessarily translate into higher per capita GDP.³

1 For the sake of brevity, the term 'natural resources' will be used for the remainder of this paper to refer to oil, gas, or minerals.

2 UNIDO, *Industrial Development Report 2009*.

3 GDP/capita: IMF, *World Economic Outlook*, October 2009. EI to GDP: British Geological Survey, *African Mineral Production 2001–2005*; EITI: British Geological Survey, *South America Mineral Production 1997–2006*.

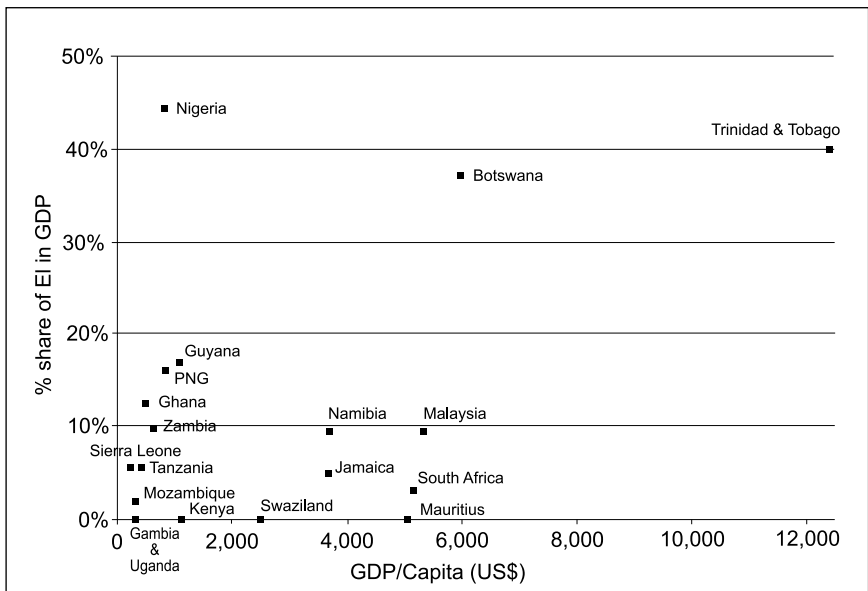


Figure 1. The contribution of EI to GDP vs GDP per capita (2005)

Indeed, counter-intuitive as it may seem, the evidence, in fact, shows that developing countries with significant EI also often demonstrate slower economic growth than their non-resource-rich counterparts. A 2005 World Bank report,⁴ looking at economic performance in the 1990s of countries with substantial EI sectors, showed not only a negative correlation between the EI contribution to GDP and overall GDP growth, but also that those countries most reliant on EI had a greater instance of experiencing negative growth over that period. This is a major issue since the extractive sector represents a significant percentage of total export revenues in several countries of the Commonwealth, as illustrated in figure 2.

4 World Bank, *Extractive Industries and Sustainable Development*, 2005.

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Country	Region	Share of export revenue	Product description
Nigeria	Africa	Over 90%	oil
Brunei Darussalam	Asia	Over 80%	oil
Botswana	Africa	Over 80%	diamonds, copper, nickel
Zambia	Africa	Over 60%	copper, cobalt
Trinidad and Tobago	Caribbean	Over 60%	oil and gas
Jamaica	Caribbean	Over 60%	alumina, bauxite
Mozambique	Africa	Over 40%	aluminium
Papua New Guinea	Pacific	Over 35%	gold, copper
Ghana	Africa	Over 30%	gold
South Africa	Africa	Over 20%	platinum, gold

Figure 2. EI share of export revenue for sampled Commonwealth countries⁵

An obvious conclusion from this finding is that it is clearly risky for countries to be overly reliant on EI as a driver of economic growth. Even though countries such as Botswana and Trinidad and Tobago – both with EI contributions greater than 20 per cent of GDP and both with a GDP per capita higher than \$5,000 – have benefited from a sizeable EI contribution to their economies, it is evident that, too often, there has been a failure to maximise the potential benefits of EI activity. This has usually been due to governance weaknesses, as well as the inherent characteristics of EI activity discussed below.

Revenue uncertainty and volatility

Because the level of extraction can vary from year to year, and commodity prices also fluctuate significantly, revenues from EI activity tend to be highly volatile. One example here is oil prices. From about 1985 to the early 2000s, a barrel of oil was mostly in the \$20–\$30 range (with a short decline to \$15 in 1998). The upward shift to the \$40–\$70 per barrel range in the early 2000s was seen by some analysts as a temporary discrepancy, and that prices would rapidly revert to their lower historical range. Then, in July 2008, oil prices reached an all time high of \$145 per barrel. It is now unclear what constitutes the new baseline for oil prices, though with many indications (including from the International Energy Agency) that the global oil supply has now peaked, a return to the \$20–\$30 range appears to be highly unlikely. An upward and increasingly unpredictable long-term price trend is probable as demands increase on a globally dwindling supply. This translates into volatile revenues for governments and uncertain profitability levels for companies.

5 United Nations Conference on Trade and Development (UNCTAD), *World Investment Report: Transnational Corporations, Extractive Industries and Development*, United Nations, 2007, page 87.

Dutch disease

EI activity can lead to macroeconomic destabilisation and other negative economic impacts, particularly when there is limited economic activity beyond the extractive sector. For example, the large earnings from natural resource extraction can lead to the 'Dutch disease' phenomenon (so called because it first occurred in the Netherlands), involving exchange rate overvaluation, which in turn causes a decline in the competitiveness of other economic sectors. The national economy thus becomes over-dependent on the extractive industries and, due to the inflationary pressures associated with exchange rate overvaluation, the country may often face an increased cost of living. The country can become extremely vulnerable once the resources are exhausted. These issues are discussed in more detail in the revenue management section below. However, as shown by the Trinidad and Tobago case study on page 28, prudent fiscal policy can help to avoid at least some of the symptoms of Dutch disease.

State and public participation in extractive projects

Some governments have tried to maximise their share of benefits from the extractive sector by participating in projects. However, this is not without its risks. Government participation affects the risk-reward balance for investors, and if the government does not bear the full risk proportionate to its share, an investor will seek to get compensation for taking it on behalf of the government. Typically in a joint venture participation undertaken on a commercial basis, the government would pay for its share of equity without the help of an EI company.

Experience in several countries indicates that where the government chooses to set up a publicly-owned oil, gas or mining company, the entity should be legally independent from the government, it should operate transparently (preferably subject to the same reporting requirements as private sector companies) and it should bid for projects competitively, subject to the same market forces as publicly-traded companies. These measures can help to avoid corruption, market distortion or the creation of a monopoly. In addition the publicly-owned company should avoid conducting any regulatory or other sector oversight function, as this can easily create conflicts of interest.

Social tension, poverty and conflict

The benefits of EI activity are rarely evenly distributed. As discussed in the second section of this paper (page 23), those who tend to see least benefit from EI activity are often the local communities where the extraction takes place. This may explain the evidence pointing to a high positive correlation in several countries between EI activity and socio-political instability – though it should be recognised that the discovery of oil, gas and minerals *per se* may not lead to instability, but could worsen existing social tensions, particularly in the absence of strong governance systems.

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Many academics⁶ have studied the link between EI and political instability. In general, these studies have indicated that the presence of natural resources may increase the risk of conflict in four ways: by affecting a country’s performance in other economic sectors; by making government weaker, less accountable and more prone to corruption; by giving the populations of resource-rich regions incentives to seek independence from central government; and by providing financial resources to support political insurrection. The presence of natural resources can therefore become part of a complex set of factors that ultimately leads to political instability.

Too often, EI activity appears to increase a country’s poverty. In contrast to sectors such as agriculture where economic gains are often well distributed among a wide percentage of the population, the economic benefits of EI activity tend to be concentrated in the hands of a ‘lucky few’. There also appears to be a link between military spending and the presence of natural resources. To compound matters, expenditure in health and education may be even lower than in peer countries which do not rely on extractive industry revenue for their budgets.

However, none of these problems are inevitable. Examples such as Botswana, Trinidad and Tobago and, historically, Canada and Australia demonstrate that it is possible to use natural resource wealth to transform society for positive ends. Botswana today – with mineral exports comprising almost 90 per cent of the country’s total exports – has one of the highest rates of GDP per capita in sub-Saharan Africa and the smallest number of people living below the poverty line. Looking at these and other successful countries, what is clear is the importance of legal, fiscal and commercial frameworks, the strength of institutions and ensuring good governance.

The ‘frameworks-institutions-governance’ concept

Three interlinked components appear to be necessary to ensure successful oversight of EI activity: well-enforced legislative and regulatory frameworks; strong institutions with adequate capacity; and good governance according to widely-shared principles.

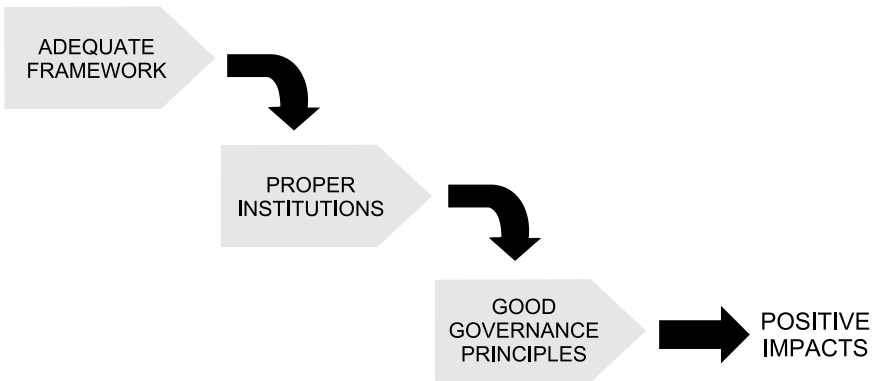


Figure 3. The three interlinked components for successful oversight of the extractive sector

6 Examples include Professor Michael Ross of UCLA and Professor Paul Collier of Oxford University.

Adequate frameworks are legal and regulatory arrangements including sector laws, fiscal regimes, production sharing arrangements, revenue management laws, licensing and any other secondary legislation and regulations that are required in order to provide the rules and laws in which EI activity occurs.

Proper institutions include a mining or petroleum department with qualified and competent personnel including commissioners and inspectors; competent tax authorities with technical expertise and access to technical assistance⁷ in the complex field of EI taxation, as well as an environmental unit and other departments relating to the field of resource extraction.

Good governance principles are essential. The concept of governance is a complex one but is defined broadly for the purposes of this paper as the authority and capability of institutions to perform a clearly-defined role, and the ability to draw on the support of political leadership where necessary.

Each of these criteria is discussed in more detail below.

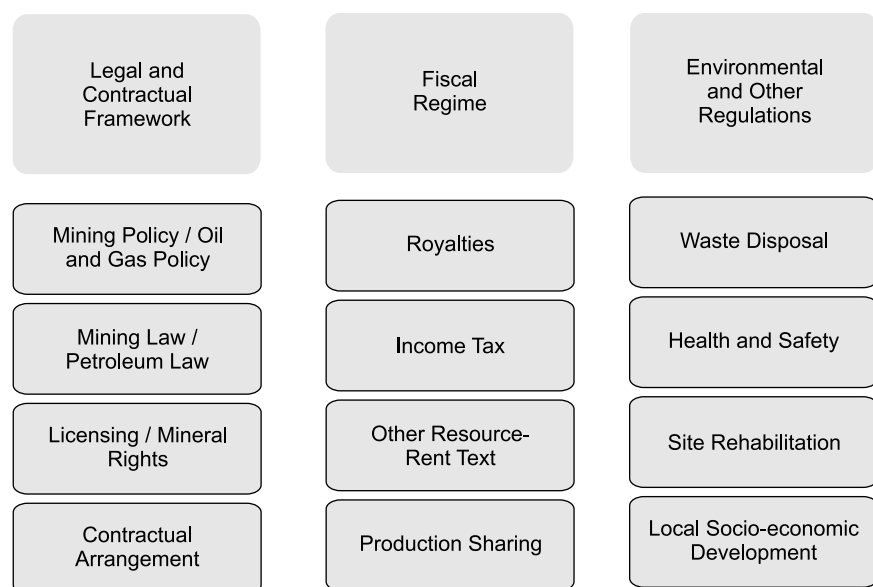


Figure 4. Examples of a legal, fiscal and regulatory framework to underpin successful EI activity

⁷ Within the Special Advisory Services Division of the Commonwealth Secretariat, the Economic and Legal Section provides extensive assistance to member countries in establishing legal, fiscal and commercial frameworks to govern mining as well as oil and gas activities. The objective is to help countries secure foreign investment while maximising the economic and social benefits accruing from these activities. The scope of interventions covers developing policies and laws, fiscal regimes, production-sharing agreements, revenue management and integrating issues of procurement, health and safety as well as environmental aspects such as climate change considerations and site closure and rehabilitation.

Adequate frameworks

Legal and contractual framework

The legal and contractual framework and the development of fiscal policy measures should help maximise the benefits of natural resources activity for the country, local communities and wider society, coupled with measures to minimise and manage the potential negative social and environmental impacts of EI activity.

There are several reasons why comprehensive and well-implemented legislative and regulatory frameworks are essential to the governance of EI activity. As a first step, foreign investors require a minimum of rules before making a positive investment decision, because of 1) the long-term nature of the investment; 2) the extremely high capital intensity of the industry, especially in mining; and 3) the immobility of assets once built. The level of investment required to develop a natural resources project can be even higher than comparable industrial activity due to deficient infrastructure – EI activity requires (among other things) reliable roads, bridges, power and water. All of these factors mean a large-scale extractive project can be beset by risk. For countries hoping to attract foreign investment, macroeconomic and socio-political stability, proper legal frameworks are essential prerequisites.

In devising legal and contractual frameworks, it is important to entrench internationally accepted standards and practices concerning natural resource sector administration and management. However, this needs to be done in a manner that is tailored to the particular circumstances of the countries concerned. This includes making appropriate provisions in legislation that reflect best international practices for transparency in decision-making, together with measures that are designed to uphold accepted standards of corporate responsibility for companies, as well as enhancing the developmental benefits for local communities in areas where extraction occurs. The Cook Islands case study on page 12 shows how one country is setting up a robust legislative framework for minerals extraction well in advance of the commencement of EI operations.

Environmental framework

Decision-makers in the natural resources sector should apply internationally accepted best practice in environmental management.⁸ This includes legal and policy measures that underpin environmental safeguards such as environmental impact assessments as a prerequisite for the granting of rights to companies to engage in oil, gas and mineral exploration and development, as well as measures to support effective environmental monitoring and the mitigation of environmental damage.

⁸ For example, the International Financial Corporation (IFC)'s Social and Environmental Performance Standards.

Fiscal framework⁹

Arrangements for the fiscal framework must balance international competitiveness (in order to attract and sustain foreign investment in the natural resources sector) with fiscal benefits for the host country. This is not an easy balance to strike, though at least one important feature of an adequate fiscal regime is its progressivity. A progressive regime ensures that the government will be in a position to capture a higher share of fiscal benefits generated from EI activity as a project's profitability increases.

There has been significant debate about whether terms should be fixed or negotiated on a project by project basis. Indeed, the practice of making agreements on a project by project basis is currently being revisited, particularly in instances where the terms were negotiated in a non-transparent manner. Governments have typically justified such secrecy on the basis that large-scale mining poses a unique public administration challenge beyond the scope of the general tax system and that it was necessary for deals to take place behind closed doors in order to enhance the government's bargaining power.

In practice, large companies may have the upper hand in private negotiations because they are able to fund greater legal and financial resources than the government. Also some countries have entered into a 'race to the bottom', whereby governments competed with each other by offering more and more favourable terms in order to attract foreign investment, to the detriment of the country's development.

Experience therefore suggests that, in general, one-on-one negotiations between governments and companies have generally led to more favourable terms for the companies. This in turn implies that governments would serve the interests of their countries more effectively by moving towards fixed terms for investors, and conducting negotiations on an open and transparent basis.

The essential role of institutions

In many countries, adequate legislative and regulatory frameworks already exist, but implementation has been a challenge due to a lack of public administration capacity. Strong institutions are particularly important to the oversight of EI activity and they need to cover the same broad categories as the frameworks: legal and contractual; fiscal; and environmental. For instance, the first set of institutions would include a mining or petroleum department that handles the activities of the sector, including implementation and monitoring of contractual agreements and management of licensing and mineral rights. This could be complemented by an independent petroleum or mining board that

9 For a full discussion of different fiscal frameworks in mineral-rich countries, see *Minerals Taxation Regimes: A review of issues and challenges* Commonwealth Secretariat and International Council on Mining and Metals, 2009, <http://www.icmm.com/page/12880>.

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would ensure additional oversight of the sector. The second category of institutions relates to revenue collection and finance, with the core institutions including the tax and customs authorities. The Auditor-General could also play an important role, especially in countries where there is a national oil (or mining) company. The third category relates to institutions responsible for managing environmental and other issues, such as health and safety, waste disposal and site rehabilitation.

Institutions are often the weak link in the concept of 'frameworks-institutions-governance'. Frameworks may have been developed and reviewed with the assistance of international organisations such as the World Bank, UN agencies, or the Commonwealth Secretariat. These frameworks reflect international best practice and include provisions covering the whole spectrum of issues arising from EI activity. Unfortunately, institutions often lack the moral or practical authority to monitor compliance with these frameworks. They may also have insufficient resources to operate and effectively ensure that the frameworks are implemented. Worse, local institutions may simply be by-passed by the political elite. As a result, the frameworks are often not properly and fairly administered. For instance, tax authorities may lack capacity to determine tax payments, audit companies' tax filings and adequately challenge these filings if necessary, in order to ensure full tax collection.

Another consideration is to strike a balance between the potential revenue collected by a fiscal regime, and the costs of actually administering collection of the revenue. Administration and enforcement costs may include the development of effective tax filing and auditing systems, hiring and training additional tax commissioners, and contracting EI accounting specialists. In some countries where tax receipts from EI activity can represent 20–40 per cent of total government revenue, it is not unusual to find only a few commissioners to deal with a number of oil, gas and mining companies representing millions of dollars of revenues.

Some governments have faced difficulties in deciding whether to open up to resource extraction before a well-structured and well-staffed system is available, or whether to wait until all the elements are in place before seeking foreign investment. A possible way out of this deadlock may be to subject EI companies to as simple a system as possible initially, perhaps the existing general tax system. To avoid the risk that an initially simple regime that was intended to act as a temporary stop-gap will remain permanent, this approach should be accompanied with a clear roadmap for the strengthening the system and building implementation capacity over time.

CASE STUDY 1: The last frontier: Deep Sea Mining – Developing an efficient regulatory framework in the Cook Islands

The islands and the resource

The Cook Islands comprises 15 widely dispersed islands in the South Pacific Ocean between French Polynesia and Fiji. The total land area of the country is 240 square kilometres, while the Cook Islands' exclusive economic zone covers a maritime area of nearly 2 million square kilometres. Being a small island state with a population below 25,000 inhabitants, the extractive industry could be either a blessing or bring unwelcome disturbance to the socio-economic balance, the political stability and the historical peacefulness and quality of life of the islands. The smaller the state, the more fragile this balance often is.

Manganese nodules were first discovered on the ocean floor in 1803. Since the 1960s manganese nodules have been recognised as a potential ore source, investigation of which has been stimulated by the progressive depletion of land-based mineral resources. These nodules are formed by metallic elements that slowly precipitate out of the ocean water. The most abundant element is manganese, but the nodules are actually polymetallic and include other minerals such as cobalt, an extremely valuable metal due to its intrinsic properties and its use in super-alloys. Not only is the estimated Cook Islands nodule resource extremely large, but also the nodules can occur in very high densities (up to 60 kg/m²) and they appear to have one of the highest cobalt content recorded in the Pacific.

Getting it right, from the start

The favourable global investment climate and upwards direction in commodity prices over the past decade are motivating companies to consider pursuing the exploitation of unconventional resources that were previously uneconomic or were marginally profitable. This includes deep seabed mining, particularly for polymetallic nodules. In recent years, mining companies have been positioning themselves to secure the rights over these resources. Occasionally, governments have been placed under considerable pressure by mining companies to allocate rights to engage in seabed mining, notwithstanding the lack of a proper and effective framework under which to manage and regulate the activity. The challenge for the Cook Islands has been to plan for the future commencement of seabed mining, and to establish good practice principles with regards to the management of natural resource wealth for the successful positive transformation of society. Because the potential global value of the main minerals (cobalt, nickel and copper) can represent billions of dollars, the question is not whether transformation will occur but rather if the government will be able to properly manage revenue generated by seabed mining for the benefit of current and future generations of Cook Islanders, whose living has traditionally depended on tourism, agriculture, and the pearl trade.

Legal and regulatory preparedness

As discussed in this report, one of the key ingredients to ensure that the country is positioned to reap the successful benefits of the extractive sector in positive societal transformation is the existence of regulatory capacity to cater for the effects of wealth created from the sector. So far, the Government of the Cook Islands has taken all the right steps.

The National Seabed Minerals Policy (National Policy) adopted in 2009 forms the basis for the management and regulation of the seabed minerals sector in the Cook Islands. To this end, the National Policy sets out a series of governing principles for the management of the sector, which are intended to ensure that the seabed minerals sector is managed in a predictable, transparent and efficient manner and to encourage private sector investment. It also guarantees that the Cook Islands is positioned to capture and benefit from a fair and equitable share of revenue generated from seabed minerals activity, and ensures that such revenue is wisely invested for public benefit.

The Government has also developed a comprehensive law to underpin the regulation of the seabed minerals sector, in the form of the Seabed Minerals Bill 2009. The Bill is intended to give effect to many of the measures outlined in the National Policy, and will establish a comprehensive regulatory regime that addresses important issues such as licensing, monitoring, compliance, enforcement, royalties and other financial requirements, health and safety and environmental management.

Institutions and governance

The Government is establishing an institutional framework for the management and regulation of deep seabed mining. This is to ensure that the seabed minerals sector is managed in an efficient and effective manner, based on accepted standards of institutional governance and regulatory practice. The National Policy provides for the establishment of specific government agencies and bodies through legislation, which will be empowered to exercise specific responsibilities for aspects of the management of the seabed minerals sector. For example, a new National Seabed Minerals Authority will be created for the purpose of the day-to-day management of the sector, including the granting of rights to mining companies to engage in seabed minerals activity, together with responsibilities for monitoring, compliance and enforcement. Provision has also been made for the establishment of a Seabed Minerals Advisory Board, which will operate as a consultative mechanism between the Government and the people of the Cook Islands on matters relating to the management of the seabed minerals sector of the country.

Capturing rent for the Cook Islands

One important factor to optimise benefits for transforming society is through maximising government revenues. The peculiarities surrounding the value chain of deep seabed nodule mining in the Cook Islands is such that caution is being exercised in the determination of how best to capture rent for the Government. The unique characteristics of deep seabed mining (particularly in relation to polymetallic nodules), combined with the particular circumstances of the Cook Islands, underscores the need to develop specific fiscal arrangements, which will address these unique features.

Ensuring transparency and sound revenue management

The central pillar in the new regulatory regime in the Cook Islands is transparency – both in the allocation of rights to mining companies to engage in seabed minerals exploration and development, and also in terms of the public disclosure and management of revenue generated by seabed mineral activity.

To ensure that the revenue generated is properly recorded and managed for the public benefit, the National Policy expressly adopts key elements of the Extractive Industries Transparency Initiative (EITI) Principles and Criteria. This includes the implementation of the principle that industry should be required to publish, at regular intervals, information concerning payments made to Government to a wider audience in a publicly accessible, comprehensive and comprehensible manner. Accordingly, under both the National Policy and the new legislation that implements it, mining companies will be legally obligated to publish details of royalties and any other contractual payments made to the Government in connection with seabed minerals activity.

The National Policy also expressly provides for the establishment of financial mechanisms to provide for the rule-based management of revenue generated by seabed minerals activity in the Cook Islands. The basis for the establishment of mechanisms of this kind is to ensure that the Government is positioned to provide for the management of revenue for the long-term benefit of the country.

Maximising the benefits for Cook Islanders

The National Policy provides measures and initiatives through which the contribution of the development of the seabed mineral resources to sustainable economic development and economic empowerment of the Cook Islanders is ensured. Many of these measures will be incorporated within the new legal framework including: requiring mining companies to develop proposals for the employment and training of Cook Islanders and to provide an agreed level of funding for education in seabed mineral operations and related disciplines; requiring companies to develop proposals for the local procurement of goods and services, requiring mining companies to develop social amenities and infrastructure; and requiring mining companies to

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address post-mining economic viability issues for local communities in their mine development proposals.

These and other requirements contained in the National Policy are guided by three operating principles: empowerment of Cook Islanders, corporate social responsibility, and collaboration between the mining companies and Cook Islands communities.

Conclusion

The Government of the Cook Islands has reached an advanced stage in the development of a comprehensive legal and regulatory regime to oversee deep seabed mining operations and to govern the management of revenue generated from such activity. What is remarkable about this work is the effort being made by the Government to adopt policies and implement practices that are intended to ensure that present and future generations of Cook Islanders will benefit from the development of the country's deep seabed minerals.

Good governance principles

Institutions must have a clearly defined role, and they must have the authority and capacity to perform this role, with the support of the political leadership where necessary. Widely-shared good governance principles are essential in order to clarify who has the authority – set by the law, rules and regulations – to take a decision, and in turn ensure that these decisions are in line with the law, rules and regulations. The primary challenge is often interference, particularly political interference.

Another challenge is discretionary behaviour, which bypasses checks and balances and processes in place to govern EI activity and which may be exercised in the granting of exploration licences and mining rights, or in the terms that are given to EI companies. Such behaviour has been justified on the basis that relevant institutions may take too long to arrive at the necessary decisions.

Part of the answer to these problems is to ensure a clear separation of powers: members of parliament and ministers should be responsible for putting in place adequate legislation and proper institutions. Once this has been done, well-resourced, independent institutions can apply the regulations and pursue their mandate to oversee EI activity.

Transparency

Transparency is a recurrent term in current discussions of good governance and EI activity (see box 1). It refers to the principle that key decisions about EI activity are made openly and publicly wherever possible. It means that individuals or Agencies who

make these decisions are held accountable for them, and should be prepared to justify and explain them in terms of the interests of the country. The principle of transparency does not necessarily mean that all proprietary information has to be made public, nor does it involve providing information that is legally protected.

Transparency is not a panacea but it can help to open up conversations about EI activity, which in turn can strengthen governance. Transparency can help to curtail not only interference but also discretionary behaviour in the administration of the various regimes. Also, when the scale of EI revenue flows becomes public, this inevitably leads to questions about how the government is allocating the money. This is where sound revenue management is critical.

Box 1. The Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) is a global reporting standard requiring governments to publish payments they receive from EI companies and for companies to publish what they pay to governments, in a process that is observed by civil society organisations. Twenty-nine countries are so far implementing the EITI as 'candidate countries' (including seven Commonwealth members¹⁰), with two countries (Azerbaijan and Liberia) that are now 'EITI compliant'.

Implementing the EITI is not a straightforward process – as suggested by the fact that only two countries have so far achieved compliance – but it has been endorsed by many major governments, donors, EI companies and international civil society groups.

www.eitransparency.org

The importance of revenue management

EI revenues have too often been used not for positive social transformation such as health and education initiatives, but for short-term or narrowly political agendas. Sound revenue management will ensure that the correct balance is struck between saving EI revenues for future generations, and spending current EI revenues on projects with long-term benefit. Five issues are of particular importance to ensure sound revenue management: stabilisation; sterilisation; savings; socio-economic growth; and safety.

Sterilisation

EI activity tends to create pressure on the domestic economy due to the inflow of investment capital, higher employment at relatively high wages and increased export revenues. All of this economic activity tends to increase demand for goods and services

10 Cameroon, Ghana, Mozambique, Nigeria, Sierra Leone, Tanzania and Zambia.

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and on the labour market, as well as creating inflationary pressures which can negatively impact industry and economic actors not involved in the extractive sector.

Normally when companies or individuals pay taxes to the government, it reduces disposable income. In other words, money earned by companies or individuals is either spent, or transferred to the government as a tax: it is a 'zero-sum game' (if we exclude savings). However, in the case of EI activity, because of the additional wealth created, both disposable income *and* tax revenue increase. This in turn is likely to put the overall economy out of balance and create inflationary pressure. Without sterilisation measures to combat this (for example by investing some of the money overseas) Dutch disease impacts are more likely to occur. Even with sterilisation measures in place, Norway, which had invested almost all of its petroleum revenues outside the country, still suffered from inflationary pressures in its economy and ended up with a very high cost of living.

Stabilisation

Revenues from EI activity show greater variations over time than possibly any other sources of government revenue, partly as a result of fluctuations in commodity prices. Governments tend to develop a dependence on these revenues in their budgetary planning. It is a real challenge to create a budget that can withstand a temporary decline in commodity prices and natural resource revenues without having to substantially alter economic policy.

The idea of stabilisation is particularly important in the case of mining since minerals prices, in the long run, tend to have a cyclical pattern. This is mostly true for 'base metals' such as zinc, copper and nickel. The phenomenon is less obvious for precious metals, especially gold, because of their nature and the fact that they also play the role of 'refuge investment'. For base metals however, stabilisation can be very effective. Chile, for instance, has been managing the fluctuation of copper prices very effectively through a stabilisation fund mechanism in which revenues are put aside when the price of copper and corresponding revenues are very high, and can be drawn upon when copper prices are at the lower end of the cycle. As a result, the government of Chile has been able to cope relatively well with the 2008/09 global economic downturn and depressed commodity prices.

For oil and gas, stabilisation is less straightforward since this predictable cyclicity does not exist – oil and gas prices do not appear to follow a mean-reverting pattern. The price of oil in particular is affected by too many factors in the short, medium and long term, such as the ability of some large producers such as Saudi Arabia, to reduce or increase supply at very short notice. As noted above, a long-term upward trend in oil prices is likely, due to increasing demands on a increasingly expensive and volatile global supply.

Governments of oil-rich countries can set thresholds for prices beyond which money is either set aside in a stabilisation fund or drawn down from the fund if the lower threshold is reached. A challenge is to determine the level of these thresholds, given both the short-term uncertainty of price and its long-term upward trend. However in some countries, such as Trinidad and Tobago, a stabilisation fund has been established relatively successfully (as described in the case study on page 19).

Socio-economic development

Although some EI revenues should be put aside for future generations, long-term investments in infrastructure and socio-economic projects can be made while EI activity is still ongoing. Such projects might include roads, education, healthcare, skills, knowledge and technology. This work can be delivered through the state budget.

In practice, managing an increased budget properly, and avoiding waste, is not straightforward. Once the population becomes aware of available funds, the government is likely to find itself under pressure to increase expenditure. Although some socio-economic projects may have long-term benefits, spending and investment decisions can become highly politicised. In this climate, short-term benefit projects, rather than long-lasting ones, can often become the norm.

There is also the issue of whether local government should receive a share of the additional revenues. As discussed below, challenges can arise with redistribution unless the central government takes into account the local absorptive capacity as well as the technical and institutional capacity to deliver programmes and manage projects. Some additional revenue can therefore be invested in increasing the effectiveness of public spending, for example by creating structures for project monitoring and evaluation.

Experience suggests that increasing current expenditure on items such as subsidies and wages to other sectors can be ineffective as it can fuel demand and have negative macroeconomic consequences. By contrast, expenditure to improve communication, power and transportation infrastructure can stimulate development of the non-EI sectors (as demonstrated by the case study on Tanzania on page 28). Health and education projects can also be beneficial for long-term development if appropriately targeted towards primary and secondary education and primary healthcare.

One common mistake is to underestimate the long-term financial and human resource requirements for maintaining new projects, such as upkeep and repair costs for infrastructure, schools or hospitals, or budgetary provisions to cover the salaries of teachers, nurses and doctors. Too often governments have spent considerable sums of money on ambitious projects that have rapidly become 'white elephants' because of the high, unaccounted-for costs of operation and maintenance, and the subsequent drain on resources due to the remedial measures.

CASE STUDY 2: Effective wealth management as an engine for transformation: The Trinidad and Tobago Heritage and Stabilisation Fund

Trinidad and Tobago is a good example of a country that has taken positive steps towards responsible and effective natural resource revenue management, having successfully overcome early challenges. With oil and gas representing over 40 per cent of the country's GDP, 90 per cent of exports and close to a half of total government revenue, EI are clearly at the heart of Trinidad and Tobago's economy. For oil, the country greatly benefited from the additional revenues accruing from the 1973-74 and 1979-80 price shocks. However, the subsequent collapse in prices from the mid 1980s and the 1990s led the country to perform sharp fiscal adjustments, resulting in major negative economic impacts: output per capita decreased by almost one third and unemployment more than doubled. The need to stabilise EI revenues became clear and the government set up the Interim Revenue Stabilisation Fund (IRSF) in 2000.

In 2007, the scope of the IRSF was expanded and it was legally renamed as the Heritage and Stabilisation Fund (HSF). Its objective was to capture part of the EI revenues for stabilisation, with an added objective of saving for future generations.

Surplus petroleum revenues

The remit of the HSF is to save and invest surplus petroleum revenues derived from the country's upstream production activities for two primary purposes. First, the fund will be used to sustain public expenditure during periods of revenue shortfalls triggered by drops below set thresholds for oil and gas prices. The second objective is to provide an alternative stream of income to sustain public expenditure capacity when the EI revenue stream starts to decline.

The operational structure of the HSF is based on set trigger point for deposits and withdrawal. Deposits are made to the fund when petroleum revenues collected over a certain period exceed by 10 per cent the estimate for that period. If collected revenues fall below 10 per cent of the estimates for the set period, there are mechanisms by which the shortfall is met.

Critical success factors

This kind of fund has only been successful in a limited number of countries. The structure and governance principles of the HSF are therefore fundamental to its success. It is also important that its objectives are well-defined and free from conflict. More importantly, experience has shown the necessity of mechanisms for deposits and withdrawals that are clearly defined and that do not leave too much discretionary power over the number and level of the transactions in and out of the Fund's account. While there are concerns over the Fund's combination of stabilisation and savings roles, there are clearly specified mechanisms on how this structure is managed. In the event of a sustained downturn in petroleum revenues, the law sets a floor beyond which no withdrawals can be made from the fund.

Another useful aspect of the structure is the separation of the Fund from the country's international reserves. Without this separation, there could be ambiguity with regards to the investment objectives of the Fund versus the management of the government's international reserves.

Good governance, transparency and accountability are crucial to the success of this type of fund. The governance structure of the HSF is specified by Parliament, which provides legislative oversight. This has given the people of Trinidad and Tobago the opportunity to assess its performance transparently. One of the measures by which accountability is ensured is through the legislative requirement for periodic reports on holdings, performance and risks, as well as independently-audited financial statements.

Wider transformation

The role of the fund has expanded beyond the geographic confines of Trinidad and Tobago, mainly through contributing to such regional efforts as the CARICOM petroleum fund. The main aim of the broader fund is to provide financial and technical assistance to less advantaged countries. The fund has financed a number of socio-economic development projects as well as infrastructure projects such as the construction of an airport in St Vincent. However, the long-term success of the fund lies in the will of its management to maintain its guiding principles. The more revenue that accrues to the fund, the higher the likelihood of pressure to spend it on short term projects.

What about Dutch disease?

The extractive industry has been a blessing for Trinidad and Tobago. As a result of economic reforms adopted in the early 1990s, tight monetary policy, and their prudent approach in managing oil and gas revenues, the country experienced an average real GDP growth rate of around 8 per cent per year over the last decade. Per capita income has almost tripled from US\$7,000 to US\$20,000, more than twice the regional average. This, however, has not happened without some Dutch disease impacts: the economic boom has been accompanied by inflation approaching double digits; real estate prices have been soaring, even with government programmes to increase the supply of houses; and rapid growth has brought to the forefront serious capacity constraints in the labour market and pressure on infrastructure, especially utilities. Rising incomes also seem to have led to lagging agricultural production, which has been in constant decline since the development of the extractive industries.

Saving for future generations

Natural resource reserves may be depleted within a period of decades, creating the prospect of great wealth followed by poverty for future generations – unless investments are made for the long term. This means that some of the revenue generated by the EI activity should be saved in order to provide income after the natural resource has been depleted. It also means that revenues invested during the period of EI activity should fund long-term development projects designed to contribute to economic diversification where possible.

Safeguarding EI revenues

The idea of savings revenues is essential, but experience in various jurisdictions has shown that it is a real challenge to protect the saved revenues from being accessed at short notice at some crisis point in the future. The sheer size of EI revenues compared to a government's other revenues increases this risk of misuse or misappropriation. Additional mechanisms may therefore be required in order to account for revenue receipts and expenditures. This is particularly important when EI revenues have been accumulated and saved throughout the years for the use of future generations.

For instance, after the petroleum boom of the 1970s, the Alberta 'Heritage' Petroleum Fund in Canada had retained only about 10 per cent of petroleum revenues. The funds had been used to reduce the province's debt and to fund various good projects, but nevertheless the 'heritage' function of the fund was not entirely fulfilled. Again, around the world, there are only very few examples where funds have stood the test of time.

In fact, in many countries it has proved almost impossible to escape political demands for more spending, leading to insufficient savings for future generations. This is why it is important to have some non-discretionary rules to limit the yearly spending in order to make it easier for Ministers of Finance to escape such pressures. For example, creating a separate funding vehicle, with proper accountability and governance principles in place, can help to ensure that the revenue and disbursements are accounted for in a transparent and responsible manner. By dissociating allocation of funds from the day-to-day pressures of government budget management, and being transparent about the rationale for setting money aside, a natural resources fund can help to maintain a long-term perspective for the use of the EI revenues.

Local versus central government revenues

As discussed more fully in the next section, the most significant social, economic and environmental impacts of resource extraction tend to occur in the region where the deposits are located. During construction, for example, work seekers from across the region and beyond converge on an extraction site. The site is likely to be located in a rural area with limited public services, which can quickly become overwhelmed and the local government may lack the capacity or resources to respond effectively.

Because of these challenges, and because revenues (which might be used to mitigate negative impacts and enhance positive impacts) are usually paid to central governments, some have argued for a redistribution of funds to areas affected by EI activity, as well as some kind of fiscal decentralisation.

However, it is very difficult to reach any conclusion on the experience of fiscal decentralisation and revenue-sharing arrangements in resource-rich countries. In cases where local distribution has occurred with positive results, it appears that determining success factors were the presence of effective local government agencies and unusually strong linkages that had been deliberately fostered between EI companies and other areas of the economy. In other cases, local community leaders or self-proclaimed 'representatives' have captured a large part of the local revenues. The key factor seems not to be the revenue-sharing arrangements themselves, but, as elsewhere, the quality of local institutions and local governance.