

White Paper

Leveraging the Land: Creating Sustainable Internally Generated Revenue

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Executive Summary

Its money left on the table. One of a country's most effective sources of revenue—the land within its borders—is often overlooked. While cost of the missed opportunity can be high, it is avoidable. By incorporating land into their revenue portfolio, governments can create new streams of predictable, sustainable income.

Governments must generate revenue in order to fund services, infrastructure and security for its citizens. Funds can be generated within the country or through interaction with other nations or jurisdictions.

Internally-generated revenue (IGR) is income created by activities within the country. External income includes import duties and fees imposed on international transactions.

In many regions, governments have relied primarily — or in some cases exclusively—on a single source for their revenue. Business activities related to natural resources are often the dominant component in this singular dimension revenue stream. Natural resource industries such as mining and petroleum production can provide significant income through leases and production fees as well as income taxes on workers' wages.

But these sources are subject to cycles of economic uncertainty. The revenue they produce can fluctuate based on commodity prices and uncontrollable factors such as weather, political conditions, natural disasters and global economic environments. As a result, overdependence on natural resources introduces significant risk to a government's revenue stream.

One of the best approaches to mitigating the risk of excessive or unexpected changes in revenue is to establish a diversified stream of internally-generated revenue tied to repeatable and sustainable activities. Common sources of IGR include government fees, port entry charges and taxes on sales, income and property. But many countries have yet to generate IGR from land and land rights within their borders.

In this paper, we will examine the benefits and challenges of diversified IGR that includes land in the financial portfolio. We will also consider strategies to implement land-based IGR. In doing so, we must take into account that land is the source of livelihood, cultural identity and continuity for individuals and the country. These components play a role in defining how the assets of land and land rights are defined, identified, defended and leveraged.

The Need for Diversified IGR

To illustrate the impact of non-diversified IGR, consider the role of petroleum in Nigeria, where the national economy and government revenues rely heavily on oil. The country is Africa's largest economy and second- largest oil exporter. According to the Observatory of Economic Complexity at the Massachusetts Institute of Technology (MIT OEC), raw and refined petroleum products made up more than 93 percent of the nation's total exports in 2015. Data from the Nigeria Federal Inland Revenue Service (FIRS) showed that in 2011, 67 percent of the national government's revenue came from the petroleum businesses. By 2015, oil tax revenue had dropped to 34 percent of the total. In the four-year period, overall tax revenues declined by nearly 20 percent.

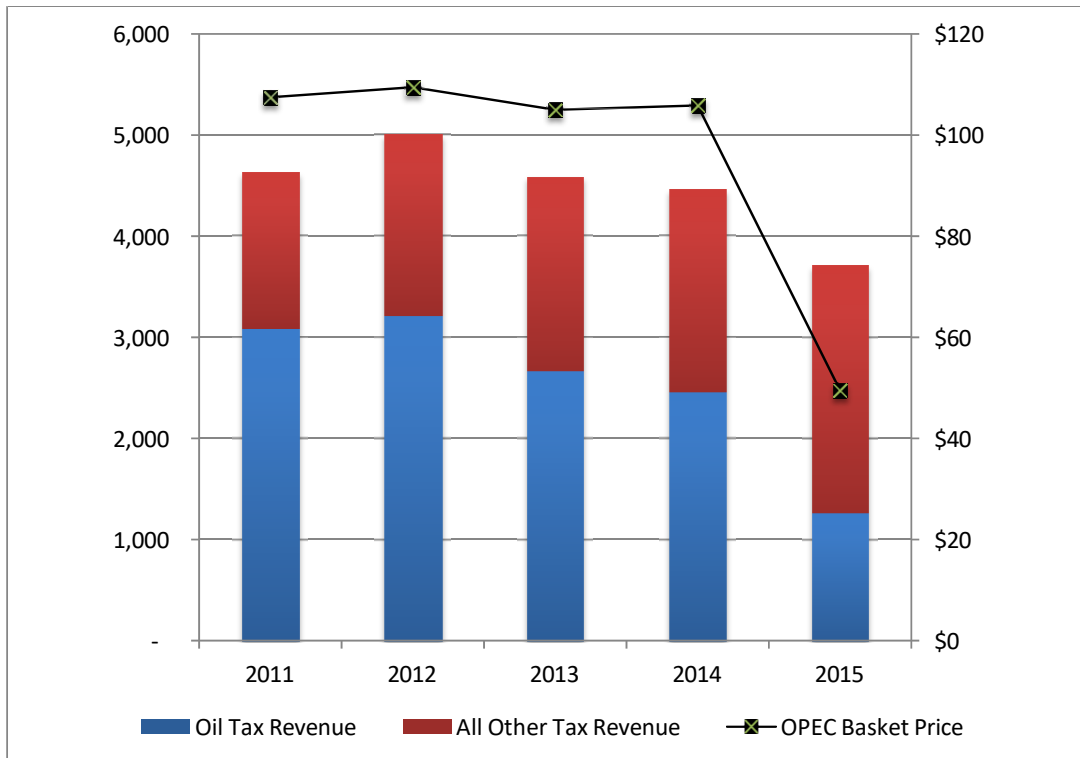


Figure 1 Oil Prices and Nigeria Tax Revenues, 2011 to 2015. Sources: OPEC, Nigeria FIRS

Plunging oil prices have affected both private development and government revenues. Between September 2014 and July 2015, Nigeria’s oil and gas revenues dropped by 67 percent, according to the Nigerian National Petroleum Corporation (NNPC). Plans to develop additional capacity for production and refining have stalled and available funds for government programs have dropped precipitously. The nation, which relied on and benefitted heavily from high oil prices, is now struggling to make ends meet.

Nigeria is not alone. Similar boom and bust cycles may occur in mining, agriculture and other export industries, where production and prices are at the mercy of external forces. For developing nations, the resulting variability in revenue can have devastating effects on government activities, including strong negative impacts on the ability to provide basic services and facilities.

The Role of Land Information in IGR

IGR tied to land often focuses on extractive industries or other natural resource development. Revenue can include fees and taxes on production and exports as well as land leases or permits for production sites, pipelines and other facilities. But land-based IGR is more than just exploitation of natural resources, which in many cases consist of one-time extractive activities that occur over a few years. In full, it is the process of leveraging the large, permanent asset of land to create a stable basis from which a jurisdiction can generate a sustainable, predictable revenue stream.

Land and land rights are an overarching asset that affects national economies. In the International Property Rights Index 2009 Report written for the Property Rights Alliance, author Ann Chanidima Dedigama illustrated the positive relationship between land rights and a country’s

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economic strength. “With the recognition of property rights and due process which affords it marketability, an individual will become a participant in the production cycle which creates profit and/or loss, which in return contributes to the economic growth of a nation and finally raises the standard of living. This kind of economic empowerment spreads beyond a nation to link countries at a common ground, i.e. the international market.”

Land administration also supports improved financial management by governments. Writing in a 2010 brief for the Urban Institute Center on International Development and Governance, Olga Kaganova examined properties held by the city of Warsaw. The land value makes up 80 percent of all assets in the city’s consolidated balance sheet, and this is not a unique

share: on average, property assets constitute 40 to 95 percent of everything governments own. Moreover, in many countries, the value of urban land and property under local governments’ control remarkably exceeds their annual budgets. Not surprisingly, better asset management can produce substantial financial gains ... for both central and local governments.” Kaganova noted that municipalities can benefit through a combination of increased revenues and reduced operating and capital costs.

Land rights are typically the biggest single asset of individuals and also represent a major portion of national assets. IGR derived from land rights, land use and administration is much less susceptible to variations in the local, national and international economic conditions. Two common forms of land-based revenue are property taxes and transaction fees. Although sometimes controversial, property taxes are among the most sustainable and

predictable sources of revenue. Transaction fees occur whenever property rights are modified or transferred, or when an encumbrance is placed onto a property. As a country attracts larger developments, revenue from transaction fees can be significant. Other sources for land-based IGR include leasing and permits for construction and natural resource development.

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The Benefits of Land-based IGR

By incorporating land and land rights into IGR, a national or regional jurisdiction can harvest a number of tangible benefits. These include:

Diversified Sources of Revenue

Land-based IGR can be developed from multiple sources and value chains. A diversified approach can mitigate uncertainty in long-term revenue by delivering income from multiple, independent resources.

Stable, Predictable Revenue

When compared to commodities and natural resources, land and land rights are less susceptible to changes in economic conditions. Predictable revenue streams enable governments to plan and implement programs and projects over longer terms.

Transparency and Public Access to Land Data

By holding land information in publicly accessible records, governments can streamline many processes related to land rights, development and financial leverage. The open, simplified processes help make investment easier and more attractive for internal and foreign business.

Security

Today, most governments realize some IGR from land administration and taxation. But many areas still rely heavily on other, non-real property sources for revenue.

Public records exist in perpetuity and are protected against hacking, theft or physical damage to computer infrastructure. Land information systems built around reliable hardware and software ensure that the data remain accurate and up to date.

Scalability and Sustainability

Governments can implement land-based IGR in planned stages. Scalable systems can adapt to handle increased functionality or expanded geographic areas. Once in operation, a modern land information system can generate revenue to cover its ongoing costs for operations and maintenance.

Modern land administration systems leverage information technology to enable efficient, effective management of assets and information. For example, Jamaica undertook an initiative to modernize land administration and increase efficiency and accountability for land administration services. The country's National Land Agency (NLA) reported revenue generation of an average of nearly US\$9 million per year since it initiated its reforms, thereby producing relatively short payback periods for their technology investments. Customer service in Jamaica improved as well. NLA reports that turnaround times rose from 56 percent of service requests processed in 25 days to 100 percent processed in 20 days.

Additionally, digital land administration incorporates mechanisms for transparency and public access. A 2013 report on innovation and land administration by the World Bank noted the value of information technology in developing regions. The authors stated "With the advent of personal computers, broadband internet and mobile phones, Information and Communication Technology (ICT) has become an important driver in fostering innovation leading to enhanced productivity and economic growth. Affordability of new technologies together with game-changing ideas can lead to more inclusive development whereby services can also reach out to those sections of the population that have so far been marginalized from the global knowledge economy." (Mika-Petteri Törhönen & The World Bank, 2013).

The Turkish Experience

A 2006 study funded by the U.S. Trade and Development Agency (USTDA) examined the feasibility of implementing land-based IGR in the form of municipal property taxes. The subject city, Municipality of Küçükçekmece (KCM) near Istanbul, was experiencing a low collection rate on property taxes.

The study found that KCM was collecting roughly 10 percent of the potential property tax revenue. The low collection rate revealed a need for a property tax assessment and collection solution based on fair and equitable assessment and valuation of properties. Financial review showed that increasing tax collection by only 10 percent per year would provide strong positive effects.

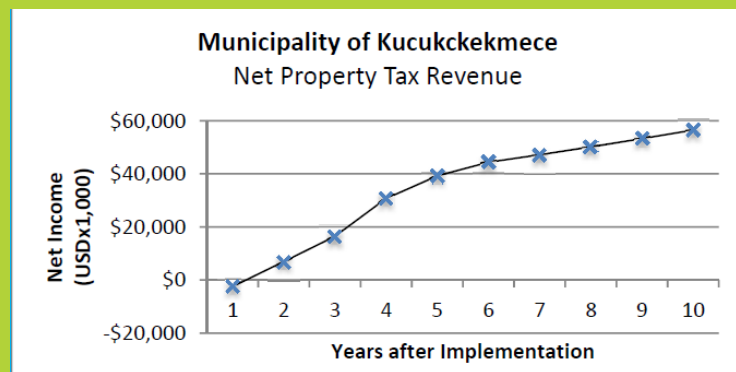


Figure 2. - Municipality of Küçükçekmece Revenue Projections. Source: USTDA, Stewart Information International.

The study reviewed existing systems for land information management, including the legal and financial impacts of a modernized approach. In order to realize the increased revenue, the study recommended a phased, two-pronged approach to managing land information and real estate taxes.

The financial analyses indicated a significant revenue opportunity for KCM. Using cash flow models and detailed sensitivity analysis, the city could realize an internal rate of return of 395 percent over a ten-year period. The study developed cost estimates on a per parcel basis and proposed a strategy for financing the implementation.

Strategies to Develop Land-based IGR

In order to develop and sustain land-based IGR, a land administration solution needs three primary components. First, there must exist clear titles and documentation of the status of land assets and rights. This typically is a registry of recorded documents connecting owners to specific parcels and rights, including chain of title over the tenure of the parcel. The second component is an accurate characterization of land assets, including physical descriptions and locations of the land parcels within a jurisdiction. Third, a systemized approach for valuation is used to facilitate fair, data-based determination of the worth of land and land rights.

While the effort to install and commission these components is not insignificant, developing a comprehensive strategy enables the implementation to be completed efficiently. The approach to successfully incorporate land into a region's IGR portfolio includes several key factors:

1. **Develop a complete inventory of the assets.** An asset cannot be leveraged if it is not counted and included in the list of known holdings. The asset inventory includes a registry of rights (ownership, leases, easements, etc.) associated to individual parcels. Existing records can be digitized or transferred from other systems to a central registry.

The registry rights are directly connected to cadastral data, which develops the physical descriptions and locations of the parcels. Existing GIS assets can be leveraged to provide parcel data. Close ties between the registry and cadastral data can foster an environment for streamlined transactions and strong customer service.

2. **Identify and prioritize needs, geographic areas and market segments.** It is difficult to address all areas and needs in a single effort. Therefore, a phased approach is critical to success. Consideration should be given to costs, volume and types of information, physical facilities and staffing.

By leveraging the scalable capabilities of modern land systems, a government can manage the time and costs of adding land information to IGR.

3. **Compute an expected return on investment (ROI).** The ROI analysis is required regardless of the source of financing and ROI expectations should be established at the onset. The analysis assists in monitoring and evaluation of the project, enabling project managers to make small corrections early in the project and avoid large corrective actions later on.

4. **Implement an integrated program of education and support.** An educated consumer is critical to gain maximum participation in the market processes. The public must understand the system's benefits and how they can take advantage of it.

The efforts in education can introduce high expectations on service delivery. Customers will expect shorter wait times, faster turnaround and one-stop service for documents, permits and fees. By anticipating requirements for customer service and education at the onset of the project, a jurisdiction can improve ongoing participation by all sectors.

5. **Political will is critical for success.** There must be a strong political will from within the government in order to ensure that there is no interruption or interference in the assessment and collections effort. For example, the government cannot turn property taxes on or off at will simply to garner political support.

If the government projects a consistent, equitable and predictable attitude towards tax assessment and collection, then the taxpayers will take the matter as a serious and enforced mandate.

Conversely, if the tax is perceived merely as a momentary, fluctuating entity, then the impetus to participate in the tax system will be diluted and easily avoided by the tax base.

Sustainable Outcomes

Using land to create internally-generated revenue is much more than just exploitation of natural resources. The use of modern approaches to land administration can lead to several positive outcomes.

Land-based IGR leverages a major asset—land—to create a stable basis from which a jurisdiction can generate sustainable revenue. While revenue from natural resources and extractive industries should not be disregarded, land-based IGR provides diversified revenue that is largely insulated from the relatively unpredictable fluctuations of market-dependent sources. As a result, planning and implementation of capital projects and public services can take place with a higher level of confidence in the level of available funding.

A second outcome is increased attractiveness to foreign investors. By providing modern land administration and related services, a nation can streamline processes for review, approval and permitting of externally- funded projects and investments. It becomes faster and easier for foreigners to invest in activities in-country; their investments create new jobs and revenue opportunities.

Effective land administration also helps increase public confidence in the various agencies and systems related to land rights. By providing accurate information and timely service, agencies can instill and reinforce the view that the governments are active and effective in managing and protecting land rights. In addition, modern solutions contribute to the sustainable management and development of land resources. This moves beyond natural resources to include land use for agriculture, industrial and commercial activities, environmental protection and public facilities.

Finally, land information systems provide benefits beyond the agencies traditionally involved in land administration. For example, an African city modernized its systems with the goal of improving activities in land valuation and taxation. Information produced by the system is also used for planning bus routes and to develop access to public utilities in low-income areas of the city.

Regardless of the jurisdiction's intended outcomes, comprehensive analysis and planning are essential to successfully implementing modern land information solutions. It is critical to coordinate between land policy, technology solutions and public needs for secure land rights. An effective land administration program provides flexibility to optimize IGR and ROI by tailoring the solution to specific regional needs and financial capabilities.

Spatial Dimension's Approach to Land Administration Solutions

Spatial Dimension utilizes a consultative approach to the design and implementation of solutions for land administration and government services. The company works to develop deep understanding of existing conditions, needs and fiscal requirements before applying that knowledge to create localized systems.

Tri Spatial Dimension mble solutions leverage Internet-based methods to provide functionality, control and flexibility. Through the effective use of data management, information and communication technologies, Spatial Dimension creates integrated systems that are configured to specific jurisdiction needs and practices.

Spatial Dimension solutions are structured to match functional requirements of modern land administration while enabling a phased approach to implementation and coverage. A configurable, modular approach provides functionality required for efficient operations:

- **Automated Land Registry.** The registry records and manages large volumes of information on land rights and transactions. Registry data can be used by landowners, lenders and public agencies.
- **Cadastral Information Management.** Cadastral data provide the basis for property boundaries and ownerships. Using interaction with geographic information systems (GIS), cadastral maps assist operations in engineering, land registries and finance.
- **Property Valuation.** Property valuation is a key aspect in creating IGR. Trimble solutions provide management and access tools for information such as market values, sales and tax data.
- **Public Access to Land Information.** Trimble technologies enable map-based queries with rapid, consistent results. Using a Web-based approach to information management provides secure, cost-efficient operation and controllable access to internal and external stakeholders.

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