

CHAPTER 2 – www.eisourcebook.org

2.2 The Challenges

Many observers have noted the paradox that, all too frequently, development outcomes in the EI sector are less potent and less beneficial than expected¹. Indeed, the outcomes can become highly damaging to the resource-rich state. Resource-rich developing states typically underperform economically relative to non-resource-rich peers; they score badly against critical human development indicators; they experience environmental degradation; and they see more than their fair share of social and political instability and violent conflict. Taken together, factors such as these have led some to describe the outcomes as the ‘Resource Curse’ or the ‘Paradox of Plenty.’² This linkage of oil, gas and mining development with negative outcomes has become common currency among policy-makers, academics, civil society, and the media³. Probably due to the very large rents in the oil sector, it fares particularly unfavourably in such treatments of negative outcomes, such as violent conflict and corruption⁴. Research into these negative - or at least disappointing - outcomes has generated a rich and diverse literature of case studies and theoretical perspectives for analysis of the challenges that undoubtedly arise in the extractive industries⁵. However, a body of opinion has clearly emerged against the idea

CEPRIL
Centre for Energy, Petroleum and Mineral Law and Policy

¹ For example, the IMF has claimed that many resource-rich developing countries have failed to realize the full development potential of their natural resources: in a number of resource-rich developing countries, “economic growth has been disappointing” (‘Macroeconomic Policy Frameworks for Resource-Rich Developing Countries – Background Paper 1’ (2012); “Many resource-rich countries disappoint in their performance on economic and human development indicators”: ‘Managing Natural Resource Wealth’, Topical Trust Fund Program Document, IMF Office of Technical Assistance Management (2010), p.4. As a result, they have increased their technical support to governments to develop an improved in-house resource management capability on fiscal matters, making 85 separate missions in 2006-2012, and planning dozens more: James L Smith, (2012), ‘Issues in Extractive Resource Taxation: A Review of Research Methods and Models’, IMF Working Paper WP/12/287, p.3.

² For example, R Auty (1993) and T Karl (1999). The critical country attribute for purposes of the discussion which follows is resource dependency rather than absolute levels of resource wealth. Recent research suggests that states with high absolute resource endowments do tend to grow faster than those without. However, the same research finds a significant correlation between resource dependency and underperformance. See Brunnschweiler, C., and Bulte, E. (2006). *The Resource Curse Revisited and Revised: A Tale of Paradoxes and Red Herrings*. Zurich: ETH Working Paper 06/61.

³ It provides a driver for civil society assistance, evident in, for example: Copper Bottomed? Bolstering the Aynak Contract: Afghanistan’s first major mining deal (2012); Donor Engagement in Uganda’s Oil and Gas Sector: An agenda for action (2010).

⁴ For example, in the academic literature, the studies by M Ross (1999), *The Political Economy of the Resource Curse*. World Politics 51(2); I Bannon and P Collier (2003), *Natural Resources, and Violent Conflict* Washington D.C: World Bank; McPherson, C., and MacSearraigh, S. (2007). *Corruption in the Petroleum Sector*. In: *The Many Faces of Corruption: Tracking Vulnerability at the Sector Level*. Washington, D.C.: World Bank Publications. For NGO views, the following reports from Global Witness, an NGO, are not untypical of the tone: ‘Curse or Cure? How Oil can boost or break Liberia’s post-war recovery’ (2011); ‘Rigged? The Scramble for Africa’s oil, gas and minerals’ (2012). This has provoked various ripostes such as PJ Luong and E Weinthal’s ‘Oil is not a Curse: Ownership Structure and Institutions in Soviet Successor States’ (2010), Cambridge University Press, New York.

⁵ For example, ‘Escaping the Resource Curse’ (eds M Humphreys, JD Sachs and JE Stiglitz), Columbia University Press, New York (2007); *The Natural Resources Trap* (eds W Hogan and F Sturzenegger), MIT Press, Cambridge, Mass. (2010)

that such negative outcomes are in any sense inevitable⁶. Instead, it has sought to identify the features of EI development that, individually or in combination, may lead to those negative outcomes, with a view to facilitating interventions in policy that may at the very least mitigate their effects⁷. The most commonly observed negative features are reviewed briefly below.

2.2.1 Technical Factors

The three technical or 'non-political' factors most commonly identified as contributing to the resource curse are: (1) revenue volatility, (2) the so-called 'Dutch Disease', and (3) resource exhaustion.

Revenue Volatility The volatility of petroleum and mineral prices and hence a large proportion of revenues is well-documented, but arguably the challenges facing resource-rich economies of managing the long-term uncertainty of commodity prices has been under-estimated. Over the past 15 years alone, the price of oil has increased five-fold, fallen 50 percent, and then doubled again (see **Figure 2.1** below); only to trend downward and then drop (for oil) by almost 50 percent in the second half of 2014. Over a longer period, the average annual change in oil prices has been close to 30 percent.⁸ Mineral prices have shown similar volatility. Between early 2011 and early 2015, iron ore prices had fallen by 70 percent, coal by 54 percent and copper by 40 percent⁹. This will translate into more volatile budgetary revenues for exporters of these resources. Indeed, revenues are on average at least 60 per cent more volatile for

⁶ The high point in support for the negative view is probably an influential article by J Sachs and AM Warner (2001). 'Natural Resources and Economic Development: the Curse of Natural Resources. *European Economic Review* 45 (4-6): 827-38. The more recent approach (against the inevitability of the resource paradox or curse) is evident in IMF, 'Macroeconomic Policy Frameworks for Resource-Rich Developing Countries – Background Paper 1': "A natural resource "curse" is neither universal nor inevitable; growth may depend heavily on other factors, such as policies and the quality of institutions" (at p.6); *Natural Resources: Neither Curse nor Destiny* (eds D Lederman, WF Maloney (2007), World Bank/Stanford University Press (which through a series of case studies, argues that resource wealth, if coupled with appropriate institutional and policy choices, can be a significant advantage in achieving long-term economic growth).

⁷ An example of an industry initiative that has this goal is the ICMM Resource Endowment Initiative in mining. It developed an analytical framework, focused on governance processes, which incorporated underlying factors and rules of the game that affected social and environmental interactions and outcomes. The result was a practical toolkit to assess local, regional and national socio-economic impacts of mining. It also addressed the ways in which mining operations affect governance structures, institutions and policy changes at different levels of government: <http://www.icmm.com/page/84152/our-work/projects/articles/resource-endowment-initiative>.

⁸ Lipsky, J. (2009). *Economic Shifts and Oil Price Volatility*. Washington, D.C.: IMF Media Services Division. Available at: <http://www.imf.org/external/np/speeches/2009/031809.htm> (last accessed 1 April 2012).

⁹ Lisa Sachs and Nicholas Maennling, 'Resource Resilience: How to Break the Commodities Cycle', NRG, 16 June 2015.

resource-rich countries and spending volatility has been even greater, according to an IMF study¹⁰.

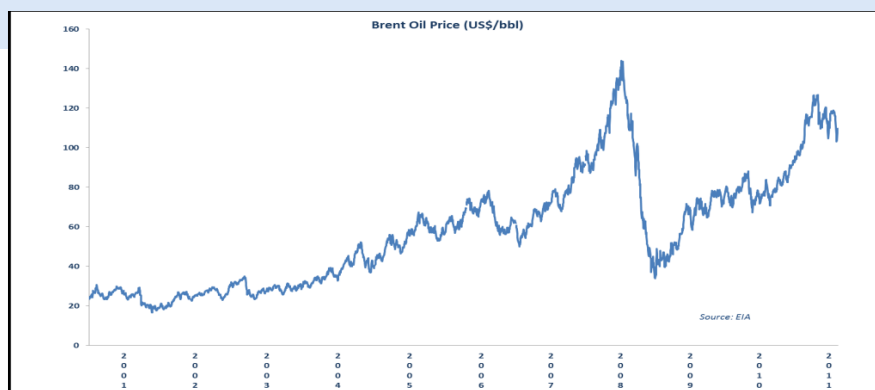
Volatility on this scale makes macroeconomic management difficult under the best of circumstances. Among the consequences are: budget deficits and increased borrowing; painful fiscal adjustments and the need for systems to manage them; lower capital investment and delayed or cancelled projects; lower rent generation and pressures for fiscal incentives to maintain investment, and exchange rate fluctuation¹¹. The challenge of volatility is compounded by the fact that the scale and direction of price changes are unknown, or at least very uncertain. As an IMF source has noted, “(b)ooms and busts can involve prices moving by as much as 40-80 percent for as long as a decade”¹². Price forecasts in the resource sectors have also been notoriously inaccurate (see **Figure 2.2**). As a leading petroleum expert noted, “(w)hat is remarkable about the 2014 price rout is not that it happened, but that it seemed largely unexpected by market commentators and financial institutions”¹³. In this context, it is not surprising that disruptive boom-bust expenditure cycles are nothing new in the extractives sector.

While price volatility is the most common source of resource revenue volatility, volatility may also result from the discovery and exploitation of major new and unexpected resource deposits.

CEPMLP

Centre for Energy, Petroleum and Mineral Law and Policy

Figure 2.1 Brent Oil Price (USD per barrel), 2001 – 2011



Source: US Energy Information Administration (EIA) website. Available at: www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm (last accessed 1 April 2012).

¹⁰ IMF, Macroeconomic Policy Frameworks for Resource-Rich Developing Countries-Background Paper 1 (2012), 12.

¹¹ The list is potentially longer: see for example NRG (2015) Ten Consequences of Lower Commodity Prices for Resource-Rich Countries.

¹² IMF (2015), Fiscal Monitor – The Commodities Roller Coaster, p.2.

¹³ Robert Skinner (2015), A Comparative Anatomy of Oil Price Routs: A Review of Four Price Routs between 1985 and 2014', School of Public Policy Research Paper, University of Calgary, Alberta, Canada, p.1.

Dutch Disease This phenomenon¹⁴ involves significant appreciation of a resource-rich state's real exchange rate. This appreciation puts upward pressure on domestic prices, which is attributable to a sudden and major inflow of foreign exchange associated with resource exports. As a result, pre-existing non-resource exports and import-competing industries lose their competitiveness, and domestic labour and capital shift to the resource and non-tradable sectors, which diminishes the host state's economic diversity. This shift often comes with adverse consequences on employment because shrinking sectors such as agriculture and manufacturing are labour-intensive and the expanding resource sectors typically are not. In addition to restraining economic diversification, Dutch Disease also increases a state's vulnerability to shocks stemming from the resource sector. These shocks frequently precipitate social and political unrest, particularly between resource-producing and non-resource producing regions *within* countries. This underscores the importance of policy responses to the problem of exchange rate appreciation.

Resource Exhaustion Oil, gas, and mineral resources are by their nature exhaustible and by implication so are the exports on which the countries depend. This requires policy makers to plan in advance for resource decline and eventual exhaustion, identifying a 'resource horizon'.¹⁵ It requires recognition on their part that EI-generated revenues are the transformation of assets in the ground into other assets. As one authority on mining comments, "(o)nce such resources have been extracted their physical form is profoundly altered and they can never be replaced in the same state"¹⁶. However, planning for the decline and eventual end to resource exploitation and associated revenues is a difficult task that is rarely executed in resource-rich states. A failure to plan, however, is likely to result in a need for wrenching and destabilizing economic adjustments. Of all of the three factors, this factor of exhaustibility is the one that is often believed to be unique to EI because the resources are non-renewable¹⁷.

¹⁴ Dutch Disease is the name attached to the adverse macroeconomic effects first experienced in the Netherlands following the discovery and exploitation of major natural gas reserves. Following the adoption of appropriate policy responses, considerable social benefits accrued to the Netherlands as a result of its gas discoveries and their subsequent development.

¹⁵ This is not an issue that only affects the EI sector, however. Shifts in international competitiveness can lead once dominant industries to meet a 'natural end' due to some structural change in the economy. Examples of this are evident in the developed world's manufacturing and automobile production industries, where shifts in economic conditions can bring certain sectors to a sudden end. One advantage that the EI sector has over other economic sectors is the clarity about its ultimate closure. This known inevitability should help place this planning issue firmly on the government agenda. Moreover, there are very few examples of countries that have actually exhausted their oil, gas or mineral resources: the island state of Nauru being a spectacular exception to this. It is easier to identify states that have experienced major damage from environmental mismanagement: deforestation in Easter Island for example. At the project level, however, the future exhaustibility of the resource can be a major concern, and at the policy-making level it can encourage fiscal discipline.

¹⁶ P Crowson, Mineral Resources Policy and Economics, Unit 1; CEPMLP course, An Introduction to Mining, Mineral Reserves and Resources (2009).

¹⁷ The recyclability of some natural resource materials should not be forgotten however.

2.2.2 Political Factors

In addition to the technical factors that contribute to the negative outcomes from resource development, there are a number of political factors that play a role. It is these factors that have proven even more difficult for policy makers to address. As a leading development economist has noted: “(a)lthough the initial explanation for the resource curse, Dutch disease, was purely economic, it has gradually become evident that the key issues are political”¹⁸.

A common thread in much of the recent literature is the central role of government behaviour: for example, in collecting, managing and distributing revenues¹⁹. At the same time, there is an element of critique: “governments have not always been the best stewards of these resources, increasing the clamour for better governance and social accountability for natural resource use”²⁰. To operationalize this critique and encourage improvements, efforts have been made to measure the quality of governance in the oil, gas and mining sectors of many countries. One example is the Resource Governance Index produced by the Natural Resource Governance Institute²¹. Taking a sample of 58 countries that collectively produce 85 per cent of the world’s petroleum, 90 percent of its diamonds and 80 percent of its copper, it is intended to act as a diagnostic tool to help identify good practices and also governance shortcomings. An initial finding is that more than half of the top performers are middle-income countries: Brazil, Chile, Colombia, Mexico, Peru and Trinidad & Tobago. This suggests that being a wealthy country is by no means a precondition for good governance.

Underlying this concern with governance is an awareness of a dynamic that links EI activities to the formation or exacerbation of institutional weakness²². When a state’s primary revenue

¹⁸ Paul Collier, ‘The Political Economy of Natural Resources’, 77 *Social Research*, no.4, (2010), 1105-1132 at 1105.

¹⁹ For example, a comprehensive study by the IMF concluded that the “evidence suggests that the quality of institutions (including in areas such as accountability and the quality of public administration) matters for fiscal outcomes, and that priority should be given to enhancing public financial management systems where appropriate” (2007, Ossowski, Vilafuerte etc.); “A consensus is emerging that policies will be effective in leveraging natural resource-led development only when they are compatible with the level of institutional quality and the political economy context of the country in question”: Otaviano Canuto in the Foreword to ‘Rents to Riches? The Political Economy of Natural Resource-Led Development’ (NH Barma et al, The World Bank, 2012), p.x.

²⁰ Otaviano Canuto, in Foreword to *Rents to Riches* (2012), p.xi.

²¹ <http://www.resourcegovernance.org/resource-governance-index/report> (last visited 6 April 2016). The indicators used to evaluate resource governance are institutional and legal setting; reporting practices; safeguards and quality controls, and enabling environment. The Index assigns a numerical score to each country and divides them into four performance ranges: satisfactory (71-100); partial (51-70); weak (41-50) and failing (0-40). The 2013 Index revealed “a striking governance deficit in natural resource management worldwide”, with only 11 countries earning an overall score of above 70, and the “vast majority of countries” exhibiting “serious shortcomings in resource governance”. The bulk of these countries meet the IMF’s classification as ‘resource-rich’.

²² Mehlum, Moene and Torvik (2006) use a measure of institutional quality that takes into account the rule of law, bureaucratic quality, government corruption, a risk of expropriation and government repudiation of contracts, and conclude that the main reason for diverging experiences is differences in the quality of institutions. Natural resource abundance will lower incomes in

stream is coming from natural resource rents, tax revenue from other economic sectors becomes less important.²³ There are likely to be few linkages with the rest of a resource-producing state's economy due to the capital-intensive nature of the EI sector industries, and the fact that, in many cases, the industry is dominated by foreign entities. Dependency on the EI sector for revenue can weaken a state's taxation system, which in turn may undermine the accountability of its rulers.²⁴ Resource-rich states can substitute tax revenues with resource revenue, distorting the relationship between taxation and representation.

This 'independence' of resource revenues from the general population can make it easier for elites in some states to manipulate those revenues for personal or political gain at the expense of the public good.²⁵ Furthermore, the complexity and opacity that is characteristic of many resource sector operations tends to obscure waste and abuse. The sheer scale of resource revenues, whether measured in absolute terms or in terms of the margins they generate, has also proved a lightning rod for graft and corruption.²⁶ In fragile states where property rights are not strongly rooted, the prospect of large resource revenue flows can trigger destructive rent-seeking competition.

Such considerations can erode accountability not only in the resource sectors, but in society and the economy as a whole. When scored against almost any indicator of good governance, country comparisons usually find developing states with a high dependence upon resources for their development in the bottom third of any list.²⁷ However, it is sometimes argued that

economies if weak institutions push scarce resources into unproductive activities by encouraging rent-seeking behavior: 'Institutions and the Resource Curse', *The Economic Journal* 116, 1-20. The link has also been explored by R Auty, *Resource Abundance and Economic Development* (2001), Oxford University Press, NY; and A Gelb, *Oil Windfalls* (1988). Oxford University Press, NY. These 'weak' institutions are usually characterized by at least a limited capacity, and poorly developed policies.

²³ See Section 2.2.1.

²⁴ As a recent World Bank study has stated: "With the exception of a few developed [and developing] countries, the governance record of most oil exporters is at best mixed... [Most of the] common problems that confront countries with new oil discoveries include rent-seeking behavior and corruption, political patronage, lower entrepreneurship and capacity for investment, and increased authoritarianism and civil conflict." World Bank (2011). *The Challenges and Opportunities of Ghana's Offshore Oil Discovery*, Africa Trade Policy Notes, Note No. 14. Washington, D.C.: World Bank Publications, p. 2. Available at: www-wds.worldbank.org (last accessed 1 April 2012).

²⁵ "Over dependence on oil exports is strongly associated with weak public institutions that generally lack the capacity to handle the challenges of petroleum-led development." Karl, T. (1997). *The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley: University of California Press, p. 25.

²⁶ Le Billon, P. (2011). *Extractive Sectors and Illicit Financial Flows: What Role for Revenue Governance Initiatives?* Issue U4. Bergen, Norway: CMI Chr. Michelsen Institute, p. 2. C MacPherson and S MacSearraigh (2007) emphasize the role of this factor in the hydrocarbons sector: Corruption in the Petroleum Sector, in JE Campos and S Pradhan (eds), *The Many Faces of Corruption: Tracking Vulnerabilities at the Sector Level*, pp 191-220. The World Bank, Washington D.C.

²⁷ An example of the problems in this area is lagging skill accumulation and heightened inequality. Since oil and gas production is highly capital-intensive and technologically intensive in nature, it creates few jobs (perhaps one to two percent skilled) for the population, some of the skilled labor may have to seek job opportunities abroad. Mass unemployment and inequality may

failures to properly manage resource wealth are the consequence of pre-existing governance problems. This merits some consideration. On the one hand, there appears to be ample evidence to support the claim that causality runs from resource wealth to weakened governance. On the other hand, evidence suggests that the strength of this link is strongly influenced by a state's political and institutional context. If it was institutionally weak *before* the resources were developed, it will tend to become weaker. **The key point here however is not that institutional quality can be impaired by the impact of resource wealth but rather that little of this effect is attributable to natural resource endowments *per se*.**

Global norms and standards can play an important role in strengthening accountability of the extractive industries and their development impacts at a country and project level. The ways in which key stakeholders have sought to strengthen sector governance norms and standards are considered in **Chapter 4** of the *Source Book*. Among the many examples, we may note the promotion of transparency in resource revenue management by the International Monetary Fund²⁸. These multilateral and donor-led initiatives attempt to promote inclusive and equitable outcomes, taking into account distinct producer and investor country concerns and reduce the potentially substantial costs of non-transparent practices. The trend is now to explore specific requirements for contract transparency and the assessment of economic, social and environmental impacts.

CEPMLP

Centre for Energy, Petroleum and Mineral Law and Policy

2.2.3 Other Challenges Facing Policy Makers

Guarantees of Long-Term Stability What guarantees of fiscal, legal, and regulatory regime stability should a government provide to a foreign investor who is investing in that state's resource sector? What kind of limitations to its freedom to make changes at a later date can, or should, a government agree? Such guarantees will usually be sought by foreign investors at the initial stage of contract negotiations when resource-rich states are normally very eager to agree to terms that will induce an investment commitment. They tend to be offered by states with an eye to similar efforts by neighbouring states to attract capital investment. However, these stability provisions often come under strain at later stages of the investment if a significant geological or commercial success is realized. This phenomenon has been characterized differently by commentators from various disciplines: by economists as 'time inconsistency', by

undermine the country's economic progress. Karl, T. (2005). Understanding the Resource Curse. In: Tsalik, S. (ed.). *Covering Oil: A Reporter's Guide to Energy and Development*. New York: Open Society Institute, p. 24.

²⁸ IMF (2007). *Guide on Resource Revenue Transparency*. Washington, D.C.: IMF Media Services Division, Appendix I. Available at: www.imf.org/external/np/pp/2007/eng/051507g.pdf (last accessed 31 December 2013).

lawyers as ‘stability of contract’, and by political scientists as ‘the credibility of inter-temporal commitments’²⁹. These issues are discussed in detail in **Chapter 4** of the *Source Book*.

Defining a Fair Share How is a government to ensure that a fair share of economic rent³⁰ goes to the owner (the public citizens of the host state *vis-a-vis* private investors) of the resource without undermining the investor’s confidence in undertaking the risk? This is comprehensively discussed in **Chapter 7** of the *Source Book*. In practice, many factors come into play to make a decision on how economic benefits are split, including considerations such as the maturity of the EI sector in a state, the amount of real and perceived political risk, and the types of commodity involved. The growing impact of measures to promote transparency is relevant here.

Designing a Competitive Legal Framework In view of the global competition for capital among host state governments, how does a government design a legal and regulatory regime that can be competitive in relation to those found in other similarly situated resource-producing states elsewhere? There is an international dimension to the design of legal and regulatory frameworks in resource-rich states: on the one hand, they should be designed in a manner that fosters gradual and sustainable growth at home, including diversification into non-EI sectors³¹; on the other hand, they need to attract investors who by their nature will shop around on the international market for places to locate their investments. This challenge is comprehensively discussed in **Chapter 5** of the *Source Book*, while the aspects of international taxation are discussed in **Chapter 7**.

Energy Conservation and Environmental Protection How is a government to improve the efficiency of operations and reduce emissions and other impacts on the environment by means of well-defined policies and appropriate guidelines? This and other issues relevant to sustainability, such as maximizing positives from extractives development and avoiding negatives, are discussed in **Chapter 9** of the *Source Book*. Even in cases where EI sector

²⁹ See, for example, P Daniel and EM Sunley (2010) ‘Contractual Assurances of Fiscal Stability’, in *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*, 405-424 (“Fiscal stability clauses are generally justified by ... a lack of credibility on behalf of the host country to abstain from changing the fiscal rules... once the investment is sunk (the ‘time inconsistency’ problem)” at 405; PD Cameron (2010) ‘International Energy Investment Law: The Pursuit of Stability’ (examining how contract stability operates and is supported by the web of bilateral investment treaties)(Oxford University Press, Oxford); K Kaiser et al (2012) ‘Rents to Riches? The Political Economy of Natural Resource-Led Development’, The World Bank, Washington DC (the credibility of inter-temporal commitment is “the degree to which policy stability and bargains over time can be enforced and deviations from such agreements are subject to sanction”) p.11.

³⁰ “Economic rent is the difference between the price that is actually paid and the price that would have to be paid in order for the good or service to be produced. . . Anyone who is in the position to receive economic rents is fortunate indeed, because these ‘rent’ are unrelated to effort. . .” Stiglitz, J. (1996). *Principles of Micro-Economics*. New York: W.W. Norton, pp. 298-299.

³¹ World Bank (2006). *Angola Country Economic Memorandum: Oil, Broad-based Growth and Equity*, Report No. 35362-AO. Washington, D.C.: World Bank Publications, p. 2. Available at: www-wds.worldbank.org (last accessed 1 April 2012).

development has made positive economic contributions in resource-rich states – such as in Guyana and the Philippines, environmental costs have been high and have not been well-managed and mitigated. Nowadays, good practice in petroleum and mineral development argues strongly in favour of mechanisms that minimize negative environmental and social impacts. However, the way in which this is done involves a critical appraisal of the institutional structure since it is there that the problems often commence.

CEPMLP

Centre for Energy, Petroleum and Mineral Law and Policy