

# Digitalisation of local revenues in Malawi

Evaluating the introduction of Revenue Management Systems in urban councils

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## Executive Summary

Digitalization of revenue administration at the local level has long been proposed as a promising reform for local governments in developing countries to improve their financial position. This paper takes stock of the success of the introduction of 'revenue management systems' (RMSs) in four cities in Malawi.

It suggests that the reforms have had mixed results. On the one hand, the reforms seem to have brought about improvements in the operations of the local governments, increasing the efficiency of the administration, and increasing public hope in reduced revenue embezzlement and corruption.

These improvements have not however translated into significant improvements of actual revenues. Part of the explanation for this is that digitalization was not sufficiently deep and not sufficiently embedded in an overarching IT Strategy, leaving important processes in their manual form. Ultimately, the RMSs were built 'on top' of somewhat dysfunctional pre-existing processes, and accompanying reforms would be needed to fully leverage the potential of technology.

The paper recommends that to effectively capture the potential of revenue management systems and digitalization more broadly, there is a need for strengthening subnational incentives for Own Source Revenue optimization as well as increased focus on identification and registration, tax collector management and expenditure efficiency.

Where technology is used, it should be harnessed for the full benefit. This means having a comprehensive IT strategy and preparing for new systems with the necessary IT infrastructure and internet connectivity, skills and capacity, and agreements in place to facilitate integration with other systems within the city government, at the national level, and with banks.

At the national level, the National Local Government Finance Committee (NLGFC), and the newly relocated Directorate of Urban Development into the Ministry of Local Government, could support by fostering greater subnational collaboration and knowledge exchange. This could include group negotiations with vendors, synchronization with national systems, and also facilitate the customization of technology to the local contexts and the introduction of relevant processes to effectively use new technology.

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## Introduction

Malawi is one of the poorest countries in the world with a GDP per capita of around \$625. Malawi is also one of the most rapidly urbanizing countries in the world (4.41% per annum) with a fast-growing population (2.7%) (National Urban Policy, 2019; Malawi Habitat Report III, 2015). Its population of 18.6 million is expected to double by 2038 (World Bank, 2022). To accommodate this growth and avoid the lock-ins of unplanned urbanization, substantial investments in urban infrastructure will be needed.

One of the most important sources of funding for Malawi's rapid urbanization comes from the urban centers themselves. Malawi's four cities are currently generating around 70% - 80% of their budgets from Own Source Revenues (OSR) through the various taxes, licenses, and fees over which the Urban Local Governments Authorities (ULGAs) have direct control over. While this is already a considerably high percent of overall revenue, this is largely due to very low contributions from central government, and reports suggest that the collection of OSR continues to be far below its potential (ODI, 2022).

Further increasing OSR also has the advantage of also directly improving the ULGA's creditworthiness, or overall ability to take up external credit. More importantly, it can generate significant governance dividends in terms of public expenditure efficiency and transparency, increasing local government ownership and accountability as citizens expect improved service delivery in exchange for their tax contributions (Prichard, 2015).

One of the most prominent means of optimizing OSR administration at the local level, is using technology and digitalization of tax systems. Among others, digitalization can reduce the cost of compliance for taxpayers (enhancing voluntary compliance), as well as decrease the costs of administering local revenues. It also increases transparency and efficiency within administrations. Digitization can play a role across the tax spectrum – from identification of the revenue base, registration, billing, facilitating payments and ensuring compliance.

All four ULGAs in Malawi have engaged in various digitalization initiatives in the past few years. The objective of this study is to better understand what role the use of digital technologies has or can play in improving local revenue mobilization from identification to billing and collection. It seeks to understand whether there are distinct prerequisites for successful digitalization of revenue administrations at the local level and what local governments need to do to ensure the success of digitalization approaches. It will generate some initial policy recommendations for Malawi but also suggest areas for further research.

This paper is organized as follows. Section 1 provides an overview of the Municipal Finance context in Malawi. Section 2 reviews the literature on the digitalization of revenue administration. The methodology and data used for purposes of this study are outlined in Section 3. Section 4 presents the results. It first looks at general trends in the key revenue streams of city rates, business licenses and market fees in all four cities over time, including a comparison of revenue potential with actual collections and key bottlenecks. It then assesses the extent of digitization in Malawi and looks at how this interacts with revenue collection. Section 5 gives policy recommendations, and Section 6 recognizes the study limitations and provides recommendations for further research.

## 1. Municipal finance overview

Malawi first gained independence in 1964, upon which it entered a period of centralized one-party rule. In 1993 it then departed on a process of multi-party presidential and parliamentary elections accompanied by fiscal decentralization, entrenched in the 1998 National Decentralization Policy and Local Government Act.

Malawi has two spheres of government: national and local. There are 35 local governments, 28 are districts covering rural areas, 4 are city councils and 3 are municipal councils. Despite these different classifications of local governments, the Local Government Act does not make any distinction between the functions of these different types of local government. This means that all local governments have the same status and should deliver the same set of services (Government of Malawi, 2015). In practice, there is some overlap between the functions of local governments in urban areas (city and municipal councils) and their rural counterparts, such that district councils continue to deliver some services within the jurisdiction of city and municipal councils.

The overall legal framework of decentralization is provided by the National Decentralization Policy and Local Government Act of 1998. The Act has been continuously amended since, most recently in 2017. The regulatory framework that governs the Local Authority financial management function is made up of the following: (a) The Constitution (b) Public Finance Management Act (PFMA), 2003 (c) Public Audit Act (PAA), 2003 as amended (d) Public Procurement and Disposal of Assets Act (PPDA), 2017 and (e) Local Government Act (LGA), 1998. Optimization of Own Source Revenue by urban local governments is also further elaborated in the country's long term development plan 'Malawi Agenda 2063' under its Pillar 3 'Urbanization'. This legislative framework identifies several key institutions with roles to play regarding the management of fiscal decentralization. These include: the National Local Government Financing Committee (NLGFC), Ministry of Finance (MoF), Ministry of Local Government (MoLG), Sector Ministries, the Auditor General and Parliament. Table 1 below, showcases their respective core functions.

The mandate of Malawi's local governments as stipulated by law includes the provision and maintenance of refuse and sewage disposal, city and feeder roads, water supplies, public amenities, as well as licensing and inspection of small and medium businesses (NLGFC, 2022). Local governments are also assigned with managing healthcare centers, education, transport, agriculture, and the administration of land within their localities. There are also a range of functions which were supposed to be devolved but are still financed and performed by the Ministries. These include construction of basic infrastructure for service delivery; recruitment, deployment, and transfer of staff up to director level which is done by the Local Authorities Service Commission (LASCOM); and the procurement of essential supplies (for example, medication and textbooks). Therefore, while the responsibilities between central government and local governments appear to be clear in the formal legislation and policy (de-jure), in practice the situation on the ground is quite different, with some functions that were meant for the local governments being performed by the central government, and even worse for ULGAs.

Table 1: Core functions of institutions key to fiscal decentralisation

Institution	Core Functions
NLGFC	<p><u>Budgeting</u></p> <ul style="list-style-type: none"> <li>• Receive all estimates of revenue and all projected budgets of all local governments;</li> <li>• Prepare a consolidated budget for all local governments;</li> <li>• Consider submissions of supplementary estimates/reallocations from local governments; and</li> <li>• Make application to the Minister for supplementary funds for local governments where necessary.</li> </ul> <p><u>Accounting and financial management</u></p> <ul style="list-style-type: none"> <li>• Examine and supervise accounts of local governments;</li> <li>• Receive final accounts from local governments and forward a copy to the Auditor General;</li> <li>• Receive a copy from the Auditor General of the report of the local governments audited accounts; and</li> <li>• To have power to disallow any item of expenditure and to surcharge.</li> </ul> <p><u>Fiscal allocation and transfers</u></p> <ul style="list-style-type: none"> <li>• Make recommendations relating to the distributions of funds allocated to local governments; and</li> <li>• Revenue mobilization.</li> </ul>
Ministry of Finance	<ul style="list-style-type: none"> <li>• Overall economic and fiscal policies – allocation of local governments and (partially decentralized) sector financing in GoM budget and determination of overall size of grant pool for local governments.</li> <li>• The Budget Division manages the allocation of national resources sustainably. This is achieved through the management of the government national budget and the resource allocation to public sector institutions.</li> <li>• Accountant General – setting national accounting standards – oversee and develop IFMIS implementation.</li> <li>• Internal audit standards, guidelines and capacity building.</li> </ul>
Ministry of Local Government	<ul style="list-style-type: none"> <li>• Coordination of local government policy related issues.</li> <li>• Leading decentralization policy developments – including issues related to e.g., local government own source revenues.</li> <li>• Oversight and coordination of district level training and capacity building activities</li> <li>• Coordination of the annual LAPA exercise</li> </ul>
Sector Ministries	<ul style="list-style-type: none"> <li>• Policy setting and standards – including for devolved services.</li> <li>• Capacity building and supervision of local sector service delivery in local governments.</li> <li>• Advice on sector allocation formula.</li> <li>• De-facto decision making on distribution of sector resources – not flowing through local government votes – across local governments.</li> </ul>

Institution	Core Functions
Parliament	<ul style="list-style-type: none"> <li>Approval of local government Budgets and key finance policies such as allocation formulae. Oversight of national and local government budget implementation. Oversight over MDAs' including local governments' performance on service delivery</li> </ul>
Auditor General	<ul style="list-style-type: none"> <li>Audit of all public institutions including local governments.</li> </ul>

Source: NLGFC (2022)

In urban areas, governance takes the form of a City Council, made up of two parts: A political arm composed of elected councilors and led by a mayor, elected every 2.5 years; and an administrative arm called the Council Secretariat, led by the Chief Executive Officer (CEO).

The four urban areas in Malawi are Blantyre, Lilongwe, Mzuzu and Zomba. Blantyre is the second most populous city in Malawi and widely known as the financial and commercial center of the country. It is located in the south of the country and is an important transport hub for goods in and out of Mozambique. Lilongwe is the administrative capital of Malawi and also the largest and fastest growing city in the country. Mzuzu is the third largest city in Malawi. It is located in the north of the country and functions as an important crossroads for goods into Tanzania. Zomba is the smallest of Malawi's four cities with just over 100,000 inhabitants. Zomba, is the former capital of Malawi and located in close proximity to Blantyre. Table 2 shows the population and population growth rates in the four cities of Malawi.

Table 2: Population and population growth rates in four cities of Malawi

ULGA	Population, 2018	Population Growth Rate
Blantyre City	800,264	3.22
Lilongwe City	989,318	4.36
Mzuzu City	221,272	4.2
Zomba City	105,013	3

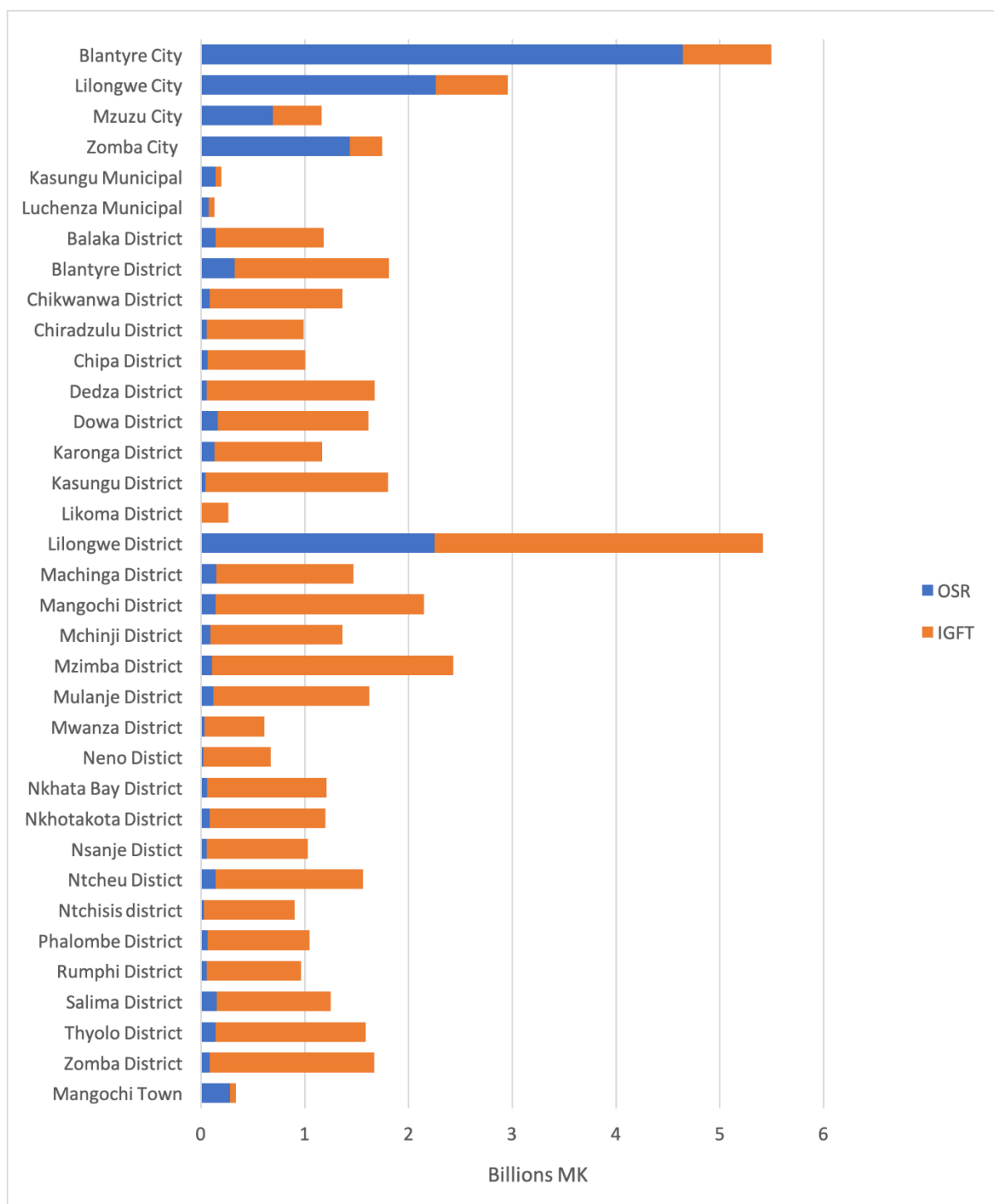
Source: ODI (2022)

### Inter-governmental transfers

Since less than 20% of the population of Malawi live in urban areas, much of the national policy and funding is directed at rural rather than ULGAs - shown in Figure 1 below. The large rural population share and resultant rural bias is politically motivated. Rural areas are where most votes come from during elections, and urban areas are known to be epicenters of political dissent and opposition strongholds. In consequence, the law states that rural local councils should have 80% of their budget coming from inter-governmental fiscal transfers (IGFT), while for urban councils only 20% should come from central government transfers. In a country with very rapid urbanization (4.4%), this 20% limit is a difficult constraint as there is increasing pressure to deliver necessary services and put in place the conditions for effective urbanization.



Figure 1: OSR vs IGTs of Local Governments in Malawi



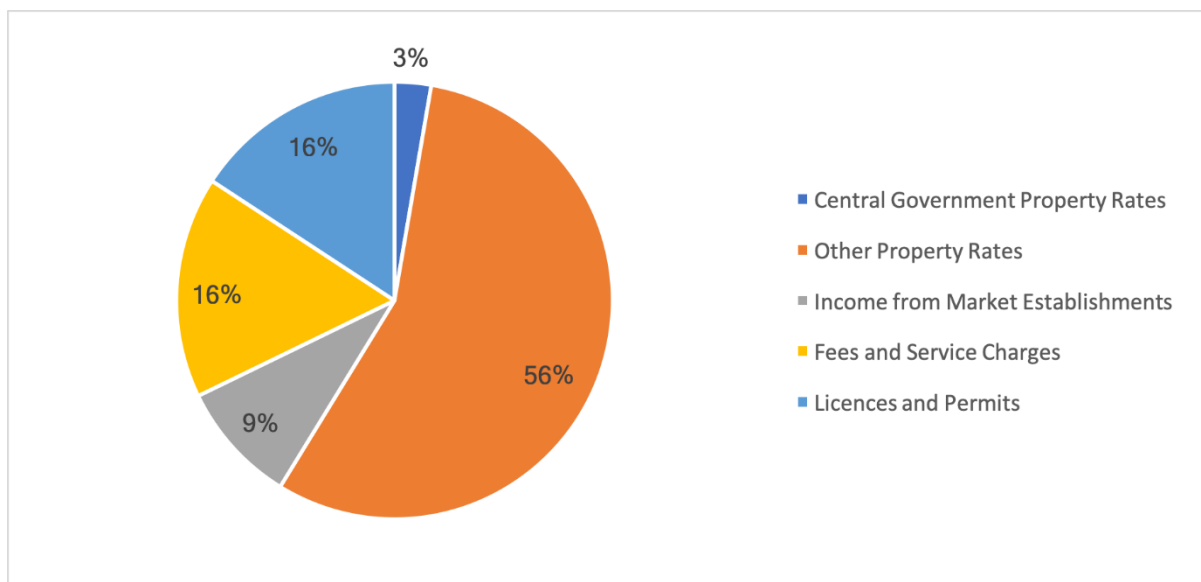
Source: ODI (2022)

Since Malawi is already at a high level of overall debt distress - with a fast-growing debt of MWK 6.4 trillion (\$7.7 billion) in 2021 or 63% of GDP (fast approaching the World Bank recommended threshold of 64% for developing countries) – it is unlikely that the national government is likely to be able to significantly increase the overall allocation to local governments. While there is a chance that policy may shift focus from rural to urban in the near future, even that will not meet the expenditure needs of ULGAs. The inter-governmental funding model prevailing for the urban councils may therefore be sensible for the future as it calls for financial self-sufficiency by the councils, amidst increasing financial uncertainty from central government.

## Own-source revenue

In terms of OSR, as per the 1998 Local Government Act, ULGAs have the authority to levy: (i) property rates, (ii) ground rent (iii) fees and licenses (iv) commercial undertakings and (v) service charges. As showcased in Figure 1 urban areas have a much greater economic base than rural areas and generate roughly ten times as much OSR per capita compared to rural local governments (ODI, 2022). The three most important OSR sources are property rates, fees and service charges, followed by income from markets, and licenses and permits (primarily business license). In Figure 2 below, central government property rates are separated out, showcasing the portion of city rates that government pays to ULGAs for the properties it owns in the respective ULGAs. By law, central government pays only 50% of such property rates since it's the principal landlord for all land in the country (NLGFC, 2022).

Figure 2: OSR breakdown of ULGAs 2021/22



Source: NLGFC compiled data (2021) on local governments own source revenue (nominal).

In terms of loans and debt, local governments do in theory have access to overdraft and loans as per the Local Government Act. However, they are not able to enact this. This is because the PFMA limits the powers of local governments to borrow through a conditionality of prior approval by the Ministry of Finance - which has always been reluctant to approve due to the country's debt burden, and fear of liability due to local governments historical bad debt servicing record.

According to Malawi Nyasa Times (June 2021), most local governments have accumulated various debts and unpaid bills (estimated at an excess of MWK 14 billion or \$16.8 million) to suppliers, service providers, and their own civil servants. Local governments were initially also able to borrow from The Development Fund for Local Authorities (DFLA), established as a trust fund in 1993. Yet, since 1998 the DFLA has become under-capitalized due to poor repayment rates and inflation. As a consequence, ULGAs have had little choice but to focus on OSR optimization.

Pillar 3 of The Malawi Agenda 2063, the country's over-arching development blueprint, emphasizes that own source revenue mobilization in both rural and urban councils need to be enhanced to ensure full funding of development budgets and reduced dependence on inter-governmental fiscal transfers from the central government. One of the reform strategies included is 'increasing efficiency in the collection of local government revenues.'

## **2. Literature review**

Information and communications technology (ICT), in the context of local revenue generation, comes in various shapes and sizes. The most common technologies include the internet, portal solutions, social media, mobile platforms, cloud computing, aerial imagery, artificial intelligence, machine learning and revenue management systems (see Table 3). In order to leverage some of these technologies, basic taxpayer and payment data must be digitalized. Local Governments in the past often resorted to less specialized software, such as MS Word or MS Excel, to store such data but are now increasingly opting for Revenue Management Systems (RMSs). RMSs enable digital data storage, increased data security, data analysis and automated data processing functions.

ICT appears to offer improvements in nearly all aspects of revenue administration (Asian Development Bank, 2010; Canares, 2016). The use of geospatial data facilitates the identification of informal (unregistered) real estate properties and businesses, and the updating of property cadasters (Fosu and Ashiagbor, 2012; Delbridge, Harman, Jangia 2020). Recent methods to innovate and streamline the valuation of properties for tax assessments have also been facilitated by the ability to process and analyse large datasets to determine value, either through analyzing real estate transactions or property and neighborhood characteristics.

ICT also allows for rapid mass communication with taxpayers via SMS technology and other platforms (de Mello and Ter-Minassian, 2020), which increases voluntary compliance. Hotlines, online portals, Q&As on tax issues, online tax filing and payment facilities create opportunities to collect taxpayer feedback, optimize processes and educate the public to improve sensitization efforts (Bird and Zolt 2008). New payment options facilitated by ICT, such as online bank transfers or payment via mobile money, can help reduce tax compliance costs and reduce pilferage of cash by tax collectors. Electronic payments can also improve the accuracy of tax billing and payments.

ICT can also be used to generate more accurate reports, thereby supporting decision-making processes related to finance management. For example, IFMIS reports are supposed to support the process of building transparency, accountability, and the reduction of corruption within governments (Laizer and Suomi, 2012). Data systems and standardized reporting enable the verification of income, consumption, and wealth information, which is required to calculate tax liability (Gupta et al., 2017; McCluskey et al., 2017; de Mello and Ter-Minassian, 2020). Data systems and standardized reporting also enables governments to spot patterns, trends and outliers.

Table 3: The potential of digitalization in various administrative processes

The Potential of Digitalization	
<b>Registration / Valuation</b>	
<b>Key Functions</b>	<b>Potential for Digitalization</b>
Identification	<ul style="list-style-type: none"> <li>• Geo-spatial data for identification of unregistered properties</li> </ul>
Surveying	<ul style="list-style-type: none"> <li>• Geospatial information to identify building location, size and structural characteristics.</li> </ul>
Storing / Calculation	<ul style="list-style-type: none"> <li>• Datasets for verification &amp; automated completion of taxpayer data</li> </ul>
<b>Billing</b>	
<b>Key Functions</b>	<b>Potential for Digitalization</b>
Bill generation	<ul style="list-style-type: none"> <li>• Database, user interface allows for automatic completion of taxpayer data</li> </ul>
Bill authorization	<ul style="list-style-type: none"> <li>• Automated alerts when signature required via user interface</li> </ul>
Bill distribution	<ul style="list-style-type: none"> <li>• SMS technology, call centres, email distribution</li> </ul>
<b>Enforcement</b>	
<b>Key Functions</b>	<b>Potential for Digitalization</b>
Sensitization / Follow-up	<ul style="list-style-type: none"> <li>• SMS technology, call centres, email, hotlines, online portals</li> </ul>
Payment	<ul style="list-style-type: none"> <li>• Online payment options, POS devices, mobile money, digital receipts</li> </ul>
Legal action	<ul style="list-style-type: none"> <li>• No extensive digitalization possible yet</li> </ul>
<b>Administration</b>	
<b>Key Functions</b>	<b>Potential for Digitalization</b>
Reporting	<ul style="list-style-type: none"> <li>• Data systems and standardized reporting</li> </ul>
Analysis	<ul style="list-style-type: none"> <li>• Automated reporting via systems</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Audit trails for tracking of users, permission levels, etc.</li> </ul>

The acclaimed benefits of ICT solutions for the local revenue administration have, at least partially, manifested themselves in developing countries. Fosu and Ashiagbor (2012) provide evidence through a case study that the introduction of a computer assisted mass appraisal (CAMA) method improved the equity of the rating process by harmonizing evaluation criteria in Ghana. Karimi et al (2017) suggest through a regression analysis that the adoption of an automated revenue collection system in Embu, Kenya was positively correlated with increased revenue collection. Fish (2015) provides evidence of how ICT created administrative efficiencies and improved revenue collection in Sierra Leone and Malawi. As the Revenue Mobilization Programme (REMOP) was rolled out in Mzuzu, Malawi, revenues were doubled in the first year as 30,000 new properties were captured in the system. Kopanyi (2016) and Kopanyi and Franzsen (2018) show how the Kampala Capital City Authority (KCCA) implemented revenue automation and introduced the e-Citie programme, which simplified registration, payment and other revenue processes, contributing to a fourfold increase in property tax revenue. But the introduction of technology can also be a double-edged sword. In Ghana, a recent study showed that the RMS system increased tax collection by 85%, largely because the technology employed allowed for more

efficient identification and bill delivery. However, it also resulted in increased incidence of bribes, mainly among lower income groups (Dzantsi et al., 2021).

In addition to the aforementioned successful applications of ICT tools, research has also revealed a series of common bottlenecks that undermine the effective implementation of ICT for purposes of revenue administration (see e.g. Prichard and Fish, 2017). Based on the literature, we have identified the four broad bottlenecks outlined below.

**Insufficient reform incentives:** optimizing OSR systems may not be a common interest among all actors involved. Effective OSR policies and systems are frequently not in the interests of tax collectors, politicians or economic elites, all of whom benefit from tax loopholes, lack of enforcement or reduced business or property tax rates (Fleck, 2022). Evidence of this 'political' bottleneck also abound in the literature on Malawi itself where the introduction of the IFMIS met difficulties because the technology provided too much oversight, which made it easy to detect corruption, hence running against the interest of political principals and senior bureaucrats (Laizer and Suomi, 2012; TechnoBrain, 2016; Chene, 2009; Durevall and Erlandsson, 2005; Forgues-Puccio, 2013; Chimjeka, 2021).

**Inadequate revenue systems:** IT systems are ultimately limited in their potential usefulness by the tax systems on which they are built (e.g. Durevall and Erlandsson, 2005). Where IT systems are used to automate broken underlying processes, significant improvements will not materialize. For instance, if the key problem is a lack of legislation to enforce compliance, ICT is unlikely to offer significant improvements.

**Inadequate ICT solutions:** some IT systems and solutions simply are not functional for specific local governments. These systems may be too costly to implement/maintain (see de Mello and Ter-Minassian, 2020). They may also be too complex to operate in contexts of low overall capacity (TechnoBrain, 2016; Durevall and Erlandsson, 2005). Local governments may not have sufficient staff with the necessary IT knowledge to install and maintain new systems. Additionally, the ICT solution may not be customized to the specific local reality (Chene, 2009), be unable to communicate with other national/local government processes (Laizer and Suomi, 2012; Prichard and Fish, 2017; Fölscher et al, 2012), be overly dependent on internet or power in environments of poor connectivity (Prichard 2014), or require extensive additional local storage and server options (TechnoBrain, 2016).

**Inadequate implementation:** the process of introducing new IT systems may not be properly planned for, resulting in inadequate understanding of systems' functional and performance requirements, human resource needs, etc. There is also often an inadequate roll-out plan that inhibits effectively sequencing the introduction of changes and allocates insufficient time for testing and piloting of the system (see, e.g. TechnoBrain, 2016). While reform programmes often provide extensive technical documentation and formal training sessions, officials with limited IT expertise generally need continuous on-the-job training, which is both longer-term and labour-intensive (Prichard and Fish, 2017).

### 3. Methodology

In seeking to assess the impact of ICT in the administration of local revenues in Malawi, this study will focus on the Revenue Management Systems (RMS) that were introduced in all four cities since 2017. Assessing the impact and performance of these various systems is not easy as they were often introduced alongside other changes in the broader OSR environment and as some of them have not been operational for long. To overcome this challenge this paper attempts to holistically assess the impact from various vantage points:

- (1) **Carrying out stakeholder interviews** (local governments, national agencies, software providers) to understand the general challenges faced in revenue administration, assess what the introduction of RMSs entailed, in terms of the technology used and the digitalization of processes, as well as to understand their view of the impact of RMS thus far. Stakeholders included City Council officials, specifically from the Directorates of Finance and Commerce and IT, as well as Chief Executive Officers, Mayors, members of the Finance and Audit Committee, tax collectors, third party software providers, officials from the National Local Government Finance Committee, and taxpayers (specifically Market Committees). The interviewees were purposefully selected based on their position, and were neither comprehensive nor selected in a randomized way and so cannot be used as an indication of the views of government officials in the four cities more broadly. They do however provide some anecdotal insights as to how the benefits and challenges of the introduction of the RMSs in the four cities is perceived.
- (2) **Examining the government documents which indicate the overall changes in revenue.** These included budget documents, budget analysis documents, collection & compliance analysis documents, reports from revenue administration systems, annual revenue and expenditure reports, and audit reports. In looking at these documents, the focus was on assessing property taxes, business licenses and market fees, since these are the most important revenue sources of local government and also commonly the first targets for digitalization on the RMSs.
- (3) **Surveying of taxpayers and tax collectors to gauge their view of the impact of digitalization.** The survey tools consisted of two parts: one for taxpayers (market vendors, property tax payers and business licensees) and one for tax-collectors (supervisors, revenue collectors, and ticket sellers). The survey questionnaires were administered by enumerators in each of the cities of Blantyre, Lilongwe, Mzuzu and Zomba, and data was captured on computer tablets or smartphones. During the training of Enumerators, questionnaires were translated and explained in the vernacular language Chichewa where necessary. For tax collectors, the research team attempted to interview the full sample, while taxpayers were randomly sampled in areas selected to cover diverse demographics. Respondents were assured of the anonymity of their responses to avoid further bias. In total 530 taxpayers were interviewed and 108 tax collectors across all four cities.
- (4) **Estimating the revenue potential** of 3 main revenue sources using budgetary data and stakeholder estimates of tax base size to compare with data on compliant taxpayers. Compliant taxpayer estimates are, for the most part, based on government revenue documents and stakeholder interviews.

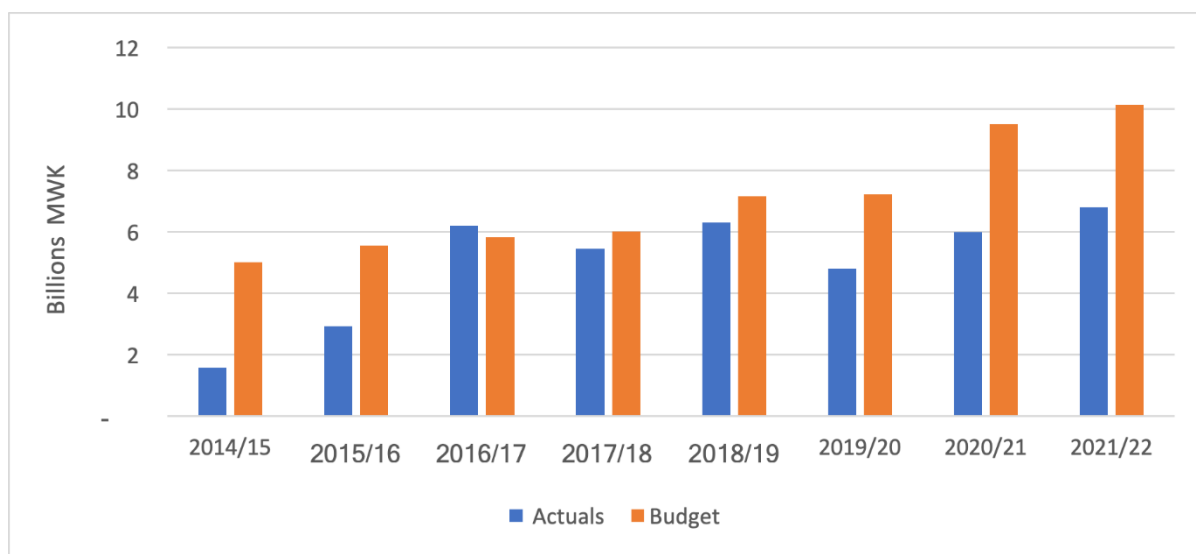
## 4. Results

This section first explores general revenue collection trends and potential for city rates, business licenses and market rates for the four cities of Malawi, as well as the key bottlenecks that inhibit reaching their potential. It then does a deeper dive on mapping digitalization efforts, how this is correlated with changes in revenue, and views on the impact of digitization from various stakeholders – including government officials, RMS service providers, tax collectors and taxpayers.

### What is the revenue potential of the Malawian cities?

The existing data shows that the cities still have considerable room for improvement in terms of the administration of City Rates, Business Licenses, and Market Rates. One way of gauging foregone revenue potential is by looking at actual revenue versus budgeted revenue figures. Figure 3 reveals that the gap between actual and budgeted revenue has been growing since 2017/18 and by 2021/22 reached around 35% for City Rates and Market Rates in all 4 cities. The budgeted figures approximate revenue targets based on realizable collection targets and are thus lower than actual potential revenue.

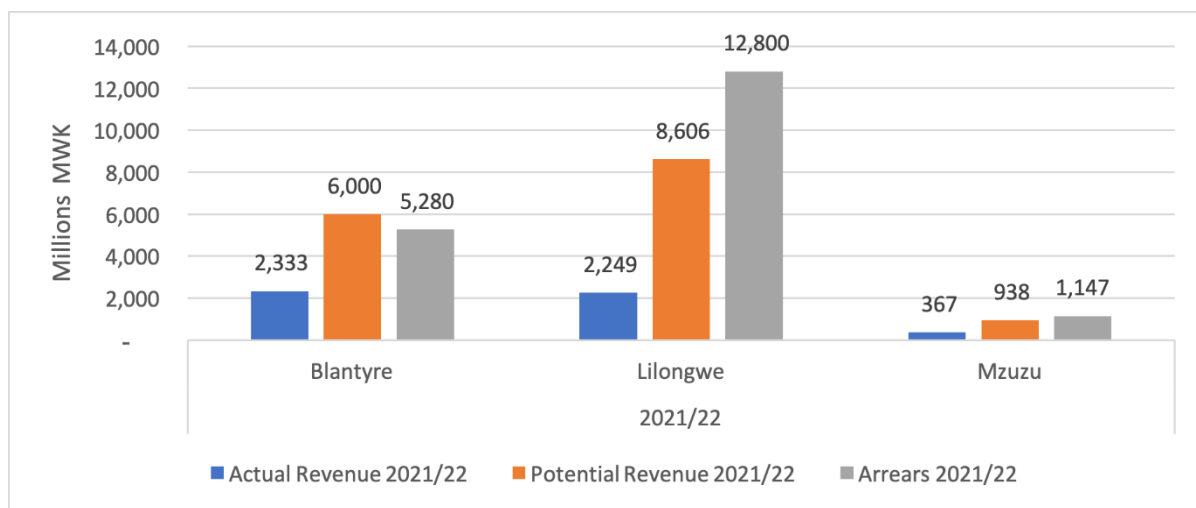
Figure 3: Actual vs Budget Revenue for City and Market Rates (in MWK billions)



Source: budgets and annual reports from ULGA's and NLGFC

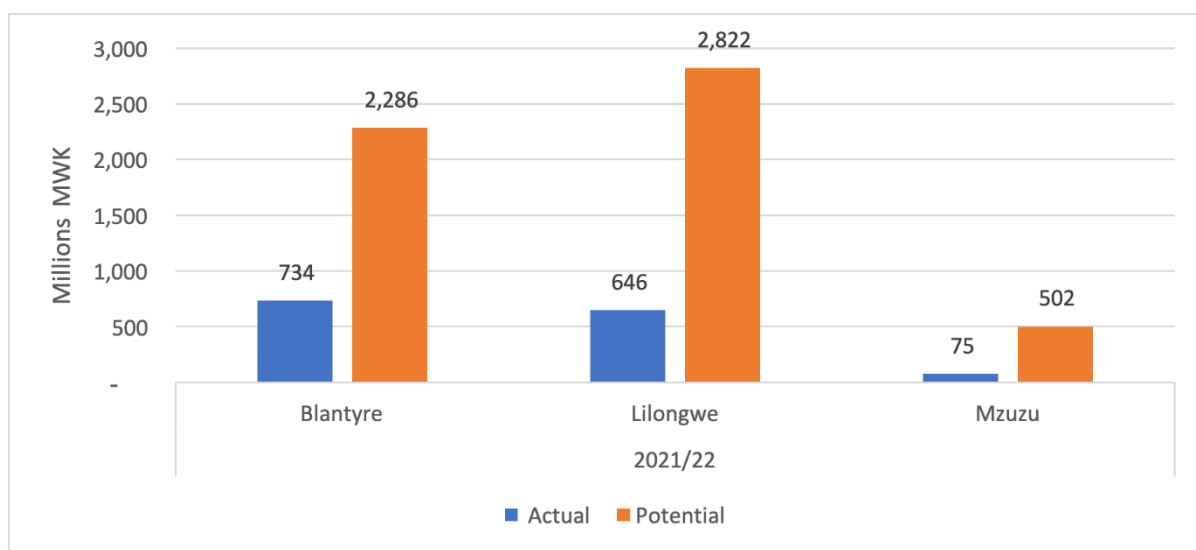
The calculations carried out based on the data collected from budget documents, as well as the interviews with government stakeholders and a few reasonable assumptions outlined in Table 4, suggest that the cities are collecting a fraction of their actual revenue potential. For City Rates, as shown in Figure 4, Blantyre is collecting around 38% of potential revenue, Lilongwe 26% and Mzuzu 39%. In Blantyre, City Rate Arrears were 2.2x as large as annual revenues, in Lilongwe 5.6x and in Mzuzu 3.12x as large. For Business Licenses, Blantyre is collecting 32%, Lilongwe is collecting 22% and Mzuzu 14%, as shown in Figure 5.

Figure 4: Actual vs Potential Revenue and Arrears for City Rates 2021/22(in MWK Millions)



Source: budgets and annual reports from ULGA's and NLGFC

Figure 5: Actual vs Potential Revenues for Business Licenses 2021/22(in MWK Millions)



Source: budgets and annual reports from ULGA's and NLGFC

Table 4: Methodology for estimating Revenues for Cities and Business Licenses in MWK for 2021/22<sup>1</sup>

	City Rates			Business License		
	Blantyre	Lilongwe	Mzuzu	Blantyre	Lilongwe	Mzuzu
Actual Revenue (millions MWK)	2,332	2,248	367	734	646	75
Taxpayers in Database	71,000	47,000	40,363	9,600	N/A	4,919

<sup>1</sup> Light green means the figures were found in official government documents, light yellow stands for figures that were provided by government officials during interviews, blue stands for figures that were estimated based on existing data as well as assumptions such as e.g. cities in Malawi will have a similar number of taxpayers per capita. For instance, to gauge the number of properties in Lilongwe we used the number of properties per capita from Blantyre (0.11) and multiplied it by the population of Lilongwe.

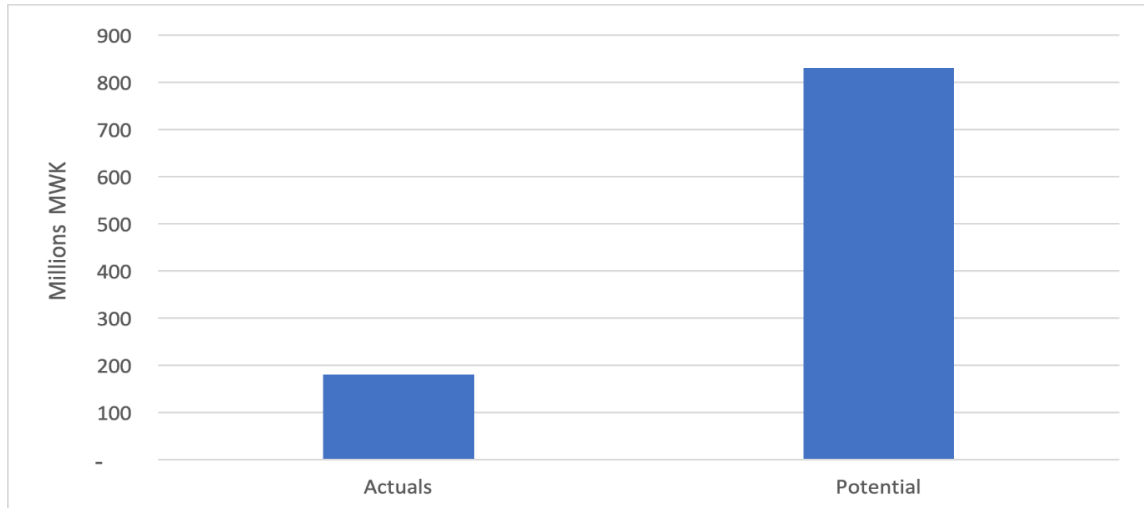


No of compliant taxpayers	14,200	23,500	25,832	5,205	2,720	739
Estimate of No of taxpayers	71,000	89,938	66,000	16,200	20,000	4,919
Average collections per taxpayer (MWK) <sup>2</sup>	84,507	95,685	14,217	141,099	141,099	102,079
Total estimated potential (millions MWK) <sup>3</sup>	6,000	6,605	938	2,285	2,821	502

Source: budgets and annual reports from ULGA's and NLGFC

For Market Rates, data was not sufficient to estimate potential for all cities. Instead, the potential was only estimated for Mzuzu based on the data collected from its main market. The approach used to estimate market potential was based on estimates of the actual number of paying daily market vendors compared with estimates of the total number of daily market vendors outlined in Table 6. However, given that Mzuzu is likely operating well below potential (at around 22%) (see Table 5) and still has far higher per capita revenue figures from markets than Lilongwe and Blantyre, this suggests that there will likely also be significant issues with the collection of revenue from markets in those two cities (see Table 6). In looking at all three revenue sources it is clear that there is significant room for improvement in the Malawian cities.

Figure 6: Estimates of Revenue Potential for Market Rates in Mzuzu in MWK FOR 2021/22



Source: budgets and annual reports from ULGA's and NLGFC

<sup>2</sup> For the most part, these figures were estimated based on existing data or by dividing actual revenue by total compliant taxpayers.

<sup>3</sup> Unless estimates of potential were provided by government officials, these figures were estimated by multiplying the average collections per taxpayer by the estimated number of taxpayers.

*Table 5: Methodology for estimating revenue potential from market rates in Mzuzu in MWK*

<b>Estimated Annual Potential in MWK</b>	
Actual revenue central market	62,536,800
% of total market revenue from central market	35%
Rate per day Central Market (MWK) <sup>4</sup>	200
Average paying vendors per day	868
Number of estimated vendors <sup>5</sup>	4000
Potential per year central market	288,188,018
Potential of all markets per year <sup>6</sup>	829,824,885

*Table 6: Comparison of Market Revenue per capita across Malawian cities in MWK*

<b>City</b>	<b>Total Market Revenue 2021</b>	<b>Population</b>	<b>Market Revenue / Capita</b>
Blantyre	377,038,981	800,264	471
Lilongwe	295,090,570	989,318	298
Mzuzu	170,085,860	221,272	769
Zomba	88,962,940	105,013	847

*Source: budgets and annual reports from ULGA's and NLGFC*

## **Key bottlenecks that prevent Malawian cities from reaching their OSR potential**

### **Registration**

One of the most significant shortcomings of the revenue administrations of City Rates and Business Licenses is the registration of properties and taxpayers, particularly in Lilongwe. In Lilongwe, only a fraction of properties are in the City Rate database. While more extensive revenue mapping and surveying is needed to identify the actual number of properties, it is unlikely that Lilongwe, with a population of around a million inhabitants, would have almost the same number of properties in the database as Mzuzu, a city of only 220,000 inhabitants. Government officials administering business licenses suggested that there may be around 20,000 – 25,000 businesses in Lilongwe, but only 2,720 are being billed. For market fees, city authorities have neglected to register regular daily market vendors so there are no benchmarks and baselines for monitoring and auditing.

### **Tax collector management and fraud**

Another issue that emerged clearly from the surveys and the interviews are the challenges with tax collector management. ULGAs do not have realistic baselines

<sup>4</sup> This is an estimate of the average daily rate, there are several rate categories based on size of space occupied at market. Due to pervasive practices of subletting the potential daily rate per vendor is actually much higher.

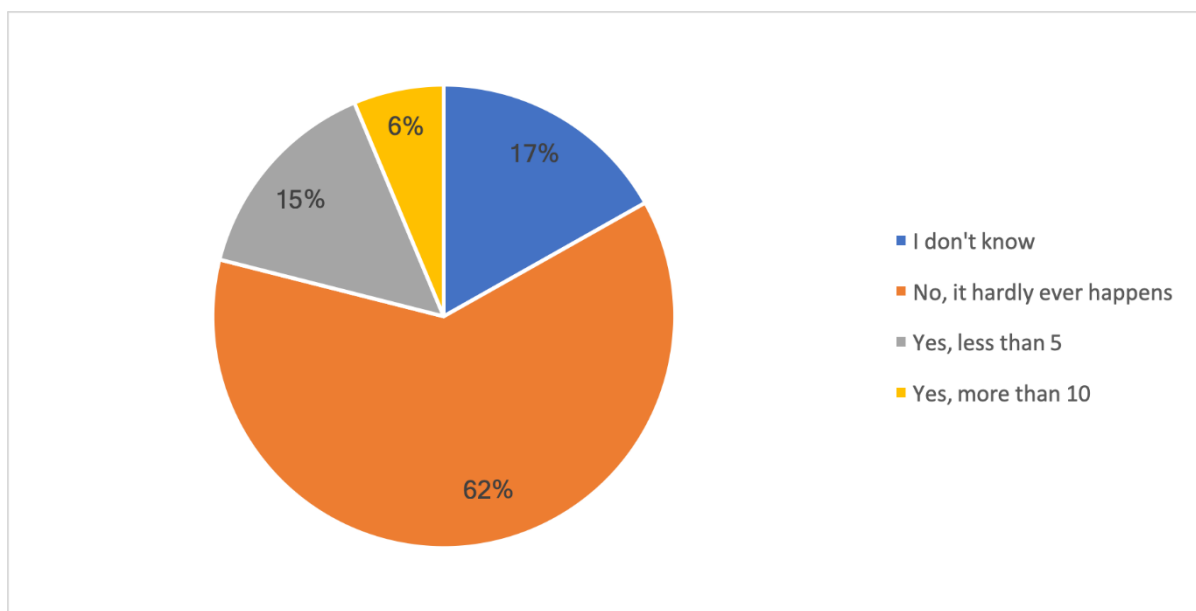
<sup>5</sup> These estimates were provided by the market committee. These figures were corroborated by interviews with government officials which revealed that when government councilors audited the central market, they found between 2 – 3x the number of vendors as indicated by revenue figures.

<sup>6</sup> The potential is estimated assuming that the central market is representative for all markets in Mzuzu and that the other smaller markets experience similar dynamics.

in place for tax collection, and they do not incentivize performance of tax collectors through monetary compensation, as the base salaries are low. 63% of tax collectors earn less than 300,000 MWK (\$300) per month. In the event of strong performance, tax collectors do not receive financial incentives. 93% of tax collectors responded that they have never received a 'commission' or bonus payment.

Additionally, there are few sanctions in place in the event of non-performance. As per Figure 7, 62% of surveyed tax collectors responded that tax collectors are hardly ever fired for poor performance. Figure 8 reveals that in the event of non-performance at most tax collectors tend to have an investigation into their performance or be relocated to a different revenue stream or location within the city. A large number (28%) stated that nothing happens. Where individuals have been identified committing fraud or pilfering funds, the ULGAs have also sometimes failed to follow through. A government official in Lilongwe was identified through the system to have embezzled several million, and yet no sanctions have yet been levied.

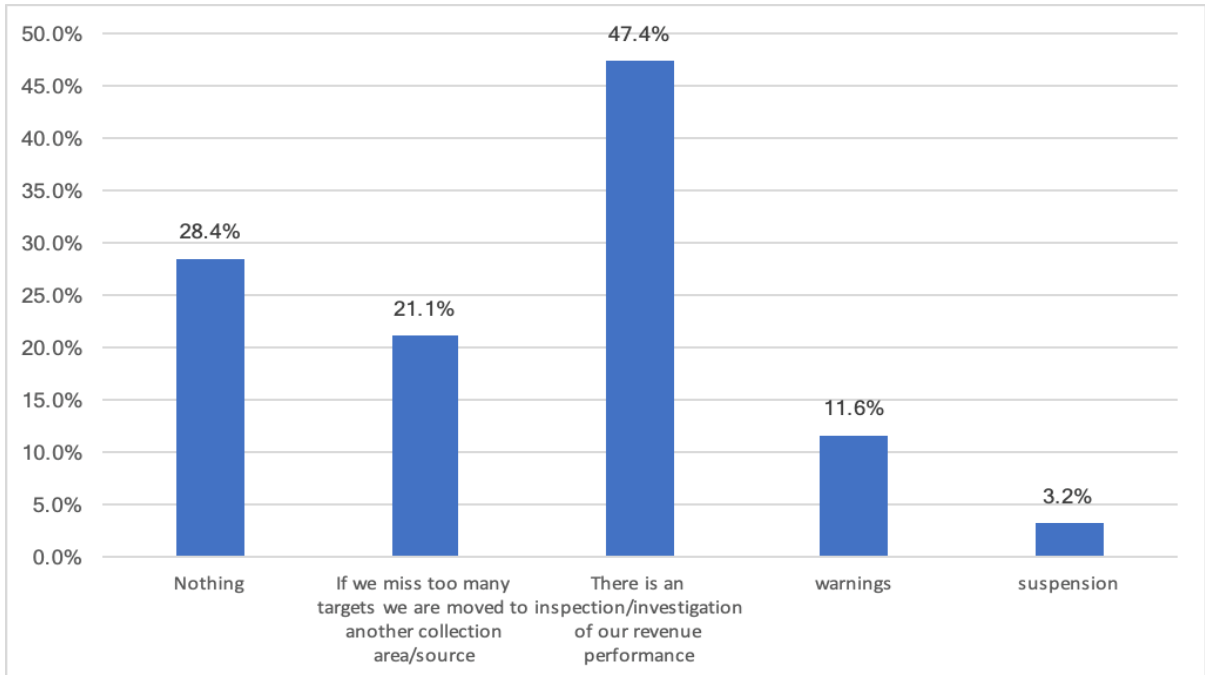
*Figure 7: Tax collector perception of the frequency of tax collector firing*



*Source: Tax collector survey*

The lack of tax collector management processes is paired with a poor perception of the integrity of tax collectors. More than 27% of surveyed taxpayers from markets, 24% from business licenses and 40% from city rates believe that more than half of the revenue from the respective revenue streams is lost due to corruption. Only 3% of respondents believe that no money was lost due to corruption from City Rates and Business Licenses. Only 8% believed that no money was lost due to corruption from Markets. These figures are likely understated given the sensitive nature of the questions. 52% of taxpayer survey respondents answered that technology should primarily be used to root out tax-collector embezzlement.

Figure 8: Tax collector perception of the consequences of non-performance

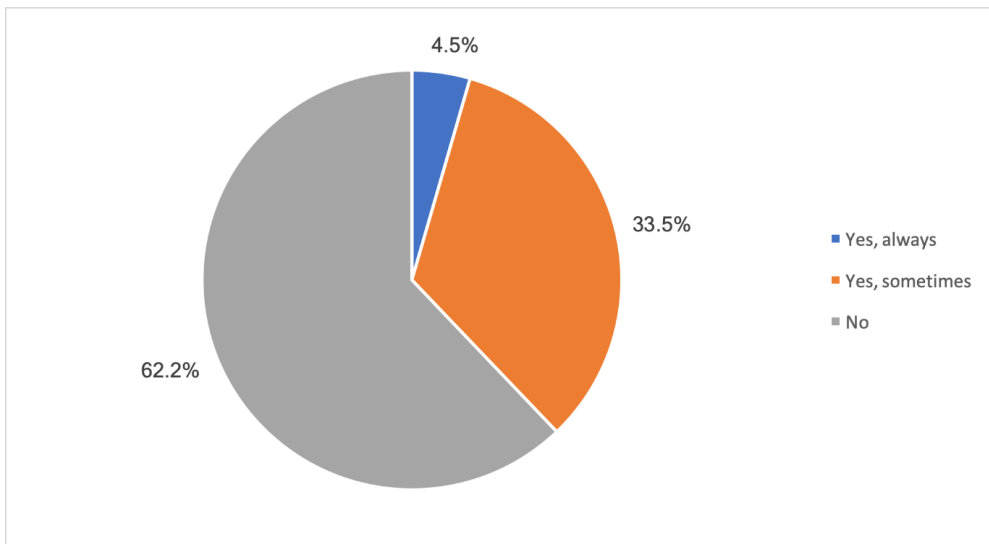


Source: Tax collector survey

### Voluntary Tax Compliance

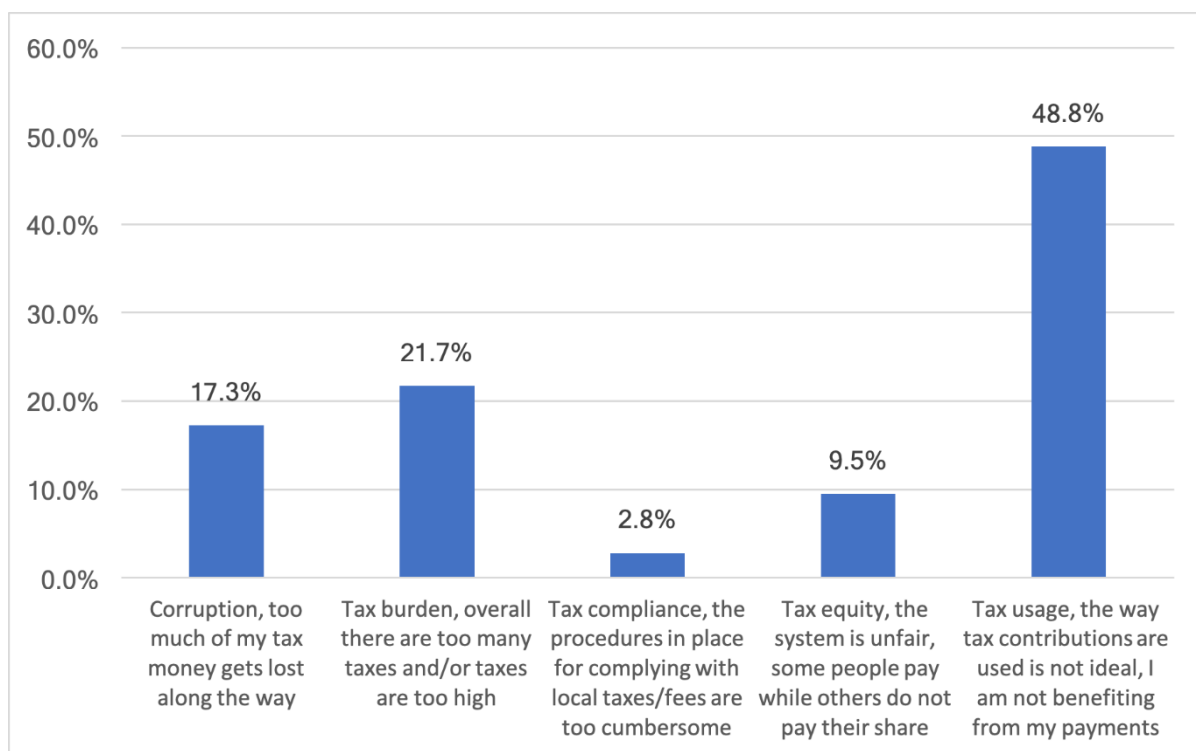
The taxpayer surveys reveal that citizens are quite skeptical about the proper and effective use of their tax contributions by the ULGAs. Figure 9 shows that 62% of taxpayer respondents did not think their tax contributions were being used well and a further 34% believed that tax contributions were effectively used “sometimes”. Only 5% of taxpayers were able to name a particular project that the city invested in. Similarly, when asking about the priorities for tax reform, Figure 10 shows that 49% of respondents were wishing for better tax usage, even more so than reducing the tax burden or reducing corruption.

Figure 9: Taxpayer perception of the usage of their tax contributions by the local government



Source: Taxpayer survey

Figure 10: Taxpayer prioritization of revenue administration reform needs



Source: Taxpayer survey

### Lack of authority to sanction non-compliance

A fourth important revenue bottleneck for cities is the authority of ULGAs to enforce tax payments. According to the interviews with government officials in Blantyre this has been the single largest bottleneck to improved revenue collection from city rates. For example, while the Local Government Act does allow the Council to take action against the owner and seize the property if the latter has not made any property tax payments for three consecutive years, the property owner only needs to make a small partial payment to avoid any further legal sanction. Furthermore, even if no payment is made after 3 years, the ULGA often needs to pass through a cumbersome court process before being able to take definitive legal action. These legal enforcement issues primarily relate to the large property owners however. When it comes to smaller commercial properties, the Councils are able to leverage Council by-laws and has in the past simply closed up shops until property taxes were paid.

### Overview of digitalization in Malawi

As per the evidence in the literature review, the use of technology is seen as a way to try and improve revenue administration. Digitalization of revenue processes in Malawi started in the late 1990s and has picked-up speed since. The most important technological change in relation to the revenue system of subnational authorities in Malawi took place in 1995 with the introduction of the Integrated Financial Management Information System (IFMIS) (Durevall and Erlandsson, 2005). IFMIS is defined as computer-based system that automates and stores key financial information in large organizations (see e.g. USAID, 2008). An IFMIS provides timely and accurate financial information and a standardised integrated financial management reporting system for managers within the government (Chene, 2009). The IFMIS reduces the workload of civil

servants and minimizes the room for error and fraud by automating processes and creating an audit trail of all transactions. Implementing and maintaining an IFMIS is, however, not a simple nor inexpensive task. According to the World Bank's evaluations, by the early 2000s, over 60% of its own IFMIS projects had not worked well (Durevall, 2005).

In Malawi, while the IFMIS was finished in 2003, it took a further few years for the system to be fully operational due to lack of political commitment to the reform as well as implementation problems (Durevall and Erlandsson, 2005). Significant hardware and infrastructure changes, as well as institutional changes, were required. This included 50 servers that all needed to be connected via separate Local Area Networks, and to the Government Wide Area Network (GWAN). It also required new power supply units and generators to cover for power outages, as well as extensive capacity building for government staff to operate the hardware as well as the actual software application (GoM 2003a, World Bank 2003a).

The IFMIS was finally rolled-out to the 36 local governments in 2009, but this process also took a few years with rural councils prioritized first. City Councils only started to use the IFMIS from 2015 onwards. The introduction of the IFMIS brought about significant improvements in reporting and the overall availability and transparency of revenue-related data. For all banked OSRs, receipts were manually uploaded into the IFMIS to provide a record of received funds. Monthly and yearly reports could then be generated to provide overviews of collected revenues and carry out analysis of, for example, actual versus budgeted revenues.

The introduction of the IFMIS was not without shortcomings, however. These included<sup>7</sup>:

- Lack of clear implementation guidelines and practices
- Weak application of the controls by individual users.
- Improper configuration of modules undermining functionality of the system, including: revenue collection, budget planner, budget consolidation, procurement management, asset management, human resource and payroll systems, and pension and social security systems. Improper configuration of audit functions was particularly problematic allowing for deactivation of audit trails, transaction reversals without corresponding evidence, fraudulent deletion of server data, lack of alert messaging in the event of data violations.
- Lack of an automated synchronization of bank accounts with IFMIS data, creating a significant need for manual uploading of receipts and preventing cities from generating audited accounts.
- Lack of an interface between the national and the local IFMIS leading to data discrepancies.
- Performance issues due to expiration of Microsoft licenses which prevented software updates.

As a result of some of these issues the ULGAs could not fully use the IFMIS for real administration of their OSRs. The OSR related data that is included in the IFMIS simply reflects the money that has been banked. However, this data is for

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<sup>7</sup> Evidence compiled from interviews as well as Durevall & Erlandsson (2005); Chene (2009); and Fölscher et al (2012).

the most part not used to inform demand notices, track liabilities, sensitize taxpayers nor to enforce compliance. Revenue officers have developed parallel systems on Excel to keep lists of businesses and large property owners that they use for tax collection purposes. Since the overall ownership of the IFMIS is with the NLGFC, issues of maintenance, integration etc. could also not be addressed directly by ULGAs and thus further strengthened the desire for local revenue management systems.

To gain greater control over digitalization and introduce updated technology as well as additional revenue collection related functions, various ULGAs separately decided from 2017 to introduce their own Revenue Management Systems (RMSs).<sup>8</sup> While at the national level, a new IFMIS is now being rolled-out it could take years before it reaches the local level. These systems were not to replace the IFMIS but rather work together with the IFMIS to bring additional benefits of technology to the management of OSR. In Mzuzu, this also built on an earlier RMS introduced by donors in 2013 that was used specifically to facilitate reform on city rates.

There was no overarching national push to adopt these systems or coordination in their roll out. The systems introduced were all customized to the respective ULGAs and provided by different vendors and thus differ somewhat. Nonetheless, they share certain characteristics. The systems introduced all provided cloud-based storage, integration with bank accounts, integration with the IFMIS, real-time payment data, audit trails, and increased reporting/analysis functions. In Mzuzu and Blantyre, the RMSs were also integrated with Geospatial data (GIS).

To test the system and processes, the RMSs were generally rolled out only for a subset of OSRs – including property taxes, business licenses and market fees. The digitalization of property taxes and business licenses entailed the provision of a platform for the administration of most processes. While previously a register of property and business owners, as well as their payments and liabilities, were kept in scattered Excel and Word documents, the digitalization process consolidated these registers into a single RMS database. The Revenue Management platforms would generally provide a user interface to fast-track the preparation, authorization and printing of demand notices and business licenses. Rather than having to fill in the details for each taxpayer individually and sending physical documents around the ULGA to attain the required signatures, the RMSs now allowed for automated, online population of documents, authorization processes and printing.

The RMSs also introduced additional analysis and reporting options where ULGAs could filter taxpayer data based on compliance, income, or arrears, etc. In some cities, the RMSs were designed to be integrated with the local banks in the future, such that tax payments made would automatically reflect on the RMSs system to allow for more accurate and timely monitoring of revenues. In the future, the RMSs were also to be directly connected to the IFMIS to allow for automatic reconciliations between both systems. The RMSs also introduced

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<sup>8</sup> Mzuzu actually introduced two RMSs. First it introduced the Revenue Mobilisation Programme (REMOP) in 2013. Since the REMOP software only helped to manage property tax revenues, the City Council in 2019 decided to introduce an automated revenue management system for all of the city's revenue streams.

additional audit controls, which in some instances removed the rights to edit payment related data altogether and created new options of defining user rights and accessing change logs, to monitor changes more closely to the data in the system.

Digitalization of markets entailed the introduction of a similar system as for property taxes and business licenses. Additionally, however, it was accompanied in all four cities with the installation of Point of Sale (POS) devices. These POS devices could be used to print receipts, replacing the manual writing of receipts by market ticket sellers (tax collectors at markets). The POS devices also led to the automated counting of the number of receipts issued and real-time data on the number of tickets distributed – as long as the POS devices had internet connectivity. They also allowed analysis of ticket seller behavior by providing insights on the frequency of tickets issued and POS down-time.

Figure 11 summarizes the timeline of digitalization across the four cities in Malawi, while Table 7 summarizes the extent of digitalization in each city across different revenue streams, while also specifying the model for the procurement of technology.

Figure 11: Digitalization timeline in Malawi

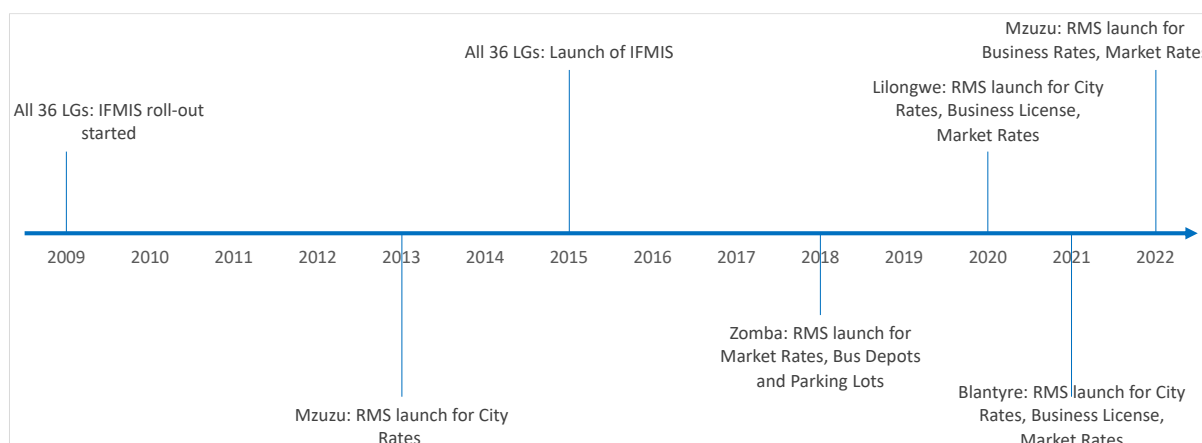


Table 7: Detail of Revenue Management Systems of Blantyre, Lilongwe, Mzuzu and Zomba

Location	Revenue Source	Model	Extent of Digitalization
Blantyre	City Rates	Build Transfer Operate, 15-20% of annual total revenue from the relevant OSRs operating on the platform for 7 years to Technobrain	<b>Medium:</b> automated printing of demand notices, analysis and report generation
	Business License		<b>Medium:</b> automated business license generation, audit trail, automated validation process, analysis and report generation, barcode validation
	Market Rates		<b>Medium,</b> 60 POS devices for 200 ticket sellers
Lilongwe	City Rates	Software License, 20% of	<b>Low,</b> report generation, compliance & payment analysis



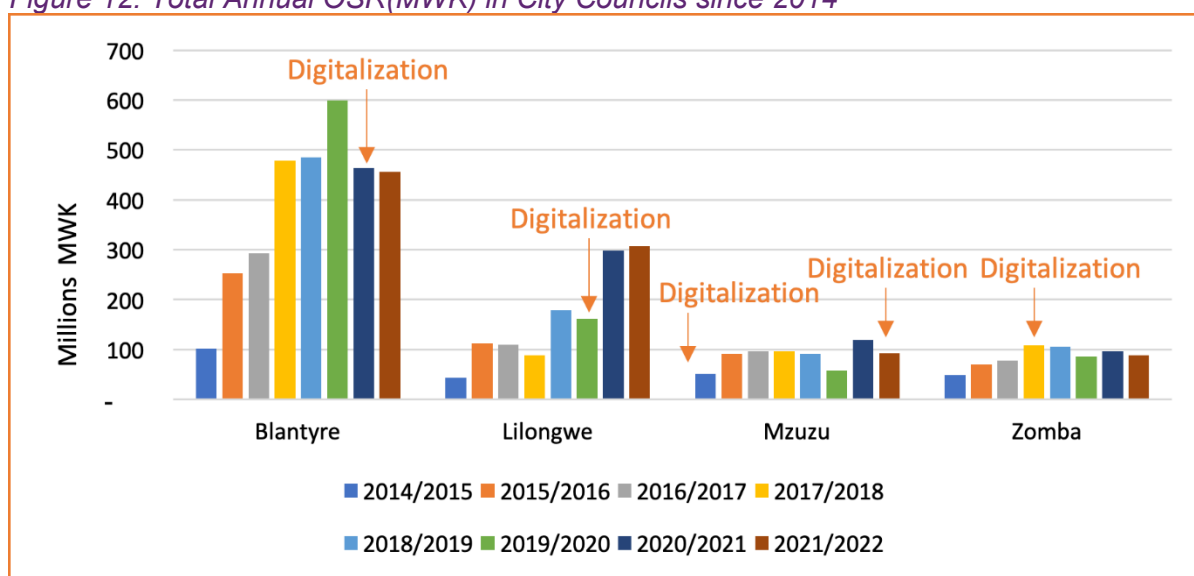
	Business License	the of annual total revenue from the	<b>Low</b> , RMS used to populate and print the annual business certificate only.
	Market Rates	relevant OSRs to be managed by software vendor (Nitel) for the duration of 5 years	<b>Medium</b> , 40 POS devices for 90 ticket sellers (50 devices were not given)
Mzuzu	City Rates	The REMOP was introduced for City Rates, provided by donors.	<b>Medium</b> , Location data with GPS coordinates, calculate tax liabilities, generate customer demand notices, new points-based computer-aided mass valuation (CAMV) system. The demand notices would then be distributed via the mail but following taxpayer complaints manual distribution was re-introduced, using around 20 municipal staff <sup>9</sup> for a period of two months to distribute the demand notices.
	Market Rates	ARMS Software License, 15% of the of annual total revenue from the relevant OSRs to be managed by software vendor Technobrain (markets only)	90 POS devices were brought for the central market
Zomba	Market Rates	Software License, 3% of the of annual total revenue from the relevant for OSRs to be managed by software vendor Nitel (markets only).	<b>Medium</b> , 40 POS devices for 50+ ticket sellers

<sup>9</sup> These officials would not be officially employed by the Finance/Revenue departments but are just city officials with spare time from other departments.

## OSR performance and digitalization

When looking at all four Malawian cities, OSR increased rapidly from 2014 to 2018 and then (with the exception of Lilongwe) started stagnating from 2018 onwards, as seen in Figure 12. This section explores what drove these increases and stagnations, including with the impact of digitization. Since the RMSs were often introduced alongside numerous other reforms, and during the Covid-19 pandemic, understanding the impact of digitalization requires more granular analysis. Additionally, the financial year of 2021/22 only lasted 9 months, ending in March rather than lasting 12 months as usual from July to June. This was due to a change in financial year end policy by the government from July to April.

Figure 12: Total Annual OSR(MWK) in City Councils since 2014



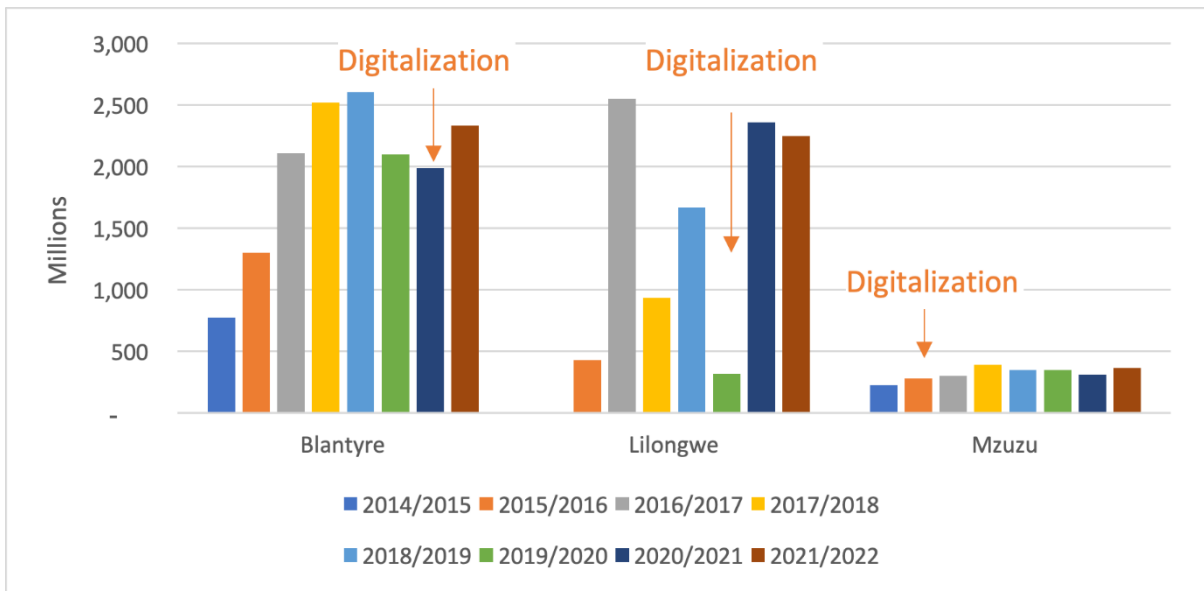
Source: budgets and annual reports from ULGA's and NLGFC

### City Rates

When looking at City Rate revenue in the Malawian cities (Figure 13)<sup>10</sup>, on average we observe that revenues increased between 2014 and 2017/18 in all three cities. At the time of the Covid-19 pandemic, revenues tended to decline. However, there is significant variation in these patterns between cities which is explored below. Overall, there is no indication that digitalization in the form of the RMS had a significant impact on revenue collection for city rates. However, the use of GIS technologies to identify properties in certain cities is likely to have increased the tax base at lower expense. Additionally, particularly in Blantyre, this property identification is likely to show increases in revenue collection further in the future.

Figure 13: City Rate Revenues for Blantyre, Lilongwe and Mzuzu (in MWK Millions)

<sup>10</sup> Zomba was left out here, as the RMS installed in the city did not include city rates.



Source: budgets and annual reports from ULGA's and NLGFC

In **Blantyre**, city rates increased steadily between 2014/15 and 2018/19, after which they dropped for two years before increasing slightly again following digitalization. Revenue officials suggested that the dip between 2019/20 and 2020/21 was due to the Covid-19 pandemic, which caused a decline in incomes and voluntary tax payments. The RMS was introduced in 2020 and assisted with the printing of demand notices, automated analysis, and report generation. In August of 2021, there was also a large expansion in the tax base due to the (largely manually) updated Quinquennial Valuation Roll (QVR) (from 46,000 to 71,000 properties). Although revenues have begun to increase, according to government officials, compliance has decreased from 70% to 20% - both due to new taxpayers who are not accustomed to paying being included on the roll and the higher tax rates, which have resulted in higher numbers of people contesting their bills.<sup>11</sup> A longer time horizon is needed to understand the real impact of these reforms on revenue collection.

In **Lilongwe**, the revenue from city rates increased between 2014 and 2018, with a bumper year in FY 2016/17 following the roll out of an automated financial management system in 2016 (before the RMS launch) which enabled more accurate reporting for that year. Revenue decreased in 2019/20, the year that the RMS was introduced and the year that the city was struck by election demonstrations that led to frequent business closures. It rebounded again in 2020/21, although decreasing slightly in 2021/22. In Lilongwe, it is unlikely that any changes in revenue collection were a direct consequence of digitalization, as the RMS system changed little in how the overall administrative processes for city rates functioned. The printing of demand notices continued to be done manually. Billing, sensitization, and follow-up of taxpayers was still done via the city's two debt collectors and three interim debt collectors, rather than via a digitalized communication mechanism. The RMS was primarily used to generate reports and carry out compliance analysis, simply replacing the prior Excel-based process.

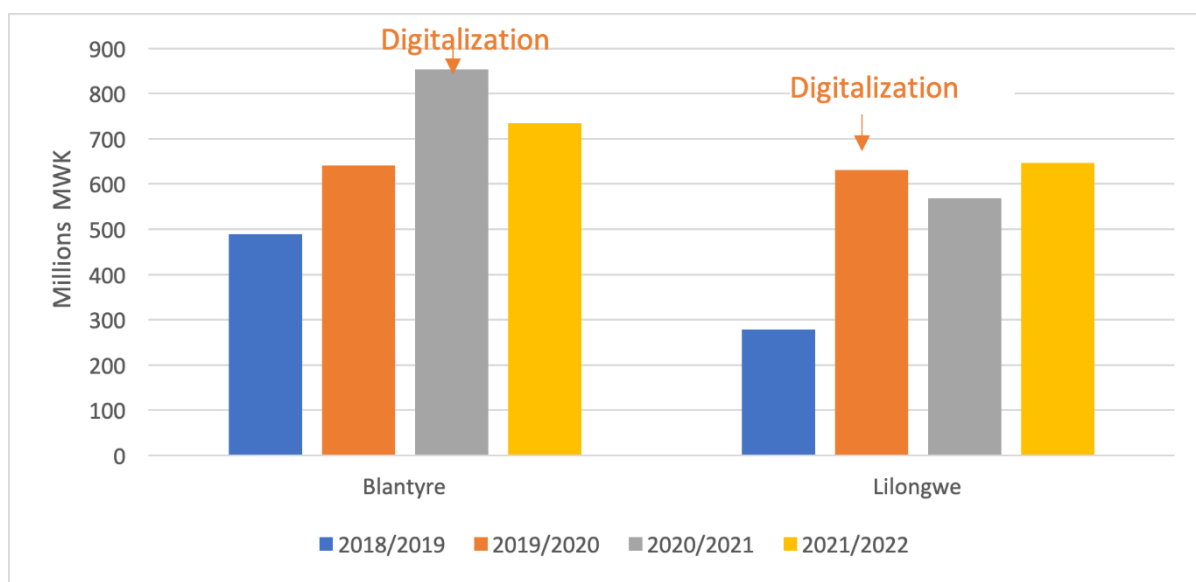
<sup>11</sup> Since the land values had increased very substantially in the new QVR, the tariffs were lowered to minimize increases in tax liabilities. The tariffs were set such that the highest increments were 30%.

In **Mzuzu**, the digitalization of City Rates took place in 2013, much earlier than in the other cities, and under a specific donor funded programme – REMOP. Revenue increased significantly in the years following this reform - from MWK 50 million (US\$ 68,000) in 2013 to over MWK 350 million (US\$ 478,000) in 2018 (Delbridge, V. Harman, O. and Jangia, D, 2020). This was largely due to the increased identification and revaluation of properties alongside the digitization of most administrative components. The REMOP software was particularly helpful in safely storing taxpayer data, calculating tax liabilities, and generating demand notices. The demand notices were also initially automatically dispatched via SMS. But following taxpayer complaints that the notices were never received, manual distribution was re-introduced via the City’s 8 debt collectors.<sup>12</sup> The REMOP reform was ultimately not successful long-term due to concerns around the legality of the valuation method used. The valuation, therefore, could not continue to be used in subsequent QVR updates, and the effects began to taper off from 2018 (Delbridge, V. Harman, O. and Jangia, D, 2020). Revenues also experienced a dip in FY2020/21, largely due to a drop in compliance caused by the onset of the Covid-19 pandemic.

### Business License

When looking at Business License revenue in the Malawian cities (Figure 14),<sup>13</sup> there is a similar pattern of revenue increases then decreases in later years. In Lilongwe, decreases were in 2020, in line with the pandemic. In Blantyre, revenue decreased later, in 2021. Revenue decreases in all cities largely coincided with the time of RMS introduction, possibly due to needing to adjust to a new system. A long-term analysis accounting for other changes is important to understand the impact of the new technology.

Figure 14: Business License Revenue (in MWK Millions)



Source: budgets and annual reports from ULGA’s and NLGFC

<sup>12</sup> These official debt collectors would often be assisted for a period of 2 months by some other 20 municipal staff to distribute demand notices. Once these had been distributed the debt collectors would carry-out sensitization and follow-up to ensure payment.

<sup>13</sup> Zomba and Mzuzu were left out here, as the RMS installed in the city did not include business licenses at the time of the research.

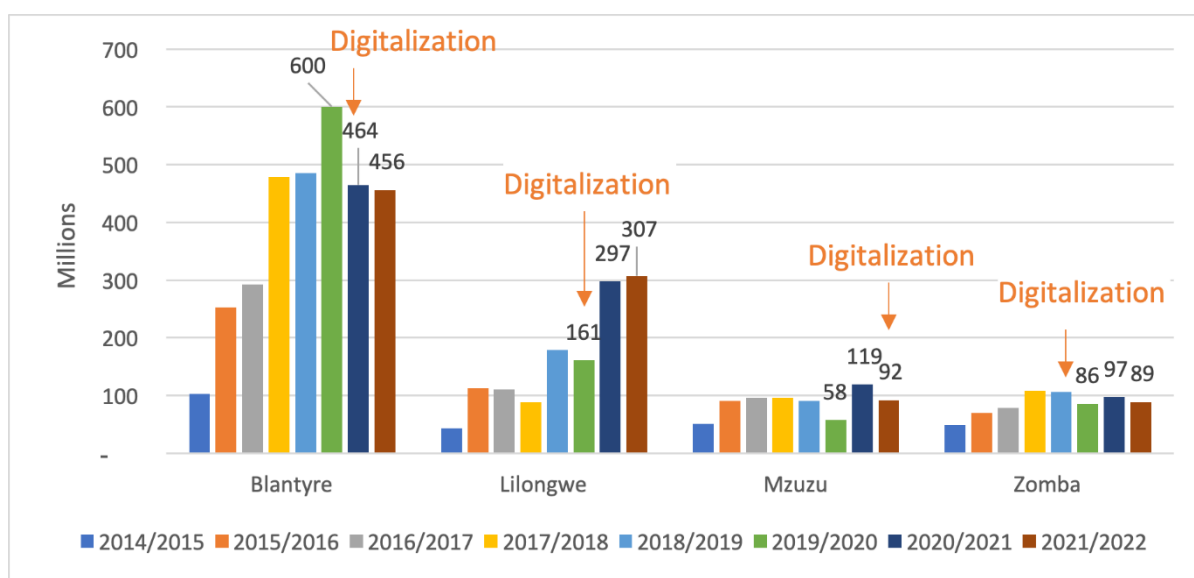
In **Blantyre**, revenue from Business Licenses increased steadily from 2018/19 until 2020/21. According to the City Council these increases were primarily the result of improvements in the management of tax collectors and the additional registration of new businesses. The City Council registered around 1000 new businesses each year, thus significantly expanding the tax base reaching a total of 9600 businesses in FY20/21. In the year of digitalization, revenue slightly decreased. Although, this may be the result of the shortened financial year of 2021/22<sup>14</sup>. Government officials noted that the RMS proved particularly helpful in speeding up administrative processes, specifically license generation and authorization. A digital bar-code introduced on every license also helped with compliance by allowing the assessment of license authenticity.

In **Lilongwe**, revenues stayed relatively constant and slightly below the large increase between 2018/19 and 2019/20. According to the relevant government officials working with business licenses, the RMS has not brought about significant improvements since they are only used to populate and print the annual business certificate. All other administrative functions around the business license are not conducted via the RMS.

### Market Rates

For market rates (Figure 15), an annual comparison is particularly challenging because the financial year 2021/22 only consisted of 9 months. Unlike with Business Licenses or City Rates where only one annual payment is needed, market rates are paid daily. Therefore, a 25% reduction in the length of the year will likely result in a concomitant reduction in overall revenue. Month by month comparisons are needed to get better insights.

Figure 15: Market Rate Revenue (in MWK millions)



Source: budgets and annual reports from ULGA's and NLGFC

In **Blantyre**, market revenues increased until 2019/20. In Q1 2021, around 60 POS devices were introduced to markets for around 200 tax collectors. Despite the various issues in the relationship between the City and the software provider,

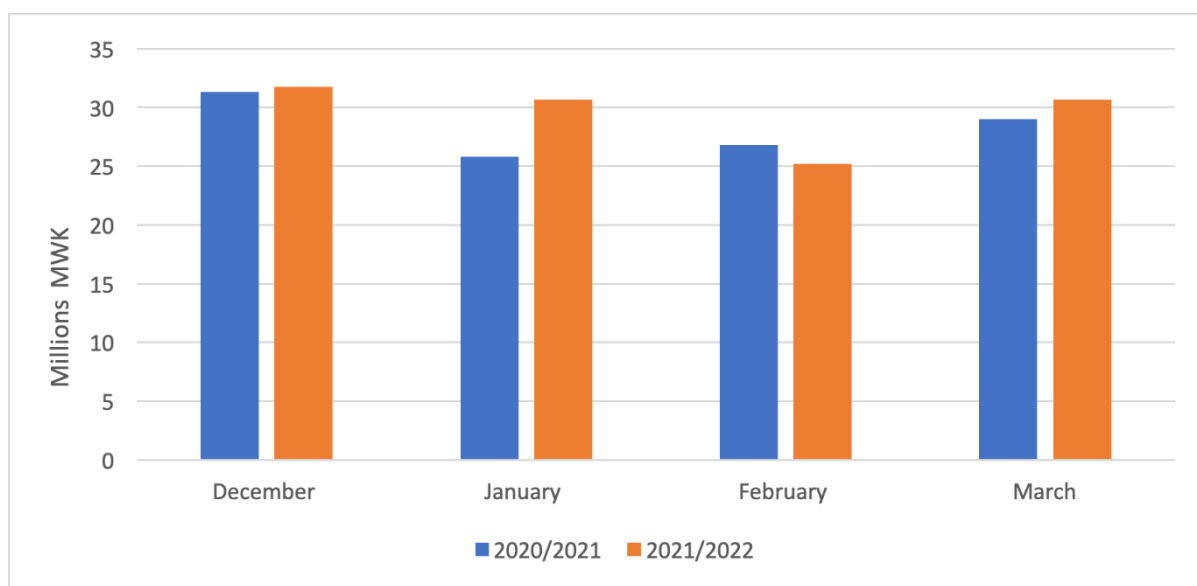
<sup>14</sup> The financial year of 2021/22 lasted only 9 months and ended in March rather than lasting 12 months as usual from July to June. This was due to a change in financial year end policy by government from July to April.

the actual revenues for markets increased slightly initially. However, as the dispute over the performance and functionality of the software between the city and the software provider came to a loggerhead, the agreement was put on hold, and revenues decreased from November onwards.

In **Lilongwe** there was a substantial increase in absolute revenue collected from markets in 2020/21. This coincided with the introduction of the RMS and 40 POS devices. These POS devices were shared among 90 ticket sellers at Lilongwe’s main market. However, it also coincided with increased market fees for market vendors. There is insufficient data to understand which of these drove the significant increases in market revenue.

In **Mzuzu**, the new RMS and POS devices were only in use from December 2021, so the period of observation is very short. When looking at a month-for-month comparison in revenue in Figure 16, there is a slight increase in absolute revenue collected from markets in all months apart from February when comparing to similar months from the previous year.

*Figure 16: Mzuzu Monthly Market Revenue comparison 20/21 vs 21/22*



*Source: budgets and annual reports from ULGA’s and NLGFC*

In **Zomba**, the software vendor supplied around 15 POS devices to the City Council alongside an RMS in 2017, after which revenues increased substantially. Since there were more tax collectors than POS devices initially, the devices were shared amongst tax collectors. Over time, a few of the POS devices were damaged, and from 2019 onwards, the City Council stopped using the POS devices, which aligns with a decrease in revenue collection. POS devices were slowly reinstated in 2021, but by Q1 of 2022 only a handful of POS devices were being used. Given the short financial year of 2021/22, it is unclear whether this slow re-introduction has started to impact on increasing collections again.

### **Views from stakeholders on impact of digitalization**

Given the short time frame since the introduction of RMS’s and POS devices, the lack of full integration, and simultaneous introduction of other reforms, it is difficult to assess their impact on revenues collected. There are also benefits that go

beyond increased revenues, such as improved operations and efficiency. It is therefore important to assess the views of key stakeholders on the successes, challenges, and opportunities. This section discusses the findings from interviews with government officials and surveys with taxpayers and tax collectors.

## **Government Officials**

### **Benefits of RMSs**

According to the government officials the benefits of the RMSs were primarily operational in nature. Prior to the introduction of the software, business license and city rate demand notices had to be populated using Microsoft Word, printed and then physically moved from door to door, to gain authorization from various people in the local government. Processing a single business license could take weeks. Following the introduction of the software, licenses could be automatically populated using taxpayer data in the system and virtually sent to the relevant authorizers for approval electronically. An audit trail function could also be used to disincentivize the tampering of valuations (e.g. by categorizing a business in a lower tax grade). By creating a data repository, that was at least in theory difficult to tamper with the cities would also be able to disincentivize against the payment of bribes – since payment of bribes would not prevent arrears from accruing. The new process was thus quicker, less prone to human error and able to disincentivize malpractice according to government officials.

A second improvement which was particularly appreciated was the **barcode** feature, which was introduced for Business Licenses, which could be scanned by tax collectors to verify the authenticity of the license and instantly determine outstanding tax liabilities. According to government officials, this greatly facilitated the task of enforcing business license payments, and eliminating fraud of fake licenses.

A third benefit which was commonly highlighted was associated with the **introduction of POS devices**. Whereas previously market rate collectors (ticket sellers) were writing manual receipts, which could be easily counterfeited, now with the POS devices market tax-collectors were issuing electronic receipts. In consequence, it is easier for market tax-collectors and/or revenue inspectors to verify whether indeed every market vendor has paid the daily fee.

Furthermore, tax-collectors could be held accountable to every ticket that they have printed at the end of the day and needed to be able to deliver the equivalent amount to the 'market master' who would then collect all daily revenues and eventually bank these to the government accounts. The POS devices are linked to the RMS so government officials could monitor in real time the performance of various POS devices and for instance assess POS down-time to reveal tax collector malpractice. Preventing malpractice from tax-collectors was indeed mentioned to be one of the key reasons for the introduction of RMS in the first place.

### **Challenges with RMSs**

In speaking to government officials, one of the most frequently mentioned challenges was the fact that **existing capacities** within the revenue administration were insufficient to allow for smooth implementation of new technology. Officials would speak of the **limited training** of tax collectors and

revenue officials, which would lead to misuse of POS devices, lack of adherence to proper processes and misuse of new and more complex digital systems.

Some conversations revealed that tax collectors and revenue staff were not always in favor of the new technology and that the **new technology was not deemed sufficient to prevent malpractice and fraud**. An official from Lilongwe mentioned that the POS devices worked very well, but that the tax collectors misused the devices *on purpose* hoping to prevent the new system from working. To an official from Mzuzu minimizing this type of fraud was difficult since *“anywhere where there are human beings, they will find a way to make the system fail”*.

There were numerous reports of fraud where tax data on the servers was changed or where tax waivers and business licenses were wrongly authorized to greatly reduce taxpayer liabilities. In some instances, the audit trail of the RMSs was switched off to cover for fraudulent practices, or user rights were shared among employees to prevent the tracking of individual malpractice. An official from Blantyre suggested that internal processes and incentive issues would need to be fixed before digitalization could really succeed. He claimed that *“you cannot start a digital system without first having a functional manual system”*.

Another set of issues mentioned by the officials revolved around **concerns with the software provided by RMS vendors**. Many officials mentioned that systems were very slow and did not live up to the performance requirements communicated to the software vendor. Systems also often experienced synchronization and accounting errors. In Blantyre, the arrangement with the software vendor was eventually put on hold after the revenue figures from the RMS simply did not tally with the city’s accounting system.

There were also **hardware failures**. Some cities also reported issues with the configuration of POS devices, which would lose internet connectivity, or simply break-down. There also simply were not enough POS devices. None of the cities at the point of this research had bought sufficient POS devices to allow *all* market ticket sellers to use their own POS devices, which thus resulted in a mixture of manual and digital processes, and the sharing of POS devices among ticket sellers, undermining accountability of tax collectors and leading to practices such as advance ticket printing which further confused the accounting systems.

Another set of issues resulted from the **lack of integration of the RMS with adjacent systems and processes**. While the RMSs were technically designed to be synchronized with the IFMIS, mass communication systems and bank accounts, this integration had not been achieved in any of the 4 cities by the time of this research. As a result of this lack of integration, payment receipts needed to be uploaded separately to the RMS system as well as the IFMIS, creating time consuming duplication of efforts and error-prone processes. In Zomba, the uploading of receipts from the POS devices to the IFMIS overwhelmed the existing workforce and led to a delay in the overall uploading of receipts such that by March of 2022, receipts from 2018 had still not be uploaded and ever since has prevented proper accounting reconciliation. This obviously delayed production of final accounts for timely auditing.

A final set of issues surrounded the **interaction with the RMS vendors**. Many cities cited dissatisfaction with the fact that RMS vendors took longer than



expected to deliver the software, that the cost of running the systems was often very high (as high as 20% in some cities), and that the cities had insufficient control over the systems. Some officials lamented that any changes to the system or to back-end data required interventions from the RMS vendor and thus created significant dependency on the software vendors. Disputes over such issues in Lilongwe and Zomba led cities to halt agreed payments which in turn led software vendors to stall on maintenance and bug fixing which put significant pressure on relations with the software vendor and ongoing use of the technology.

### **Software Providers**

The software providers, to some extent, tried to reflect some of the blame they were given by government officials. The Blantyre RMS vendor pointed out that there were a few bugs in the software that had been delivered but that these were worked in a responsive manner. They pointed out that there was a whole team of four developers in Blantyre working on any issues that would come up with the software or any additional functionality that the city would want to add. According to them, 70% of the issues were user related, and only 30% of the issues were to do with the technology itself.

The RMS vendors pointed out that the cities had opted for cloud-based solutions over local-server options, to enhance the accessibility and security of data as well as reduce costs of acquiring local servers. To effectively operate cloud-based systems, the cities however needed to ensure sufficient internet bandwidth at local government offices. Upon roll-out of the system some cities thus needed to upgrade their internet connectivity, which delayed and/or undermined overall system roll-out. In Blantyre, it took the city 7 months to install sufficient bandwidth to meet the system requirements.

The RMS vendors also pointed out that the provision of internet connectivity for the POS devices was a responsibility of the City Councils not the RMS vendors. Cities had agreed to provide connectivity (usually via a mobile sim card) to ensure the real-time synchronization of these devices with the RMS system. The problem seemed to be that either the sim cards were loaded with too little data to remain online for the full day or that ticket sellers were exchanging the sim cards and use the data for other purposes.

The issues around integration of the RMSs with surrounding systems, according to the RMS vendors, was not in their hands. To integrate the RMS with the IFMIS there needed to be authorization and cooperation with NLGFC. In Mzuzu this authorization had been requested at the start of the project but was only received 18 months later, causing delays in the processing of the feature. Integration with the banks and or mobile money providers also required the cities to reach agreements, which were largely still pending.

An explanation provided by all RMS vendors on implementation challenges had to do with “politics” according to them. One RMS vendor mentioned that “there are a lot of stakeholders that are against the success of the system”, and an unwillingness to cooperate from certain officials unless there were direct incentives for them. They also pointed out that the most significant pushback was received from the IT team of the local government, which wanted control over the system and the data.

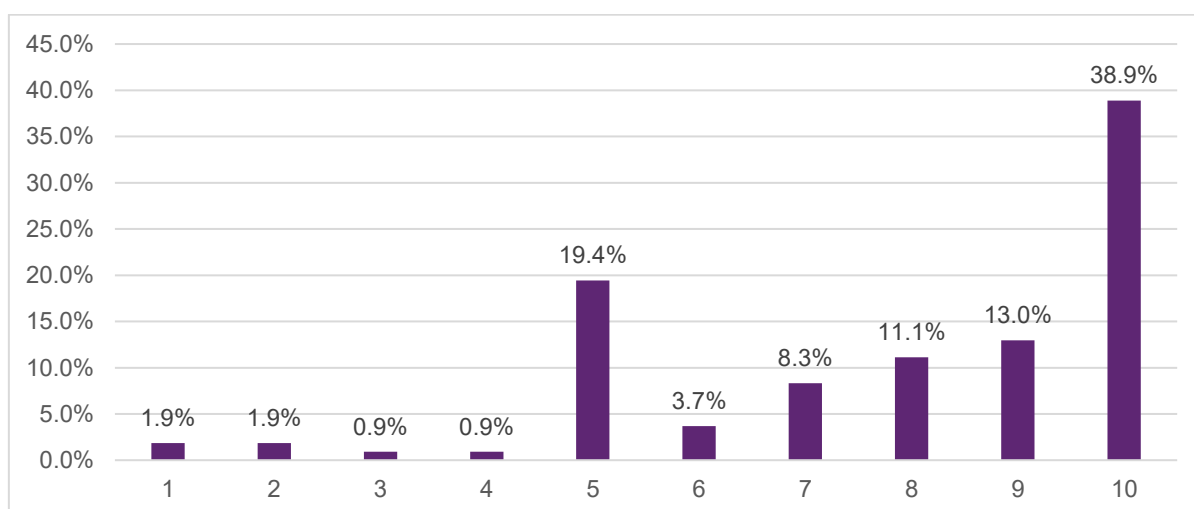
## Tax collectors

108 tax collectors were sampled, with 37 in Blantyre, 29 in Mzuzu, 23 in Lilongwe and 19 in Zomba. 38 collected city rates or business licenses, 48 collected from markets and 22 from other sources, such as parking fees (these were mainly in Blantyre and Zomba). Most collectors were in the age range of 30 to 60. In terms of education, 70% of collectors had at least a Malawi school certificate, with around 28% having a diploma or a degree.

Over 90% of tax collectors are employed by the City Councils, with the few independent collectors mostly in Lilongwe and Zomba. Most collectors (63%) earn between 100k MWK and 300k MWK per month, equivalent to a teacher for primary school, with a quarter earning less - between 70k MWK and 100k MWK per month.

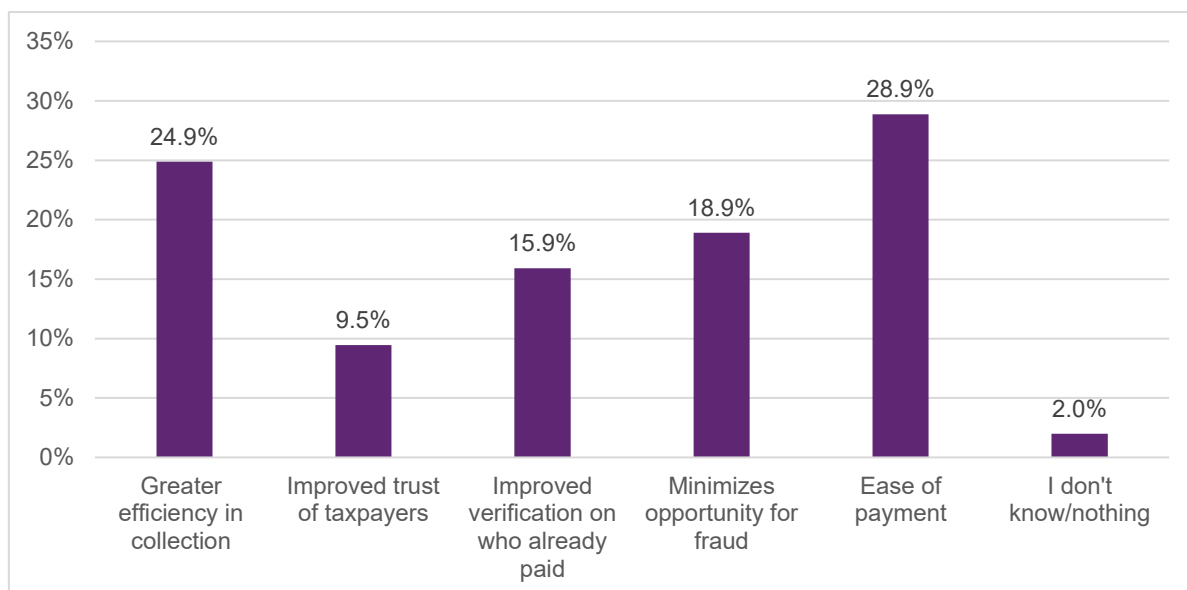
According to the survey results shown in Figure 17, most tax collectors are strongly pro the use of digital technologies to improve collection (6 to 10 on the scale), and only around 20% are indifferent at point 5 on the chart. As seen in Figure 18, the main benefit listed was ease of payment, followed by more efficient identification. Some also reported that it reduces opportunities for pilferage, and it helps to verify who has paid.

*Figure 17: Tax collector view on scale of 1 (bad) to 10 (good) the usefulness of digitization*



*Source: tax collector survey*

Figure 18: Tax collector view on the benefits of digitization for tax collection



Source: tax collector survey

The main disadvantage reported was the cost of the technology, and second was that it made management of tax collection more complicated given the need to adapt to new processes. Some also said it doesn't solve the real underlying challenges of revenue collection.

A majority of tax collectors (68%) reported that they received comprehensive and sufficient training on the usage of POS devices. 17% of tax collectors responded that they did not receive much training, but that they also did not require it. 15% responded that they received training but that it was not adequate.

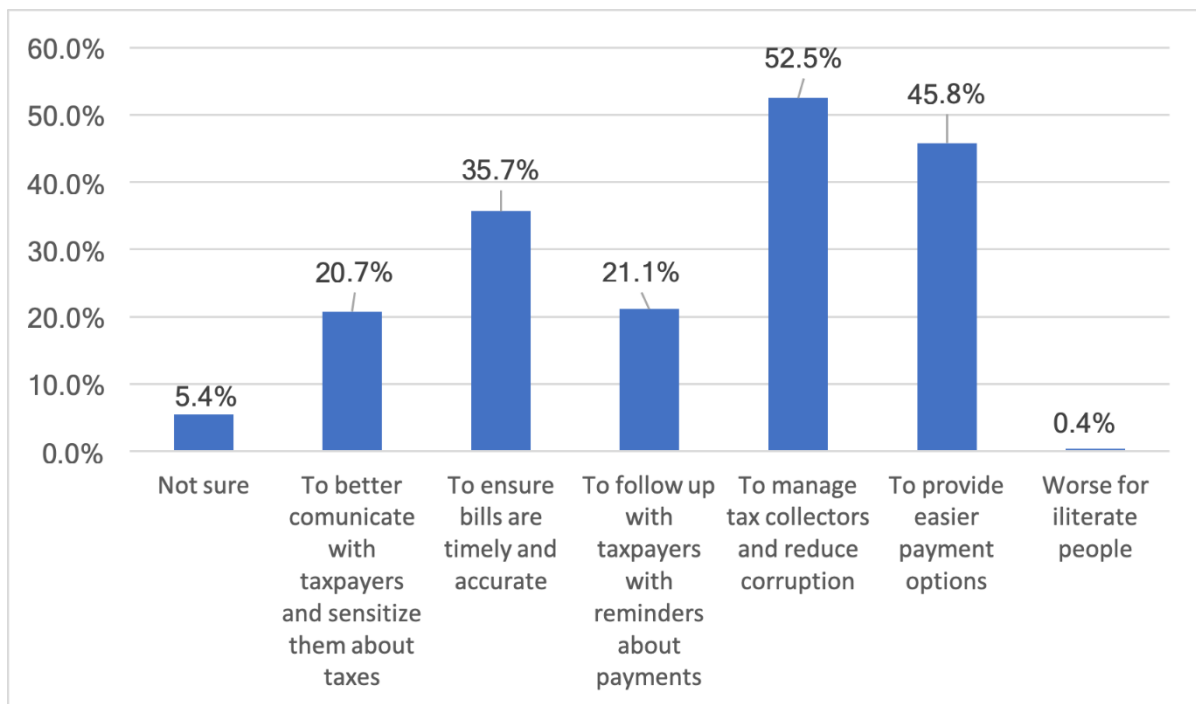
### Taxpayers

A total of 530 people were interviewed from the four cities – 205 in Lilongwe, 167 in Blantyre, 83 in Mzuzu, and 75 in Zomba. 85% of respondents say that they support the use of digital technologies overall, while 11% were indifferent. Only 4% say they don't support the use of digital technologies. There is thus strong support for the use of technology from both taxpayers and tax collectors.

Unlike tax collectors, the key benefit that most taxpayers see from the use of digital technologies is improved management of tax collectors and reduced corruption. However, this is closely followed by the fact that it makes payment easier, and billing becomes timelier and more accurate, which is a sentiment shared across both groups. This is shown in Figure 19.

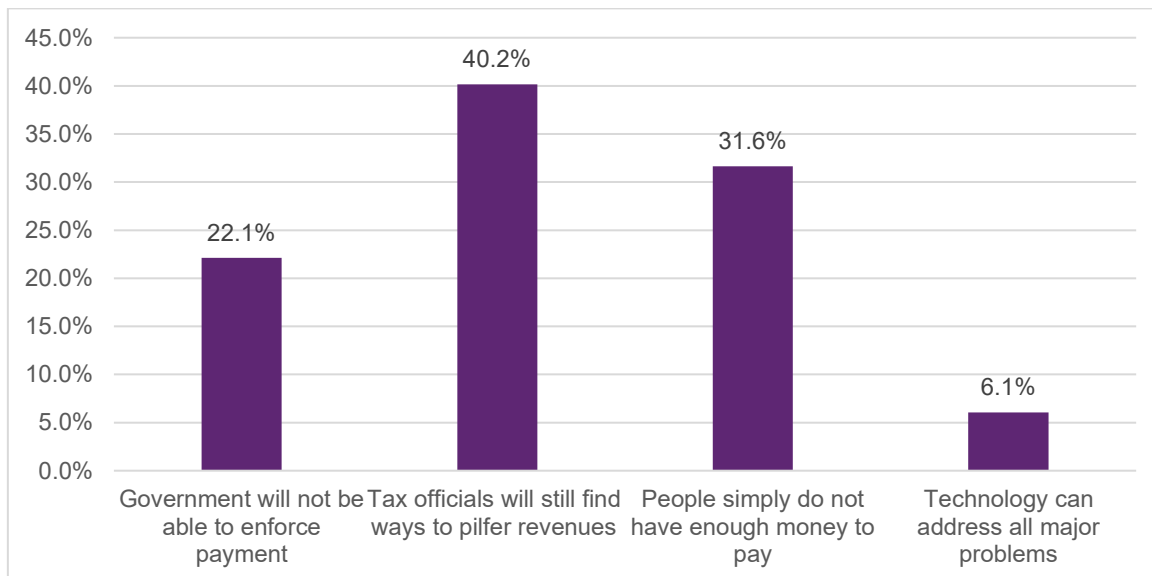
However, as per Figure 20, very few respondents think technology solves everything. While it may reduce some avenues for pilferage, many respondents think that tax collectors will find other avenues to pilfer. Another key issue that technology cannot solve is that people cannot afford to pay. Many also believe that technology won't solve the issue that the City Council struggles to enforce payment.

Figure 19: Taxpayer perception of where digitalization is most needed in regard to tax administration



Source: Taxpayer survey

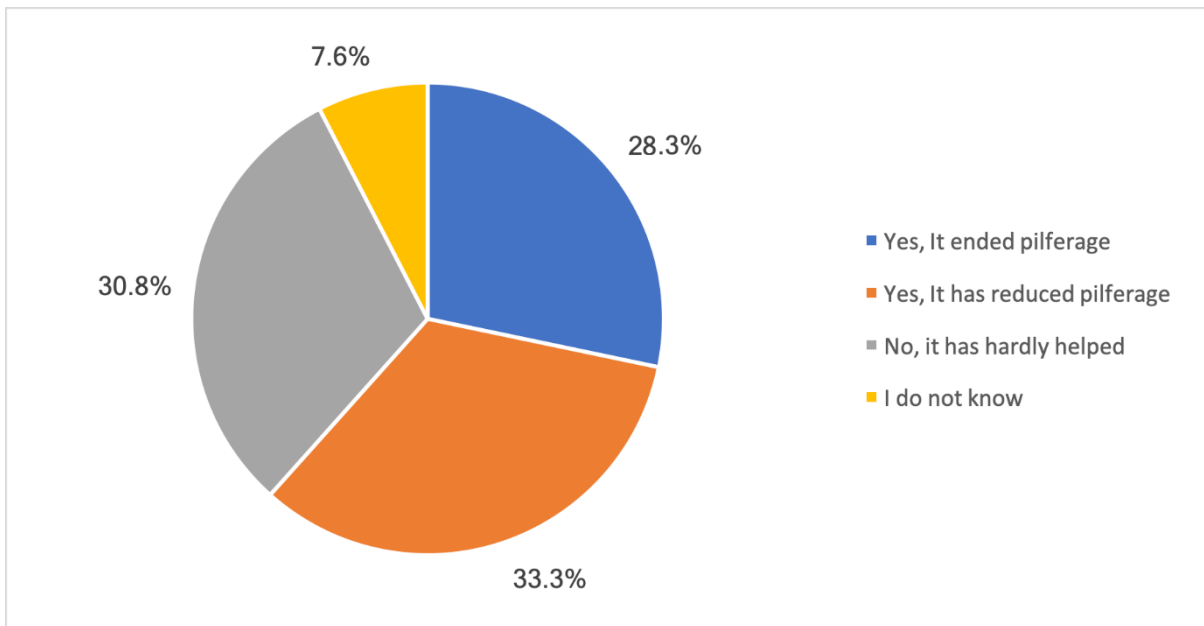
Figure 20: Taxpayer view of the problems that digitalization cannot address



Source: Taxpayer survey

As seen in Figure 21, there is roughly an even split of opinions when it comes to whether digital technologies have reduced pilferage. 31% say it has hardly helped (mostly in Mzuzu), 28% say it has brought an end to pilferage (mostly in Blantyre), and 33% say it has reduced pilferage but it is not enough (mostly in Lilongwe).

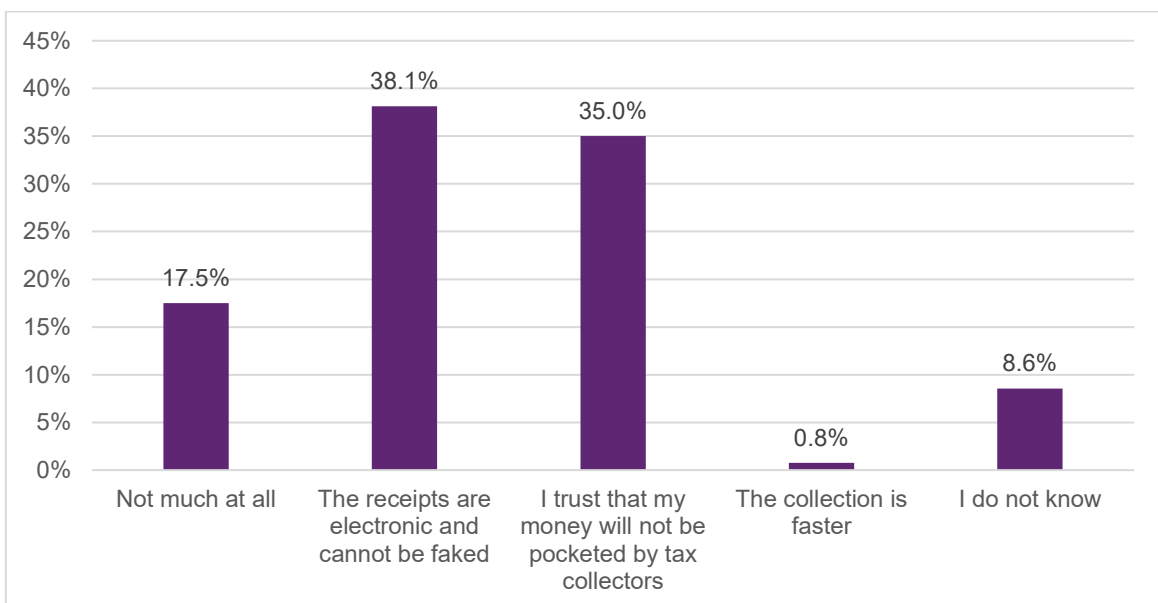
Figure 21: Taxpayer view of the impact of digital payment options on opportunities for pilferage



Source: Taxpayer survey

Figure 22 shows that for market rates, 38% say that the introduction of POS devices have improved the fact that receipts cannot be faked, and 35% say that they have more trust that their money won't be pilfered. 17.5% also say that not much has changed.

Figure 22: Taxpayer view of the impact of POS devices on collection of market rates

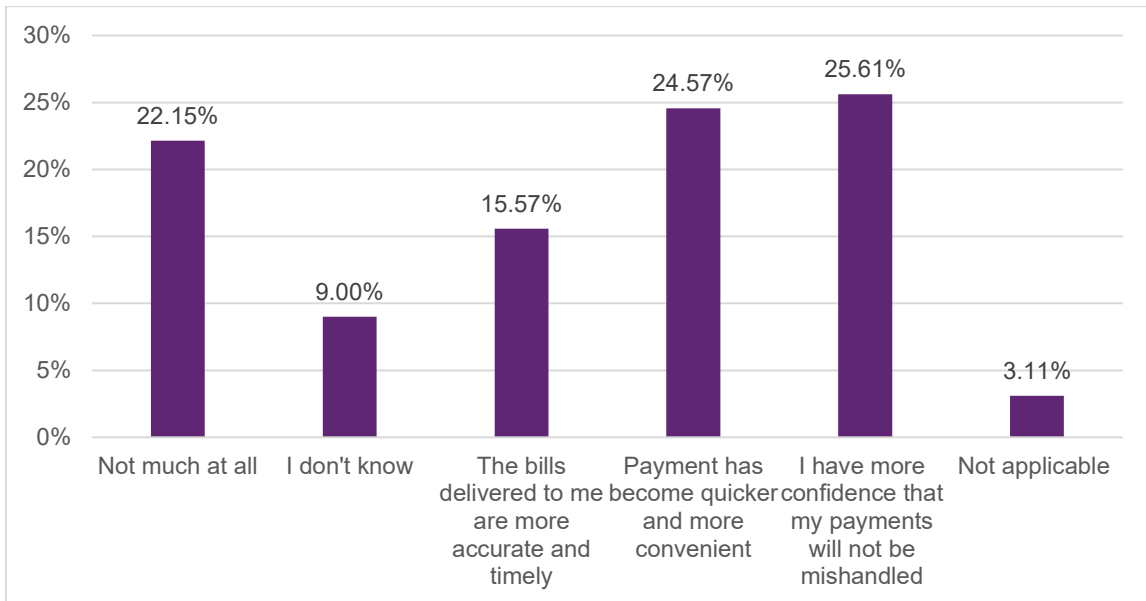


Source: Taxpayer survey

For business licenses, 43% of people are not aware of any technology that has been introduced to improve it. Only a handful mentioned electronic receipts, billing and payments. However, as shown in Figure 23, 26% said they since the introduction of these electronic processes, they were more confident that payments would not be mishandled, 25% thought payments were quicker and

16% said that billing was more accurate and timelier. 22% said that not much had changed.

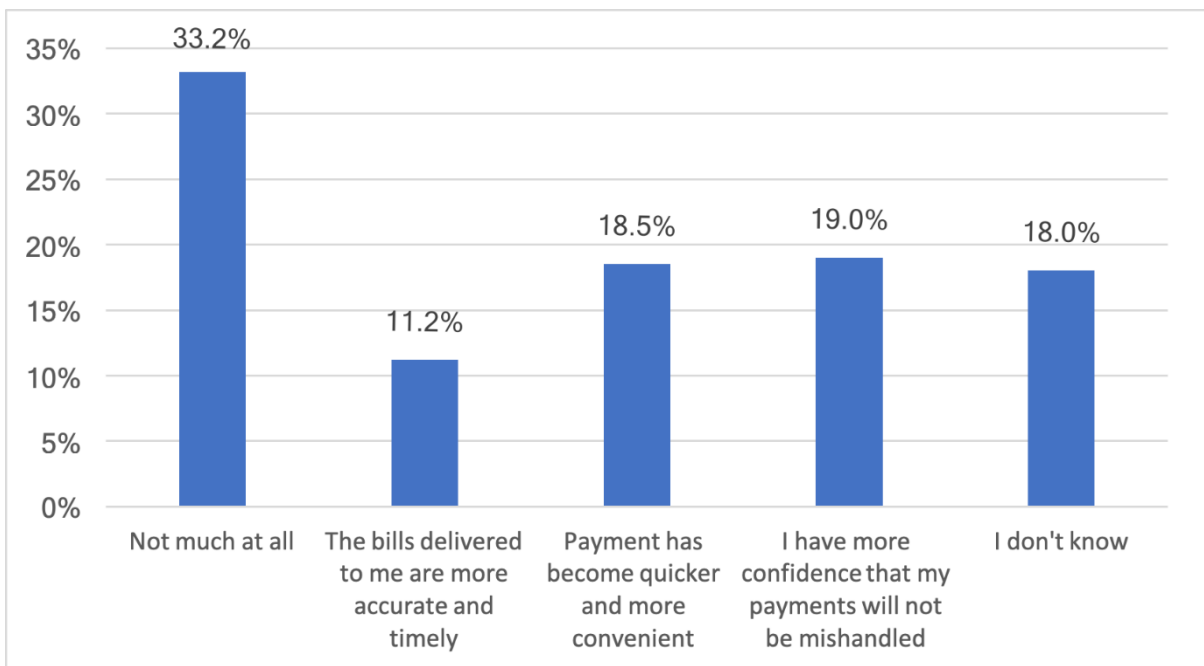
*Figure 23: Taxpayer perception of the impact of technology on business license and administration*



Source: Taxpayer survey

For city rates, 55% of taxpayers are not aware of technology introduced to manage city rates. Some mentioned online bank payments, and electronic billing. As shown in Figure 24, 33% say that not much has changed since the introduction of technology, while 18.5% and 19% say that payment has become more convenient, and they have confidence their payments will not be mishandled respectively.

*Figure 24: Taxpayer perception of the impact of technology on city rate administration*



Source: Taxpayer survey

## 5. Discussion and policy recommendations

This report has found that the implementation of the RMSs brought about a partial digitalization of revenue processes. While the extent of digitization varied from city to city, some aspects of digitalization included data capture and analysis, bill generation, bill authorization, improved audit trails, and automated reporting. POS devices were introduced in markets to improve transparency and efficiency of billing. The systems did not however leverage technology for purposes of taxpayer identification<sup>15</sup>, rates valuation, bill distribution, and taxpayer sensitization. Payment via online banking was also introduced, but this was not integrated with RMS, nor were other forms of payment, such as mobile money, made available.

The surveys show that the use of technology was well received by tax collectors and taxpayers, who hold very positive views of digitalization overall. That said, the surveys also revealed that the taxpayers were often not fully aware of what digitalization meant, and how it had materialized in the various revenue streams. Taxpayers also remained skeptical as to whether digitalization in its current form would be able to address some of the most critical issues such as tax collector fraud.

While the technology may still take some time to be fully embedded and perfectly used within the local governments, government officials are confident that it has already brought about some significant operational improvements - enhancing data management and analysis, transparency and reporting, and the overall process efficiency according to government officials. More specifically, it has helped with:

- The automated filling-out of and digital verification of demand notices and business license certificates for instance has increased the speed and accuracy of billing processes.
- The reporting and analytical functions of the RMSs systems have allowed revenue departments to develop more targeted and strategic sensitization approaches to e.g. target high-income tax defaulters.
- The effective linking of taxpayer data with compliance records and physical location have supported the ULGAs in reaching taxpayers and enforcing payments.
- The audit trails within the systems have disincentivized malpractice from happening and highlighted the need for stricter internal controls.
- RMS systems with cloud-based storage such as those in Lilongwe and Mzuzu (REMOP) have also put limits on the ability to tamper with system data.
- The systems have also facilitated digital payment options and slightly increased the trust of citizens in the tax administration with potentially beneficial impacts on voluntary tax compliance.

However, the operational improvements have also been accompanied by several implementation challenges. Government officials pointed out issues of capacity and reform willingness of tax collectors/officials, as well as issues with the actual software delivered by the software vendors. They also spoke of issues surrounding the integration of the RMSs with surrounding systems and processes

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<sup>15</sup> Even where GPS was used for property identification in Blantyre and Mzuzu, this was not integrated into the RMS system.

and management of RMS vendor relations more broadly. These views were to some extent contradicted by the RMS vendors themselves who suggested that issues with the software and delays in its delivery or the development of functionality was primarily a result of local government officials not meeting their own responsibilities, nor wanting to make the systems work effectively.

Given data limitations, the shortened financial year 2021/22, and the fact that multiple reforms were introduced at one time, the report was not able to clearly discern the impact of the introduction of RMSs on actual revenue figures. This is an area for further research, but the digitization of collection data has exposed that enhancing registration of taxpayers in all revenue streams is critical to populate revenue potential and tax liabilities, in order to allow setting of benchmarks and targets for monitoring performance of revenue collection.

Overall, the results suggest that while the RMS have introduced specific operational improvements and potentially increased revenue in some instances, the cities have not yet been able to fully leverage the potential of the RMS and technology at large. OSR in Malawi is still far below its potential, with the cities currently only collecting an estimated 10 – 40% of their actual OSR potential for City Rates, Business Licenses and Market Rates. While it is clear from the results that not all of the important functions of a revenue administration can be solved through digital technology, more can still be done to optimize the benefits of this technology – this includes improved digital integration, improved configuration and ownership of security related features, and creating a comprehensive IT strategy.

An important takeaway from this analysis is that ULGAs **should not overly focus their attention on digitalization, and greater focus needs to be placed on the overall operating environment.** Important revenue drivers such as registration and enforcement may in fact deserve more attention than digitalization efforts. A comprehensive database of taxpayers is necessary to develop and maintain – both to increase revenues, and to act as baselines for inspections and auditing that would narrow the revenue loss gap. Furthermore, improved tax collector management is vital to overcome issues of poor collector performance and pilferage. ULGAs need to put in place realistic baselines for markets, introduce random inspections and an implementable system of incentives (bonuses for performance and sanctions for non-performance) for tax collectors. POS devices should ideally not be shared among tax-collectors who should still be allocated in pre-determined ‘zones’ of the market, rather than roaming around freely, and baselines need to be put in place for these ‘zones’ to hold tax collectors accountable.

ULGAs should also place greater emphasis on **expenditure transparency and service delivery**, highlighting to the citizens the particular usage of their tax contributions. Citizens are going to continue to be reluctant to comply with local taxes and fees unless they know that the money they are paying is going to bring them some benefit. The legal requirement by Local Government Act (1998) that local governments need to spend 25% of their own source revenues in the Annual budget on capital projects for local development has to be adhered to and enforced. Local Governments needs to focus both on making better investment and expenditure decisions with the little that they have, as well as communicating and showcasing this to citizens. ULGAs should adhere to the requirement of



posting their quarterly financial reports on their notice boards at Council's offices for public viewing. Over time this will lead to increased revenues as people are more likely to comply.

**Where technology can help, however, it should be utilized to maximum benefit.** Table 8 outlines the potential of digitalization versus the actual impact of RMS's on processes. ULGAs should thus ensure that RMS are used for taxpayer sensitization via mass communication systems. They should ensure that the RMS are integrated with the IFMIS and bank accounts to assist with reporting and accounting reconciliations. They should also find ways to ensure data security by creating fraud-proof processes that do not deprive the ULGAs of the ability to own their own data and make system changes. Digital maps and GIS can also be used for quick and affordable identification and expanding the tax register, while modelling digitized data can help in simple and cost-effective valuation.

Part of the explanation of why the cities have not been able to unlock important functions of the RMSs and ultimately more effectively leverage technology is because they do not have **comprehensive IT strategies** in place. The cities appear to adopt more piecemeal solutions introducing an IT system without fully conceptualizing how it will fit-in with other existing systems and what it will require in terms of IT infrastructure upgrades such as local internet connectivity and or server security. The lack of a cohesive strategy across cities also led to ineffective negotiations with software providers where some systems are operational at a 3% commission while others receive 20% of generated revenue. The lack of internal capacity and systems in IT also create a strong dependency on RMS vendors. Better RMS software deals and options should be sourced and negotiated at national level by NLGFC and Directorate of Urban Development in the Ministry of Local Government for consistency and better local commission rates for ULGAs. City Councils should invest in the associated human resource needs, technological infrastructure and software, internet connectivity and operational processes to achieve optimization of own source revenues.

*Table 8: Potential of digitalization vs. actual impact of the RMS on processes*

The Potential of Digitalization		
Registration / Valuation		
Key Functions	Potential for Digitalization	Digitalized via RMS
Identification	• geo-spatial data for identification of unregistered properties	• for the most part this did not happen only with REMOP in Mzuzu
Surveying	no extensive digitalization possible yet	
Calculation	• datasets for verification & automated filling-in	• for the most part this has been digitalized
Billing		
Key Functions	Potential for Digitalization	Digitalized via RMS
Bill generation	• database, user interface allows for automatic filling-in	• for the most part this has been digitalized
Bill authorization	• automated alerts when signature required via user interface	• for the most part this has been digitalized
Bill distribution	• SMS technology, call centres, email, etc	• this has not been digitalized, bill distribution is still manual
Enforcement		
Key Functions	Potential for Digitalization	Digitalized via RMS
Sensitization	• SMS technology, call centres, email, hotlines, online portals	• this has not been digitalized, same enforcers do this work
Payment	• Online payment options, POS devices, mobile money, etc.	• this has been partially automated with several cashless options
Legal action	no extensive digitalization possible yet	
Administration		
Key Functions	Potential for Digitalization	Digitalized via RMS
Reporting	• Data systems and standardized reporting	• this has not been automated due to lack of integration with IFMIS and banks
Analysis	• Automated reporting via systems	• this has been automated for the most part, although not extensively used yet
Security	• audit trails for tracking of users, permission levels, etc.	• not yet functioning properly with user profile overlap, issues with audit trail

Importantly, there **needs to be more collaboration across cities and across levels of government to optimize the implementation of technology**. While in Malawi all cities adopted very similar RMSs there was not much coordination and peer learning thus leading cities to repeat the same mistakes. Collaboration would potentially also help cities negotiate more favourable prices for systems and avoid costly customization by service providers. Closer collaboration is also most critical with the NLGFC. The national level is key to enable the interoperability of systems (RMSs and IFMIS) and could also have allowed cities to explore unused revenue models of the IFMIS before adopting their own RMSs. Avoiding short-term, piece-meal solutions requires more extensive national level coordination.

Lastly, national government officials need to **carefully reflect over the role of incentives** for ULGAs. In a context of relatively widespread tax collection fraud and malpractice it is evident that tax collectors and revenue officials will not have an interest in the success of digitalization efforts that seek to close the very loopholes that they benefit from. Successful introduction of the RMSs requires addressing the preferences and incentives of different stakeholders as much as the focus on addressing technical issues with the software. Otherwise, the systems risk functioning as window dressing, geared to make the cities 'appear' modern without really changing the actual mechanics of revenue administration. The government could consider introducing performance-based grants and or conditions on the intergovernmental fiscal transfers based on OSR performance, as already started under the Local Authority Performance Assessment (LAPA) administered by NLGFC. This would include assessing availability of updated registers of specific major revenue streams, performance towards achieving revenue potential, and efficiency of RMSs.

## 6. Study limitations and recommendations for further research

The findings of this study have to be seen in light of some limitations. In particular, with regard to the revenue analysis, in some instances the budgetary data received from NLGFC did not match the data retrieved from local governments and it was not always clear what the correct data was. The financial year of 2021/22 was only 9 instead of 12 months undermining the ability to carry out annual revenue comparisons. The RMSs were often introduced in a staggered manner spanning across financial years and alongside other reforms, making it difficult to ascertain their impact on revenues.

The surveys of taxpayers and taxcollectors did not always achieve random sampling across city neighborhoods and types of businesses, undermining the representativeness of these survey findings. Furthermore, given the sensitivity of the issues talked about in the surveys the results are likely to be understated.

The period of study of some of the RMS was also very short, which were rolled out in a staggered manner. In Mzuzu for example, the new RMS had only been in place for 3 months, thus not allowing the study to observe impact over time.

Further research could include:

- Analysing the long-term impacts of RMSs on revenue administration, collection and taxpayer compliance.

- More rigorous analysis to isolate the impacts of different aspects of digitalisation on revenue outcomes to better understand where the benefits are gained.
- Isolating whether impacts of technology are due to technology itself, or simply a result of change and increased focus on system reform.
- A deeper analysis on practices of tax collectors, particularly on enforcement and compliance.
- Mapping stakeholder interests at different points along the tax collection and enforcement hierarchy, and how changing incentives might address lack of interest in reform.
- The impact of digitalization on the cost and efficiency of revenue collection.
- Mapping areas of diversifying own source revenues in ULGAs and their digitalization applicability.

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