



THE RESOURCE CURSE: CHALLENGES AND OPPORTUNITIES

Discussion Paper

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INTRODUCTION

The discovery of a major natural resource in a nation will raise expectations of a rise in living standards and the general improvement in the wellbeing of the country's citizens. Sadly, for many countries such discoveries have the opposite impact – poorer living standards, environmental degradation, corruption and a rise in authoritarianism. Richard Auty is credited with coining the term, *the resource curse*,¹ which describes this situation. Avoiding the resource curse is an essential but difficult task for governments – they are faced with a multiplicity of both challenges and opportunities in developing the new resource.

Much has been written on the macro-issues needed to avoid the resource curse.² This discussion paper reviews the range of factors that governments and public servants need to consider in developing a sound regulatory and policy framework that will deliver a cohesive response to preparing to manage a major new natural resource and its environmental, safety, economic and social impacts. In particular, it will examine the policy, regulatory and institutional issues, and the necessary capability to support implementation and effective ongoing operation. In doing so, it does not purport to provide all of the answers, but to describe the considerations and issues that require consideration.

The paper draws on the Noetic Group's (Noetic) experience in working in the oil and gas and mining sectors in Australia, Canada, China, New Zealand, Nigeria, Timor Leste and United States of America. This includes helping to establish, and working with energy and mining departments, regulatory authorities, industry bodies, and companies. This has afforded Noetic a broad view of the management of these valuable natural resources and a deep understanding of the factors that contribute to the success (or failure) in managing them.

¹ See RM Auty, 'Sustaining Development in Mineral Economies: The Resource Curse Thesis', London, Routledge, 2002.

² See for instance K Hamilton and G Ruta, 'From Curse to Blessing Natural Resources and Institutional Quality', *Environmental Matters* 2006, July 2005- June 2006, World Bank Group, pp. 24-27..

CHALLENGES AND OPPORTUNITIES

WHAT TO DO WITH THE WEALTH?

One of the most important decisions for any government when considering the management of a new natural resource is how to handle the influx of revenue during the exploitation phase. Where this influx is poorly handled it can result in exchange rate inflation, misallocation of resources, a boom and bust cycle based on the changing commodity prices, poor outcomes for local communities and the population overall, and widespread corruption. Examples of this include the production of oil in Nigeria and tin in Bolivia. This does not always have to be the case, as Norway and Timor Leste have demonstrated.

Where the income from the natural resource is likely to be significant in terms of existing national income, the establishment of a sovereign wealth fund should be closely considered. This approach sees a portion or all of the income of export revenue directed to an independent, long term fund which is invested in a range of securities. Returns from the fund can be re-invested or returned to the budget.

The benefits of a fund include:

- Reduced corruption
- Minimising the impact of changes in commodity prices on government revenues
- Reducing intergenerational inequity
- Minimising exchange rate fluctuations
- Improving governance
- Enhancing confidence in government.

If a government decides not to use a sovereign wealth fund it needs to think carefully about how it will manage the sudden change in its financial returns, the volatility of these revenue streams, and the governance arrangements which will guide its allocation. Establishing controls for the possible negative consequences should be a high priority in the early stages of planning.

Consideration

- Careful consideration of the management of future revenues and its impact on the wider economy is essential. This includes what controls will be put in place to handle the raft of unintended consequences that will attend a major new stream of government revenue.

DEVELOPING THE LEGISLATIVE FRAMEWORK

Developing the necessary legislative frameworks requires careful consideration. Such legislation is necessary to enable action by government. However, hastily developed and enacted legislation is often difficult to change and can have unintended consequences. In preparing the legislation the standard requirements of wide consultation with stakeholders (both inside and outside government), managing linkages with other pieces of legislation (including reducing gaps and minimising overlaps), balancing simplicity against comprehensiveness and following mandated processes are essential.

With regards to the development of legislation to enable the development of a new natural resource, a range of additional considerations apply. These include how compliance will be enforced, what approaches and models will be used, and how it will be implemented. Consequently, in the development of the legislation, a number of factors will require consideration and agreement prior to the finalisation of the draft legislation.

The economic regulatory framework will need to balance the interests of the national economy through government (as custodian of the resources), the local community (jobs and business opportunities) and the developer of the resource. This balancing act needs to provide economic and commercial stability while ensuring that the benefits of development are available over the life of a project, in many cases over a period of many decades. Benefits are not limited to revenue receipts and can include economic inclusion, employment, and sharing information useful to future exploration activities.

From a safety, health and environment perspective one of the most important considerations in the development of the legislation is the model to be used.

Government has three options:

- A **prescriptive approach** where safety, health and environmental requirements are detailed by the regulator and must be adhered to. This type of regime is used in the USA.
- **Goal setting or an outcome-based approach** which is based on the company describing how it will manage its operations safely and protect the environment (invariably by choosing recognised industry standards). Also known as a 'Safety Case' regime, this approach is used by Norway. It is important to note that goal setting regulation is not self-regulation.
- A **hybrid model** that is framed with a goal setting approach and combines elements of prescription, with some standards being mandated for safety and environmentally critical controls. This approach is used by Australia, Timor Leste and the UK.

Noetic's experience is that goal setting or outcome-based legislation is particularly effective for health, safety and environmental outcomes.³ This is because it:

- Leads to an improved understanding of the opportunities, hazards and risks
- Gives an enhanced knowledge of the technical and managerial controls needed to manage the risks
- Encourages innovation
- Allows for better oversight by the regulator.

Regardless of the approach taken, oversight of the implementation of the legislation by companies requires a competent and capable regulator. The development of the regulating agency is discussed in a subsequent section.

Consideration

- While important to develop the legislative framework as quickly as possible, it should not be rushed, as it will set the fundamentals of the regime and these can be difficult to change in the future
- The use of goal setting or outcome-based regulation is the preferred approach
- The design of economic regulation should be considered as separate to, but an integral part of, the broader taxation and revenue framework.
- Oversight of the legislation requires a competent and capable regulator

GETTING THE PEOPLE'S SHARE

A key consideration is determining the best way for government to secure a suitable return from the resource. It is usual, but not universal, that the mineral (including hydrocarbon) rights of a nation belong to the government. Companies are given licenses to explore for and then, if found suitable, to exploit the resource (a

³ For a detailed explanation of goal setting regulation, its origins and features see P Wilkinson, 'Safety cases: success or failure?', Presentation to the *National Research Centre for Occupational Health and Safety*, Australian National University, 15 May 2002.

production license). How governments tax companies in order to gain a return on the exploitation of the natural resource is a complex area and one that still challenges governments with long experience in dealing with mineral extraction.

The opportunity with mineral taxation is to encourage more investment in exploration and production while increasing the collection of revenues. The challenge, however, is to balance a regime that provides incentives to invest against one that provides the best return but is a disincentive to investment. In addition, governments must make sure that there are no unintended consequences and that the arrangements are simple to administer. Options for consideration include resource rent taxes (which can be described as self-adjusting, in that when profits are high they generate a lot of revenue and vice versa), royalty schemes (which are simple and provide a quicker return), and Production Sharing Agreements or Contracts (PSA/C –are more complex to establish and administer, and seek to share the rewards of production more directly).

In determining the method for generating revenue from the resource, a variety of factors require consideration. Governments with experience in managing other resources can apply or adapt the current regime to the new resource with confidence in its implementation and administration. However, governments with limited experience in taxing resources must be mindful of the complexity of the regime, understand the consequences to revenues of changes to prices and demand for the commodity, and understand the government's capacity to effectively administer and audit the scheme. Even countries with a long history of taxing resources can have difficulties when seeking to amend their regimes. The Australian experience with the introduction of a Minerals Resource Rent Tax in 2012 and its subsequent withdrawal demonstrates the dangers and complexity of poorly conceived schemes. This scheme met with fierce resistance from companies, state governments, and most stakeholders.

Consideration

- Determining how government will get revenue from the companies developing the resource requires careful consideration. Balancing a good return versus encouraging ongoing development can be a fine balance.
- Ensuring that the regime put in place can be successfully administered will require a dispassionate assessment of the capability of the bureaucracy.

MANAGING THE RESOURCE

A system for granting exploration permits will already be in place if a discovery has been made, however, there is usually a need to enhance this system to attract additional exploration and development. The characteristics of an effective permit (also known as licensing or titles) management system include:

- Transparency of the bidding process for allocation of permits
- Readily-understood selection criteria
- Consistent application of selection criteria in decision making
- Access to information on geological and exploration data (both government provided and company developed as part of exploration)
- Clear rules for changes to title conditions and relinquishment
- Clear rules governing activities throughout the value chain from precompetitive data collection, through to exploration, discovery, development, production and decommissioning.
- Simple fee structures (cost recovery based is a good model)

One task of the agency responsible for permit management is to ensure that the resource is exploited in accordance with agreed plans and in the best interests of the country. This agency needs the capability to assess development plans for oil and gas fields or mines to ensure that they are going to be developed effectively and make best use of the whole resource, field and basin (broader resource management). This may

include assessment of environmental aspects (although this could be done later in the process). The ongoing monitoring of the exploitation of the resource is required. Changes in market or technical conditions may have companies seeking to vary plans. These should be carefully considered and not simply acquiesced to.

The variety of tasks to be undertaken, and the importance of ensuring that best use is made of the resource, means the permit agency requires highly skilled personnel. It includes the need for those with strong technical backgrounds in both production and exploration. As will be noted in the following sections, such personnel are generally in demand across the resources sector. Consequently, attracting and retaining such personnel requires thorough workforce planning and the use of innovative remuneration structures. Putting such structures in place is usually time consuming and needs wide consultation across government before they can be implemented. This should be an early priority in the planning process.

For governments new to managing resources (either in general or for a new class of resource) getting the needed expertise can be challenging. While effective workforce planning can ensure the future availability of skilled personnel, it is unlikely to provide an immediate solution. Consequently, consideration should be given in the short term to the use of either expatriate personnel or the outsourcing of technical packages of work.

Considerations

- Enhancing the permit management system is an important and ongoing task
- The permit management agency requires a skilled workforce to effectively manage the resource from exploration to decommissioning
- The outsourcing of technical packages of work may be required in the short term

Protecting the environment and workers

In both the exploration and production phases, a key task for government is to ensure the protection of the environment and the safety and health of workers. This essential and important task should be undertaken by an independent regulatory agency. It is the author's opinion that it is crucial that this regulator is separate and independent from the agency responsible for the economic regulation and titles management guiding the exploitation of the resource. This is particularly needed where Production Sharing Agreements/Contracts are in place. What happens in practice is that where this is not the case, safety and the environment suffer as the focus on exploiting the resource and generating revenue takes precedence. This is short sighted. The costs of major incidents in lives lost or blighted, environmental damage, losses to other industries (such as fishing or agriculture) and lost production can be staggering. The Macondo Blowout in the Gulf of Mexico⁴ has cost the responsible oil company USD62billion in addition to the eleven lives lost and ongoing environmental degradation.⁵

A consideration in the establishment of the regulator is the funding model. It can be funded in a variety of ways, including:

- as part of the government's usual budget process
- from the revenue generated from the resource
- through a user pays model

Each has model has advantages and disadvantages. Noetic's experience is that a user pays model is the most efficient and supported by the majority of stakeholders provided that the governance arrangements ensure a fee for application rather than a fee for approval. One consequence of the user pays model is that industry can rightfully expect an efficient, transparent, and effective regulator. This requires a well-designed and operated

⁴Also known as the Deepwater Horizon incident.

⁵'BP Puts Tab for Gulf Disaster at \$62 Billion', *Wall Street Journal*, 13 October 2016.

organisation. In planning for the operation of the regulator, it must be able to perform the following tasks effectively:

- approve or accept safety, health and environmental plans
- audit these plans
- investigate incidents

These are not trivial tasks and are essential to the effective oversight of the industry. Consequently, detailed planning for the establishment, implementation and maintaining the ongoing health of the regulator is a key task for government.

One of the most important capability elements in an effective regulator is people. Finding the right personnel with the needed cross-section of skills and experience (from both within and outside the industry) is a vital task. As noted previously, such personnel are in demand and a workforce plan is essential. Government must be prepared to take both a short and long term approach to the development of people within the regulator. As with the permit agency, there may be a need in the short term to outsource highly technical tasks to independent third parties.

During the establishment of the regulator there are a number of important decisions to be made. These include its approach to regulation and the strategy that it will adopt in working with industry. With regard to its approach, there is a continuum from strict compliance (acting as a ‘policeman’) to *supporting industry* in applying the best safety and environmental practices (acting as a ‘coach’). Noetic’s experience is that the most effective regulators work across the continuum as required, but on balance engage more in the coaching role than the policing role. In doing so, industry understands that the regulator will not hesitate to move to a more policing role if needed. A coherent and implementable regulatory strategy helps ensure that the regulator is able to apply its limited resources most effectively. The strategy is a useful tool in working with industry and also dealing with the variety of stakeholders with an interest in the safe operation of resource facilities.

Communicating with stakeholders is a key task. The failure of government and the regulator to communicate with the community and other stakeholders can quickly result in a lack of support for new projects.⁶ In the Australian states of New South Wales and Victoria, the government’s failure to communicate effectively has resulted in them having to respond to community concerns by placing a moratorium on the drilling for hydrocarbons. This could lead to gas shortages in the foreseeable future.

Considerations

- The environment, health and safety regulator **must** be independent
- A user-pays funding model requires an effective and respected regulator
- Development of a regulatory approach and strategy should be done early
- Ongoing communication with stakeholders is required by both government and the regulator.

HARNESSING ADDITIONAL BENEFITS

The discovery of a major new resource provides opportunities for new employment and service industries. Harnessing these opportunities can be problematic, particularly where national education systems are developing and the existing resources sector is small. These factors are challenges but long term planning can help overcome these limitations.

⁶ For a comprehensive discussion on the importance of communication and social license to operate see P Wilkinson and D King, ‘What is required to obtain and operate a social license?’ *Unconventional Oil and Gas*, Autumn 2016, vol. 4, pp. 50-55.

In looking to provide for new employment opportunities, factors requiring consideration include the technical nature of many of the positions (particularly in the oil and gas industry) and the global nature of the resources sector. A national workforce plan to develop the required skills should take a long term view and can form part of the negotiations with operating companies. While the short term employment gains may be modest, the opportunity to develop a skilled and globally competitive workforce should not be overlooked.

Likewise, the opportunities for local businesses may in the short term be modest. However, a rational strategy that looks to capitalise on existing strengths and introduce new industries that are sustainable is an important task for government. Avoiding the temptation to vertically integrate the new resource is crucial. Global supply chains for the resources sector are well established and highly competitive. The business case for doing so must be robust and well thought through.

Communicating what is possible to the community and local business is an essential and ongoing task for government and the company which hopes to undertake activity in the area. The discovery of a major natural resource can quickly raise expectations. Ensuring that these expectations are reasonable and will be met is a challenge, particularly where some stakeholders may seek to promote unrealistic expectations. The early development of workforce and industry strategies is a key step in helping set and manage expectations.

Timor Leste has developed a bold plan to establish local downstream industries as part of the future development of the Sunrise oil and gas field. The Betano refinery and petrochemical complex will provide employment and is projected to refine up to 30,000 barrels per day (bpd). Significant planning effort has gone into this project.⁷ However, successful implementation of the project is likely to be challenging. The infrastructure plans do not appear to be supported by a workforce plan and these facilities will require skilled operators who currently only exist in small numbers in the country. In addition, the proposed refinery has a modest production capacity and its ability to compete with other Asian refineries (a number of which have capacities of over 500,000 bpd) will require careful consideration. Careful macro and micro-economic analysis is required to identify the risks, challenges and opportunities associated with any development.

Considerations

- The development of a national workforce plan to build a globally competitive resources sector workforce
- The need for a strategy to sustainably grow local businesses
- Ongoing communication to manage community and local business expectations of the benefits is essential.

⁷ Timor Gap website, available at:

<https://www.timorgap.com/databases/website.nsf/vwAll/Betano%20Refinery%20and%20Petrochemical>

CONCLUSION

The challenges and opportunities presented by a major natural resources discovery may seem daunting to a government. There are a wide range of considerations, competing demands, as well as limited funds and time. This paper sets out several salient issues for consideration to successfully address the challenges and realise the opportunities. Fortunately, governments are able to draw on a range of sources for advice and assistance with their considerations and planning. Other governments, multilateral forums, academia and consultancies can provide specialist assistance.

Noetic's experience is that comprehensive planning and ongoing open communication with all stakeholders are the key requirements for successfully managing the substantial task of preparation. While the plan will undoubtedly require modification, the failure to consider all of the planning factors means that there is a high likelihood of unintended consequences.

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