



> **World Bank Group:** **Can Resource-Financed Infrastructure Fix the Natural Resource Curse?**

By Håvard Halland, John Beardsworth, Bryan Land, and James Schmidt

How can resource-rich countries ensure that a sufficiently large share of oil, gas, and mining revenues are used for productive investment rather than excessive or wasteful consumption? “Resource-financed infrastructure” (RFI) contracting is a new contract form that has evolved from experiences in several developing countries. RFI connects government revenues from resource extraction directly to infrastructure investment, thereby countervailing barriers to international capital markets, and bypassing capacity constraints that governments face

when required to implement large infrastructure projects. A recent World Bank study, comprising an in-depth look at RFI by global project finance specialists Hunton & Williams LLP, and comments by some of the most internationally respected development economists and policy makers, debates the merits, challenges, and risks of the RFI approach.

To maintain wealth and build strong foundations for economic growth, countries need to offset the depletion of their natural resources by investment in produced capital – primarily infrastructure

and human capital (Hartwick’s rule). However, in countries with weak governance and institutions, the use of government oil, gas, and mining revenues is often heavily tilted towards consumption rather than investment. Following oil or mineral discoveries, as the expectation of increased wealth spreads, pressures to spend typically become hard for politicians to resist: Public sector salaries go through the roof, wasteful spending increases, corruption may flourish, hidden foreign bank accounts may be established, and the number of unproductive “white elephant” projects grows. This type of spending often occurs



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despite a desperate need for investment in basic infrastructure including roads, schools, primary health clinics, and the like. In Africa, for instance, estimates indicate that an annual investment of \$93 billion is required to address the continent’s basic infrastructure needs – more than double the current level of investment. The lack of productive investment of resource revenues is a critical component of the so-called resource curse: The observation that countries rich in natural resources frequently have slow long-term growth.

THE RELEVANCE OF RFI

How is RFI relevant in this context? In recent decades, developing countries have started using access to their natural resources as collateral to realize other investments, countervailing the barriers they face when accessing conventional bank lending and capital markets. One result has been the type of oil-backed lending practices pioneered by Standard Chartered Bank, BNP Paribas, Commerzbank, and others in Angola in the 1990s. More recently there have been several sovereign bond issuances explicitly or implicitly backed by future resource revenues. Third, there have been packaged transactions, here referred to as early RFI deals, whereby access to oil or minerals has been exchanged for current infrastructure construction.

Like oil-backed lending, RFI deals were pioneered in Angola. China ExIm Bank started offering this type of contract in 2004, and RFI type deals became a main vehicle for financing Angola’s post-war reconstruction. Early versions of the RFI mode of contracting were later used in several other African countries – predominantly by Chinese banks, including China Development Bank, but recently also by Korea Exim Bank for the Musoshi mine project in the Democratic Republic of Congo (DRC). According to Korea ExIm Bank (2011), “the [Korean version of the RFI] model was strategically developed to increase Korea’s competitiveness against countries which have already advanced into the promising market of Africa. This agreement is the first application of the model.”

Western mining companies commonly offer infrastructure as part of the compensation package, although this is usually a small part of the contract value and tends to address local infrastructure needs in the vicinity of the mine. In some cases, the value of the resources committed has been used as the basis for valuing the infrastructure package offered. In other cases, the basis for the valuation of the resource and infrastructure exchange, and the role of additional forms of compensation, is less clear. Back-of-the-envelope estimates based on publicly available information indicate the value of signed early-RFI type of contracts in Africa to be at least \$30 billion, although it is unclear how many of these contracts have been fully implemented.

The RFI approach seeks to formalize the relationship between (a) the government’s future revenue stream from the resource component, and (b) a non-recourse loan, from the resource



developer's lender or another financial institution, to the government for the purchase of infrastructure. The loan is paid down with the committed future government revenues from the oil or mineral extraction. Loan disbursements for the infrastructure component are paid directly to the construction company to cover construction costs, and could also be used to pay operating expenses of the infrastructure (e.g., the operating costs of a health clinic, or maintenance of a road) for some period. Instead of receiving future taxes and royalties from the oil or mining company, the government receives, in exchange for a commitment of those revenues, completed infrastructure, such as power plants, railways, roads, information and communication technology (ICT) projects, schools and hospitals, or water works.

The RFI contracting process can, as described in the World Bank study, be understood as a combination of the traditional resource exploration and production licensing process, which should be according to international best practice, and a combination of one or more traditional infrastructure acquisition processes – from direct government purchasing through to public-private partnership relationships. As such, the beginning of an RFI transaction would be the undertaking of exploration activities by resource developers, and a government study to identify the infrastructure investments that would most improve economic growth or social welfare in the short term. Just as in any other contracting processes for resource development and infrastructure acquisition, adequate due diligence by all parties is required, including

by the host government, for the identification of quality contractors, definition of technical specifications to assure contracting of appropriate infrastructure, and construction monitoring to assure quality delivery. The key to RFI, as discussed in the World Bank study, is creating the non-recourse link, by a special loan mechanism, between the committed future resource revenues and the current infrastructure financing.

POSSIBLY THE BEST OPTION

One reason that early RFI deals have been seen as attractive by governments may be that the RFI type of transaction is perceived as an opportunity to provide fast returns to citizens while decision makers are still in office. Since mines and oil fields take a long time to develop, the infrastructure could be in use long before the extractive project is generating revenue or turning a profit.

In his contribution to the World Bank study, Paul Collier argues that, although by conventional principles RFI is undesirable because it reduces future fiscal flexibility, it might be the best option available to lock in infrastructure investment in contexts with weak public administration capacity and procurement systems. In that sense, RFI represents a commitment mechanism, enabling ministers to ensure that future decision makers devote a sensible proportion of resource revenues to the accumulation of assets. By the same token, Alan Gelb argues that RFI may reduce the risk of revenues from extractives either failing to be included in the national budget or, if included, being wasted or stolen. Similarly, as Justin Lin

and Yan Wang point out in their contribution to the study, RFI may also reduce the risk of capital flight. RFI may furthermore limit the ability of a government to raid resource revenues accumulated in a sovereign wealth fund by a more responsible prior government. Conversely, oil-backed lending or resource-backed sovereign bond issuance do not offer this commitment mechanism.

RISKS AND CHALLENGES

Despite its potential benefits, RFI also brings significant risks and challenges. Early deals approximating an RFI structure have generally been concluded on a non-competitive basis, with little transparency or attention to structuring the transaction as a true financing model. This has brought up questions related to the valuation of the deals – how much infrastructure now for a certain amount of oil or minerals in the future? In a mature RFI model, as addressed in the World Bank study, this question is dealt with explicitly, since the committed resource revenues are used to pay off a loan, and additional taxes and royalties are then paid directly to the government once the loan has been repaid. There have also been concerns with regard to the quality of the completed infrastructure, as well as regarding capacity for operation and maintenance – issues that in a mature RFI deal should be addressed through careful contracting, due diligence exercises, independent third-party construction supervision, and potentially by creating a public-private partnership for the infrastructure construction and operation components.

Lin, Wang and Louis Wells point out that not only



governments but also the private sector partners to RFI deals take on a significant amount of risk since, once the infrastructure has been completed, there may be an incentive for the government (or a future government) to renege on the contract. To reduce investor risk, an element of official or semi-official concessional finance has been a standard component of the early RFI deals. Collier argues that if bilateral donors were to team up with their national resource and construction companies to bring more RFI deals to the market, the value of the deals could be determined through competition. Gelb suggests that concessional financing arrangements could take the form of interest rate buy-down or partial risk guarantees against the host-country government renegeing on the agreement. Clare Short is joined by others in asserting that contract transparency is fundamental to reducing the risks of RFI contracting, as with other types of oil and mineral contracts. The World Bank study suggests issues for governments, lenders, and other stakeholders to consider and address when contemplating an RFI structure for a transaction.

A FIX FOR THE RESOURCE CURSE?

So, can RFI contracting contribute to fixing the resource curse? Contributors to the World Bank study argue that “it depends.” As Wells points out, RFI deals should be evaluated like any other business arrangement, and carefully compared to alternative ways of obtaining returns from natural resources or financing infrastructure. Understood in that way, and with appropriate safeguards and procedures for implementation, RFI contracting may have the potential to be an important tool for countries struggling to escape that old curse. ❄

ABOUT THE AUTHORS

Håvard Halland is a natural resource economist at the World Bank, where he leads research and policy agendas in the fields of resource-backed infrastructure finance, sovereign wealth fund policy, extractives revenue management, and public financial management for the extractives sector. Prior to joining the World Bank, he was a delegate and program manager for the International Committee of the Red Cross (ICRC) in the Democratic Republic of the Congo and Colombia. He holds a PhD in economics from the University of Cambridge.

John J Beardsworth, Jr., is head of the business practice group of the international law firm Hunton & Williams LLP and a member of the firm’s Executive Committee. With more than 30 years of experience, he focuses his practice on resource development, energy and infrastructure transactions, and project finance. Mr Beardsworth has extensive experience in restructuring and privatizing infrastructure enterprises, and in the development, financing, and construction of resource- and infrastructure-related assets. He is recognized for his long-standing practice in Africa. Mr Beardsworth earned a JD with honours from the George Washington University Law School in 1979 and a BA from the University of Pennsylvania, magna cum laude, in 1975.

Bryan C Land is a lead mining specialist at the World Bank and has been developing the bank’s research into the opportunities and challenges faced by resource-rich African countries. Prior to joining the World Bank, Mr Land led

the Commonwealth Secretariat’s program on natural resource management. Previously he was at extractive industry consulting houses IHS Energy and CRU International and also spent three years in Papua New Guinea in the Department of Minerals and Energy. Mr Land earned a bachelor’s degree in economics from the London School of Economics and master’s degrees in international affairs and natural resources law from Columbia University and Dundee University, respectively.

James A Schmidt is counsel with the international law firm of Hunton & Williams LLP. With more than 25 years of experience, Mr Schmidt focuses on electric sector restructuring and market design, creating legislative and regulatory frameworks, developing independent regulatory agencies, and negotiating infrastructure projects for private developers, governments and their utilities, and public-private partnerships. He served as lead attorney for energy and regulatory reform matters in the legal department of the World Bank between 1996 and 1998. He was also a law clerk for the US Court of Appeals for the Fourth Circuit between 1986 and 1989. Mr Schmidt earned a JD from the University of Wisconsin Law School in 1986 and a BA from Lawrence University in 1983.

