

POLICY BRIEF 08 | AUGUST 2025

Points-Based Valuation for Property Taxation: Improving Equity and Revenue Performance in Local Property Tax Systems

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Key Messages

1. **Outdated valuation systems undermine equity and revenue.** Many property tax systems in low- and middle-income countries rely on outdated or flat-rate methods, leading to unfair tax burdens and severely limited revenue performance.
2. **Points-based valuation offers a practical alternative.** This simplified method estimates property values using a standardized formula based on observable features like size, materials, and location, avoiding costly expert assessments.
3. **The approach is low-cost, transparent, and scalable.** Points-based models can be implemented at a comparatively low and affordable cost, do not require entering buildings, and are easy to explain to taxpayers, improving both compliance and trust.
4. **Freetown's reform demonstrates real impact.** A six-month implementation in Freetown nearly doubled the number of registered properties, increased total tax liability five-fold, and tripled revenue collection in the first year – while also improving equity, by raising taxes on undervalued high-value properties and reducing them for lower-value properties.
5. **A flexible model for data-poor environments.** The system can be adapted to local needs, making it suitable for both large and small cities, and enabling consistent, fair, and sustainable property tax administration even where administrative capacity is limited.

This policy brief is based on Guidance Note 02 "[Implementing a Points-Based Valuation System for Property Taxation](#)" (2024) by Nicolas Orgeira Pillai, Xaver Schenker, Wilson Prichard, and Graeme Stewart-Wilson.

Introduction

Property taxation is one of the most promising tools for generating local government revenue in low- and middle-income countries. It offers a stable, predictable tax base that is linked to immovable assets, can fund essential services, and strengthens accountability between citizens and local governments.

However, in practice, many property tax systems perform poorly – often in significant part due to ineffective valuation systems. Many jurisdictions lack the capacity, data, and systems needed to operate expert-driven valuation approaches. This results in incomplete and inaccurate valuation rolls that are often perceived as unfair – undermining revenue, equity, and public trust. In turn, reliance on simple area-based or flat-rate approaches often leads to severe inequities.

This brief outlines a simplified form of computer-assisted mass appraisal, often referred to as a ‘points-based approach’, which is well-suited to low-data and low-capacity environments. It enables governments to generate fair and consistent property value estimates by using simple formulas that are based on easily observable property features. Importantly, the method avoids the need to enter properties, and relies only on externally visible features of the property, such as size, materials, and location, which significantly reduces costs. These formulas are calibrated to match local market conditions. The results are easy to explain to taxpayers and support straightforward appeals processes.

The approach is transparent, cost-effective, and scalable, offering a viable pathway to improve revenue performance, equity, and public trust. It has been successfully implemented in cities in Sierra Leone and the Democratic Republic of Congo, and piloted successfully in several other countries – with an estimated cost of not more than US\$5 per property for initial implementation in these cities.

Inequitable Valuation Undermines Revenue Performance

A key obstacle to effective property taxation is the absence of an administratively feasible, consistent, transparent, and equitable approach to valuation.

Many low-income countries historically rely upon systems of expert valuation, where trained valuers visit every property in a jurisdiction. However, this approach is resource-intensive, time-consuming, and relatively subjective. The results are frequently incomplete, with inaccurate outcomes, a high risk of collusion between valuers and taxpayers, and a low level of public trust.

Faced with these administrative difficulties, many jurisdictions seek simpler approaches – but these approaches also face significant challenges. Some jurisdictions rely on flat-rate or basic area-based approaches. However, these fail to reflect the difference in actual property quality and value, often leading to severe inequity. Other jurisdictions rely on taxpayers to self-declare taxable values. However, these systems also generally prove ineffective, as they are plagued by non-declaration and under-declaration of values.

There remains a need for an approach to valuation that is administratively feasible, cost-effective, and transparent, in order to yield consistent, equitable, and trusted outcomes. The points-based model provides this middle ground – it improves accuracy and fairness, while remaining simple, affordable to implement, and easy to explain to both officials and taxpayers.

A Practical Model for Fair and Scalable Valuation

A points-based valuation approach provides a structured, data-driven alternative to conventional valuation methods. Rather than valuing each property individually, it estimates market values using a standardized formula based on size, location, and other externally observable property characteristics. Each feature is assigned a weight based on its estimated contribution to property value, and this is used to calculate an estimated value for each property.

This approach aims to ensure significant accuracy in estimating property values, while providing administrative simplicity and transparency for taxpayers. The formula is simple and clear, making it easier for taxpayers to understand how values are calculated, and simplifying the appeals process. The approach generally relies exclusively on externally observable property characteristics, so field teams never need to enter buildings. This makes data collection simpler, faster, and less intrusive.

In turn, the model can be adjusted to fit the particular needs and capacities of different localities. A larger and more complex city may opt to include more property characteristics – preferring to maximize accuracy, despite the higher cost of collecting and updating data. In contrast, smaller cities may opt for more simplified models that offer a clear improvement over area-based approaches, but remain low-cost, simple to administer, and easy for both administrators and taxpayers to understand.

By applying a simple and uniform formula to all properties, the method ensures consistency, equity, transparency, and administrability, making large-scale valuation feasible even in data-poor, resource-constrained environments. Real-world applications show that this method can estimate property values with acceptable accuracy. It often performs much better than current systems, at a much lower cost. Just as importantly, a transparent approach to valuation can build public trust, and thus support greater tax compliance and political support for increased revenue collection. Because the formula is easy to explain, taxpayers are more likely to see it as fair and understandable, and be more willing to comply – or challenge their assessments when necessary.

Key Components of the Valuation Model

A points-based approach generates estimates of property value by building a valuation formula that relies on a locally defined set of observable characteristics that serve as practical proxies for property value. These variables are selected based on their correlation with market value in the local context. Most of this data is collected through field surveys, although some projects also use drone or street-view imagery.

The development of the model begins with defining what constitutes a taxable property – potentially excluding properties such as informal shelters, buildings under construction, and public-use facilities. The model itself generally comprises four key sets of elements that contribute to property value:

- a. **Size.** The foundation of the model is property size. The size of buildings is typically measured by built-up area and the number of floors, which closely reflects construction cost and asset scale.

- b. Location.** The model then generally includes one or more variables relating to location (such as neighbourhood), designed to capture the extent to which otherwise similar properties differ in value based on their location.
- c. Property characteristics.** The model also incorporates key physical attributes of each structure, including building materials, general construction quality, and specific property features and amenities. These features are easy to observe, and capture the difference in quality between properties of similar size and location.
- d. Access to services.** Finally, the model often includes variables to account for differences in access to key services and benefits, such as water, electricity, road quality, sanitation, and street lighting.

All these characteristics are easy to observe and record from outside the building. This makes the process faster and avoids the need to enter homes – reducing the burden on both property owners and field teams.

Implementation Process

Comprehensive mapping and valuation of all properties using a points-based model can be implemented in less than six months in mid-sized cities, and generally involves four key steps.

- 1. Map and identify properties.** The process begins with the creation of a digital map using aerial imagery and basic geographic information system (GIS) tools. Local teams and enumerators trace visible buildings and/or parcel boundaries, and assign each property a unique ID and geographic coordinates. This provides a property measurement and location for valuation purposes, ensures complete property coverage, and supports planning of field data collection. For a city of about 100,000 properties this activity can often be completed in 1 to 4 weeks once aerial imagery has been acquired.
- 2. Collect field data.** Field teams visit all properties to collect valuation data. They do not enter properties. Instead, they take a photo of each property for verification, confirm the number of storeys, and check the accuracy of the building footprint recorded from aerial imagery. They then record additional externally observable characteristics used for valuation, such as roofing and wall materials, access to infrastructure (e.g., electricity, roads, and water), and general construction quality. The use of digital forms ensures data standardization and minimizes errors. Governments may opt to have enumerators collect additional data – for example, about residents, ownership, and businesses – depending on timelines, budget, and priorities. A team of 100 well-trained enumerators can generally collect this data for a city of 100,000 properties in about 3 months, with the actual time required depending on the number of enumerators and pace of data collection.
- 3. Calibrate the model.** Expert valuers assess the taxable value of a randomly selected sample of properties across the jurisdiction. This data is then used in a simple regression analysis to calibrate the weights given to the observable property features used in the valuation model. This analysis ensures that the weight given to each variable aligns with its actual contribution to market value. The model is then iteratively reviewed for fit and predictive performance, working with government experts. The goal is to adjust variables and weights to ensure that the valuation formula aligns with local market realities, and that it is easy for administrators and taxpayers to understand.

- 4. Apply the valuation formula and generate the tax roll.** Once the model is agreed the formula is applied to the data that has been collected for all mapped properties, producing a comprehensive register of assessed property values.

A key advantage of this approach is that it makes it easier to update data over time. Rather than requiring regular re-valuation of every property, as is the case in many expert-based valuation systems, updating only requires: (a) collecting additional data for new properties, or those that have undergone significant changes; and (b) revising the valuation model, based on a random sample of properties, to reflect any changes in market value over time.

Finally, such a simplified approach offers governments flexibility in organizing the implementation of the valuation approach, and ensuring effective cross-government collaboration. Some governments may opt to rely on central government valuation departments, working in partnership with agencies responsible for GIS property mapping. Other governments may decentralize leadership to local authorities, supported by, and in coordination with, central government agencies. In all cases the systematic property data collected through such an exercise has the potential to be used to strengthen a broader range of government functions, including urban planning, land administration, and other areas of revenue mobilization.

Implementing a Points-Based Valuation in Freetown, Sierra Leone

Freetown's recent property tax reform presents a compelling model for cities seeking to increase revenue, improve fairness, and boost taxpayer trust – especially in contexts with limited administrative capacity. In 2019-20, Freetown City Council, with technical support from the International Centre for Tax and Development (ICTD), Local Government Revenue Initiative (LoGRI), and International Growth Centre, introduced a simplified, transparent, and equitable property tax system based on a points-based valuation methodology.

Before the reform, the city's property tax base was incomplete, and valuation was unclear, inconsistent, and out-of-date. Only about 57,000 properties were captured in the property tax register, compared to more than 100,000 properties visible from satellite imagery. In turn, there was no clearly documented methodology in place to ensure consistent property valuation, with evidence that in many cases the most expensive properties in the city were assessed for tax purposes at less than 10 per cent of their actual market value.

A points-based valuation model was initially piloted in two wards in the city, covering more than 11,000 properties. Following a successful pilot the approach was adopted city-wide, beginning in mid-2019. A simple mapping exercise, in which building rooftops were outlined from satellite imagery, almost doubled the total number of properties registered for taxation – increasing this to 110,000. Enumerators were then sent to every property in the city to verify the accuracy of the building outlines, take a photo of each property, and collect a set of externally observable property characteristics to be used for valuation. In parallel, a set of property valuation experts were recruited to estimate the value of a random sample of just over 2,000 properties, which was then used to calibrate the valuation model.

The entire mapping, data collection, and valuation exercise was completed by early 2020 – a little more than six months after launching the exercise. The City Council approved the new valuation roll in early April 2020, after which tax bills started to be delivered. The new mapping and valuation exercise resulted in:

- Total assessed tax liability in the city increasing five-fold, from Le7 billion (US\$750,000) to Le35 billion (US\$3.75 million).
- Total tax collection in the first year the system was fully operational being three times higher than in the year before the reform.
- Major improvements in equity, with assessed values increasing dramatically among the highest value (and previously undervalued) properties, and tax liability for middle- and lower-value properties remaining stable or declining (Table 1).

Table 1: Change in tax liability by property value quintile

Average Tax Payable	Existing System	New System (US\$)	Average Change (%)
1st quintile	14.33	4.31	-70
2nd quintile	15.85	9.48	-40
3rd quintile	16.10	17.40	+8
4th quintile	23.38	36.94	+58
5th quintile	41.64	142.25	+242

Source: Prichard, W., Bakarr Kamara, A., & Meriggi, N. (2020)

Conclusion

The points-based valuation model provides a pragmatic approach to addressing long-standing weaknesses in property tax systems. It recognizes the administrative constraints faced by many local governments, and provides a technically credible and operationally feasible way to estimate property values.

Systems that rely on expert assessments or market sales data are not administratively feasible in most lower-income contexts, owing to the high cost, lack of transparency, and limited data. As an alternative, points-based valuation offers an approach that is tailored to the capacity, data, and resource constraints countries face in practice. It is transparent enough to build trust, accurate enough to ensure fairness, and simple enough to be implemented reliably at scale and at a manageable cost.

Further Reading

- Fish, P. (2018). [Practical Guidance Note: Training Manual for Implementing Property Tax Reform with a Points-Based Valuation](#). (ICTD African Tax Administration Paper 2). Brighton: International Centre for Tax and Development.
- Grieco, K., Michel, J., & Holliday, D. (2021). [Reforming property tax valuation in Sierra Leone](#). (IGC Blog, 2020-02-21). London: International Growth Centre.
- Grieco, K., et al. (2019). [Simplifying Property Tax Administration in Africa: Piloting a Points-Based Valuation in Freetown, Sierra Leone](#). (ICTD Summary Brief 19). Brighton: Institute of Development Studies.
- Orgeira Pillai, N., Schenker, X., Prichard, W., & Stewart-Wilson, G. (2024). [Implementing a Points-Based Valuation System for Property Taxation](#). (LoGRI Guidance Note 02). Toronto: University of Toronto.
- Prichard, W., Bakarr Kamara, A., & Meriggi, N. (2020). [Freetown just implemented a new tax system that could quintuple revenue](#). (ICTD Blog, 2020-05-22). Brighton: International Centre for Tax and Development.
- Prichard, W., et al. (2019). [Can property tax valuation in Africa be simplified? Lessons from a pilot project in Freetown, Sierra Leone](#). (ICTD Blog, 2019-11-27). Brighton: International Centre for Tax and Development.
- Slack, E. (2011). [The Property Tax – in Theory and Practice](#). (IMFG Working Paper 2). Toronto: Institute on Municipal Finance & Governance.
- Slack, E. & Bird, R.M. (2014). [The Political Economy of Property Tax Reform](#). (OECD Working Papers on Fiscal Federalism 18). Paris: Organisation for Economic Co-operation and Development.
- Zebong, N., Fish, P., & Prichard, W. (2018). True Values. RICS Land Journal, June/July: 24–26.
- Zebong, N., Fish, P., & Prichard, W. (2017). [Valuation for Property Tax Purposes](#). (ICTD Summary Brief 10). Brighton: Institute of Development Studies.

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LoGRI Policy Brief 08

First published by the University of Toronto in August 2025

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LoGRI Local Government Revenue Initiative

About Us

Cities in the Global South need significant revenue to build infrastructure and provide local services. However, efforts to collect taxes, particularly on property, are often ineffective and inequitable. LoGRI supports governments to raise local revenue more fairly and in ways that promote trust, transparency and accountability.

We do this by:

- › Partnering with governments to provide hands-on support and advice
- › Conducting collaborative, applied research to inform reform projects
- › Developing operational tools, including technology solutions
- › Delivering skills training to develop local capacity

We also seek to share insights and shape policy by engaging with regional and international stakeholders on local public finance issues. LoGRI is based at the Munk School of Global Affairs & Public Policy and is an initiative of the International Centre for Tax and Development (ICTD).

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