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Sorting paper: The archival labour of digitising land records in Kenya

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Abstract

Nairobi's land digitisation programme presents continuous challenges to the Kenyan state's aspirations of reforming land administration. By drawing upon insights from archival sciences and digital geographies, this paper argues that digitisation of Kenya's land administration records presents us with an opportunity to pay attention to how information flows from paper to digital systems, and the nature of human condition that makes it possible. Based on research of land digitisation initiatives in Nairobi and its peripheral counties, this paper explores first, how digitisation initiates a large-scale state exercise of sorting paper in the land records departments that constitutes the archival apparatus of the state; and second, how the archival labour of state officials in this process is at the same time significant, invisible and devalued. Through interviews of state officials in county and state departments, we argue that the digitisation process is far more complex and messier than the rhetoric of seamless transition to automated land administration in Kenya. Digitisation involves a slow embodied labour in sorting paper by state officials who have little power in shaping the design of the platform that they are expected to use. The devaluation of the archival labour of state officials who are not professionally trained in 'archival practice' and are seemingly voiceless in the production of national land information platforms leads to subversion and non-cooperation with the platform itself. The paper concludes that an expansive lens of seeing digital platforms through the tools and technologies of archiving practices enables us to understand why platforms fail, why and how paper increases value within digital systems and how archival labour is central to the politics of digitisation and platformisation in the future.

KEYWORDS

archival labour, digitisation, land administration, paper information infrastructure, platformisation, state actors

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1 | THE PUSH FOR DIGITAL LAND ADMINISTRATION IN KENYA

> We are still sorting the land records mess; we cannot say we are 100% sorted. It took approximately four years for us to create that system, to put it in place, the GIS system, our new letters of Allotment are there, we did validation, so it took us four years.
>
> (NA230222I208S)

We were speaking with a Survey Department official in a county office in Nairobi Metropolitan Region (NMR), when they stated that the 'land records mess' was not sorted even with large-scale digitisation of existing paper records. We were interested in understanding how the Kenyan government's initiative to digitise its land administration records to create a digital platform (called National Land Information Management System or NLIMS) was implemented by state officials. Much of the push for digitisation has come from the claims by the national government that a digital land administration system will lead to transparent transactions enabling more efficient land management services. However, a system of land digitalisation that is built upon a long history of already unwieldy paper information is likely to transfer the same challenges onto a digital platform. As this official continued to express their frustration, the land digitisation process began to unravel as time intensive, labour intensive, unwieldy and incomplete. It was, in short, revealed as the embodied labour of officials in archiving paper for a digital future of automated planning—a future that neither included them nor was within their reach any time soon.

Kenya's early push to integrate Information Communication and Technology (ICT) in its operations and public service provision can be traced back to the early 2000s. In 2004 the national e-Government strategy's core objective was to modernise government operations and service provision. Since then, Kenya has experienced a digital revolution underpinned by development of an ICT policy and legal framework, public investment in connectivity infrastructure, for example laying of national fibre-optic cable, and mobile technologies. A key component of this strategy has been the launching of mobile money services such as Mpesa offered by Kenya's leading telecommunication company, Safaricom. Literature on the effects of the adoption of e-Government strategies and platforms, such as e-Citizen, in the delivery of public services shows that there is generally a positive relationship between this adoption and public service delivery, particularly the combination of e-Government and decentralisation of public service delivery through the local Huduma centres (Kamanu, 2022; Wasunna, 2018). However, the transition to digital has had several challenges, with recent cyber-attacks on the e-Citizen platform which blocked access to a number of public services that are processed through the platform (Mwangi, 2023). Further, the current government's push to digitise more than 5000 public services as part of the Digital Superhighway ICT agenda (Kamunde, 2023) has only had partial success. It is along the grain of these national initiatives that the digitisation of land administration is being undertaken.

Following Derrida's assertion that 'there is no political power without control of the archive' (Derrida, 2017), we argue that the power of the state is produced by the state officials who transfer information from paper archives to digital platforms. The aim of this paper then is twofold. First, we will draw from archival studies to understand how the digitisation of vast repositories of paper is analogous to an 'art of governance' (Stoler, 2002) in shaping the geography of Kenya's land administration. As an archive of colonial and postcolonial power relationships, land transactions are recorded, managed and documented through the flows of paper between departments, files and officials. Taking the paper-based land records as an archive that gives power to various land department officials, we suggest that the flow of paper and the information therein shapes the digitisation process itself. Second, we suggest that the digitisation process itself is vested in the embodied labour of state officials. Transfer of paper documents onto the digital platform presents challenges to the resources and capacity of the state. It requires time and energy to operationalise the curation of vast repositories of paper records, documents, memos, titles across several thousands of ledgers and case files; systematise a process of scanning and digitisation through which information on paper is captured within a digital image; and verify that this entire process has been completed accurately so that the platformisation process can be initiated. This 'archival labour' and time of state officials drafted into the digitisation process present the entanglements of power, privilege and precarity within the state.

2 | DIGITISATION AS 'ARCHIVAL LABOUR' OF THE STATE

In recent years, there has been increasing interest in platformisation among digital geography scholars (Cowan, 2021; Kitchin et al., 2016; Mann & Iazzolino, 2019; Sadowski, 2020) who have noted that these platforms have actually produced higher levels of obscurity and illegibility on the ground than previously existed (Zook & Spangler, 2022). However, there is simultaneously an emerging interest in the processes of state digitalisation (Baud et al., 2014; Richter, 2011) that

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contribute to these platforms. Indeed, land as one of the key assets of the state is now increasingly digitised with the aim of automating planning and governance of metropolitan regions and has been largely understood through prop-tech or fintech platforms. Yet this emerging scholarship is somewhat silent on this first step of platformisation that is essential in the pathway towards fulfilling an aspiration of paperless land governance—that is, the digitisation of paper. How does the state digitise its records, how does information move from paper documents to digital platforms, whose time and labour is involved in making this transition possible, and what are the impacts of these processes on the state itself?

The answers to these questions lie not just in the scrutiny of platforms, rather in a deeper examination of the processes of transformation of paper documents to digital images. Currently the vast repositories of paper records held in Nairobi's land administration departments can be read as a form of archive that reveals an incomplete and contested knowledge about historical land transactions in Nairobi County from the colonial period. Mbembe noted that the archive is 'not a piece of data, but a status' (Mbembe, 2002, p. 20), which emerges through selection and privileged status of some documents and the 'refusal of that same status to others, thereby judged "unarchivable"' (Mbembe, 2002, p. 20). The archive identifies what stories can be told or hidden about the practices of the state in governing its territories since the colonial period and into the future. Thus, how we see the story of land digitisation depends upon the ongoing practices of archiving Nairobi's paper records, which includes methods of collecting, categorisation, storing and retrieving of information related to specific land parcels.

The notion of what constitutes an archive has changed substantially in the last few decades through the introduction of digital tools, methods and technologies of recording and transmitting information. Gabriella Giannachi argues that the archive plays an important role in the digital economy, both as a technology of documentation, as well as a 'network of strategies we use to map everything in both space and time' Giannachi refers to the archive as an 'apparatus' which can no longer be read as an isolated repository of documents, rather as a relational process through which the global network of digital economies connects to our intimate economies of thoughts, actions, beliefs and practices. The apparatus of the archive then reflects changing societal attitudes towards the transmission of information across space, time, institutions and people. It includes a diversity of methods and technologies deemed to be appropriate for transmission—from the use of mechanical systems of coding, categorisation and filing of paper documents to the processing of born-digital data.

Following Stoler, we suggest that Nairobi's land records should be seen through a 'focus on archiving as a process rather than to archive as things' (Stoler, 2002, p. 87), which produces a relational (rather than objective) digital repository. Focusing on the process means we pay attention to *how* information flows from paper to digital systems, and the nature of the human condition that makes it possible. The relational production of the archives relies upon the embodied labour of state officials who transfer information across two different infrastructures—paper documents evident in files, ledgers and memos that are manually catalogued, indexed and searched; and digital platforms where documents are searchable and interoperable instantly. As Burns reminds us, archives are 'not simply clear panes through which we can see the past but the products of particular people's labour' (Burns, 2010, p. 15). The processes that determine information flows between paper and digital records are therefore conceived, implemented and managed by state officials in the digitalising state.

Archival studies scholars have critiqued the diminishing role of 'archival labour' or the work of archivists in public records (Archivesteph, 2020; Cook, 2011; Lee, 2021; Tansey, 2016; Williams, 2016). Cook notes that archivists have been seen as the 'handmaiden' of historians that relegates their position lower in a hierarchical order and disregards their professional knowledge and expertise. He notes that the 'role of archivists as "co-authors" of history remains invisible' (Cook, 2011, p. 613) and in particular most historical accounts miss out the voice of archivist. Tansey suggests that archivists face particular challenges from 'the commodification of cultural heritage, the chronic underfunding of archives, and the erosion of public records' (Tansey, 2016). She warns that the lack of recognition of 'archival interventions' which are the labours of archivists in appraising, describing, preserving, referencing and advocating will have serious impacts on public recordkeeping in the future. Williams further argues that this archival labour is highly gendered with mostly women (65%), volunteers and interns to do the job. This 'renders the labour truly invisible, because people without job protections or benefits are unlikely to discuss anything about the work that is problematic' (Williams, 2016). Stephanie Nield also notes that archive work is emotional work, and that affect and subjectivity play an important role in how the archives are curated and who the archives begin to speak for as public records of history (archivesteph, 2020). Thus even as we acknowledge that the archive and archivists are co-creators of history, notions of the body and embodiment are crucial in unsettling the archives as a neutral body of documents (Lee, 2021).

If archival work is emotional work, then surely the archives are also historically and materially contiguous to the positionality and labour of the archivist. However, while geographical scholarship is rich with presenting the archives as fragmented, embodied and affective (Gibson-Graham, 2020; Hodder & Beckingham, 2022; Lorimer, 2010; Mills, 2013;

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Moore, 2010), there is very little understanding of the labour that goes into the creation and maintenance of this archive. Even in recent geographical scholarship which discusses the impact of digitisation on the 'political and economic infrastructures of archives' (Hodder & Beckingham, 2022, p. 1298), the voice of the archivist is muted. Geographical perspectives on the archive are ridden with the labours of the historic geographer that can potentially make the archives produce public history and make the history of indigenous communities visible and valid (Gibson-Graham, 2020; Lorimer, 2010; Mills, 2013; Moore, 2010; Roche, 2021). Yet there is a lack of acknowledgement even among historical geography scholars of the labour of the archivist in curating public records for posterity.

If archives indicate a 'status of power' (Mbembe, 2002), it is the state officials who embody this power in their bodies—not just as figures of authority vested with executing particular laws and policies of the state, but also as those bodies where power is devolved from the state in order to enable flows of information from paper to digital land records. Particularly in the case of Kenya, this is a highly emotive issue. As Bassett notes, in Kenya 'Land—who owns it, how it is utilised, and how it is distributed across society—historically has been and continues to be a politically and emotionally divisive topic' (Bassett, 2017, p. 538). This makes the 'archival labour' of state officials a much more complex social, political and embodied negotiation with recent land laws and their inherent processes of implementation. Focusing on the embodied labours of state officials in digitisation of land records challenges the current focus on platformisation as the end game of digital governance. This also challenges the current archival studies' focus on the labouring bodies of archivists as co-creators of history. Our focus on the fragmented and invisible labour of state officials who are not professionally trained in 'archival practice' but are directed to digitise paper makes the archival labour of state officials central to the politics of digitisation and platformisation in the future.

We argue that archival labour in this context is an intimate and affective relationship between state officials and the archival apparatus of the state. As Hull found in the case of Pakistan, the process of sorting, curating, storing and digitising paper reflects the political strategies and power of particular state officials and organisations at various scales (Hull, 2012). Archival labour is embodied in the work of the state officials in circulating paper documents and files between the county land administration offices and the digitisation machines—photocopiers, document scanners and computers. Archival labour then is tied intimately to the materiality of the documents, as Mills notes: 'their very materiality is a memory—literally flaking, breaking and discoloured with time' (Mills, 2013). Archival labour peels away at the dust on these documents, dust as 'that which will not go away' (Steedman, 2002) and to 'clean' them into digital counterparts. In the context of state digitisation, archival labour is evident in the work of the state officials who are marked by a paradox of privilege and precarity, who on the one hand are in positions of authority as executors of the land administration system, yet on the other hand have little voice in the design and functioning of a digital platform of which they are the ultimate end users. There is a need then to focus on archival labour if we are to understand the land administration machine as an apparatus of state power and sovereignty.

3 | METHODOLOGY

The arguments in this paper are developed from a larger five-year project titled 'Regional Futures' that examines the transformation of metropolitan peripheries of Nairobi, Guadalajara and Mumbai through the digitalisation of territorial governance. The discussion in this paper is based on 22 semi-structured interviews conducted since November 2022 with national and county government officials, civil society actors, land professionals and land brokers in three of the five Nairobi Metropolitan Region (NMR) counties. They were either directly involved in some aspect of the land digitisation programme or had first-hand knowledge and experience of documenting land digitisation practices.

Our research benefited from good working relationships with different national and county government officials and land professionals through professional and research networks as well as snowballing techniques by the research team in Nairobi. Our interviews sought to explore in particular the processes of digitisation undertaken by the different land administration departments. Given that land is an emotive issue in Kenya and the land digitisation programme was overseen by the state military, participants were understandably hesitant and cautious when it came to discussing specific details of the process. However, following trust-building conversations, they would agree to engage in the research through assurances of confidentiality and privacy.

As two non-white researchers based in the Global North and South, we have long experience of researching the politics of urbanisation and its relationship with land, territory and space. The first author, the project lead, is an established scholar in a British university, while the second author, an early career scholar, is a Kenyan from the dominant tribe who negotiated both insider and outsider relationships with participants informed by our experiences and professional

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backgrounds, subjective positions, geographic locations and ethnicities. For example, despite the second author sharing the same nationality as the participants, a majority of whom belonged to a different ethnic group, they framed him as an outsider, while the first author, despite being of Asian origin, was welcomed by participants as belonging to the Global North. We kept detailed accounts of these encounters in fieldnotes, which have enriched our analysis in this paper.

4 | NAIROBI METROPOLITAN REGION (NMR): AN ARCHIVAL CHALLENGE IN A DIGITAL AGE

Land reforms in Kenya has always been a politically sensitive and emotive issue and has been investigated by several scholars (Bassett, 2017; Boone et al., 2019; Manji, 2014; Mwangi, 2007; Obeng-Odoom, 2020). The Kenyan state has attempted from time to time to execute land laws in order to manage and streamline the system and specifically to wean out widespread corruption in the land market, but these efforts have been 'erratic at best' (Manji, 2020). As Bassett (2017) notes, Kenya's land reform has been challenging both due to vested political interests, and also because of the devolution of governance in line with constitutional reforms. The increased power now offered to the county governments in managing land as well as the setting up of an independent National Land Commission (NLC) has led to continuous (judicial and public) contestations around who gets to control and redistribute public land in Kenya. Bassett notes that contestations between the federal Ministry of Lands and the NLC have been particularly acrimonious, with contestations over their role in land management and registration, and who was responsible for digitising land records. Although initially NLC was given a mandate to create a national land information system, this was reduced after judicial rulings and the 2016 Land Law Amendments Act. The NLIMS process is now driven by the federal Ministry of Lands with cooperation for the county land management departments. This presents an archival challenge—decades of land record documents are located across county land departments, but the process of digitising them is centrally funded, managed and directed by the federal Ministry of Lands.

Even before NLIMS was initiated, the Kenyan national government had begun to implement several programmes to improve land administration, including the 2009–2012 Swedish financed project PILAK (Andersson et al., 2013), the 2014 Electronic Land Document Management System (EDMS), and the 2017 Land Information Management System (LIMS) (RoK, 2022; RoK, 2021). These initiatives faced several challenges ranging from lack of adequate funding to operational backlogs that led to stalled service delivery at the land registries (RoK, 2021), as well as the lack of integration across departments. In 2018, the Kenyan government initiated NLIMS, premised in Section 7 of the Land Act, that electronically integrates all land administration processes. NLIMS, like other land reform processes including the development of the current land legislative framework, has been financially supported by development partners such as the Swedish International Development Cooperation Agency (SIDA), the World Bank, and the United Nation's Food and Agriculture Organisation (UN FAO), and is being implemented with the support of other key stakeholders, such as county governments, land professionals and civil society actors.

One of the key justifications for this transition to digital land management platforms in Kenya is the claim that the earlier paper-based land administration system has over time become inefficient and complicated (Nyongesa, 2012; RoK, 2022). As Manji (2020) notes, there is a long history of 'land mischiefs' in Kenya's land administration and management, which has been documented in several independent reports. Scholars acknowledge that NLIMS will lead to improved service delivery and increased land-based revenue collection (Kariuki et al., 2018; Nyongesa, 2012; Taurus & Wamae, 2022). The digitisation initiative has been implemented in two counties so far—Nairobi and Murang'a county; however, it is commonly known that the NLIMS platform was wholly inadequate in creating a comprehensive land register. This is related to overall project leadership, timely budgetary support, effective change management and stakeholder involvement (see, for example, Kariuki et al., 2018; Taurus & Wamae, 2022). Since the implementation of NLIMS in Nairobi, there have been several cases of challenge from professional bodies of law and surveying—discussions of which fall outside the scope of this paper.

The challenges of achieving Kenya's aspiration of land digitisation, however, are not just vested in creating a comprehensive and transparent national NLIMS platform; rather it begins with the invisible and unacknowledged labour-intensive exercise of 'sorting paper' in county land records departments. As Wayumba (2017) notes, effective transition to digital land administration in Kenya needs to consider how land information systems at the county scale will be developed and integrated into NLIMS. Unless paper records are digitised, the information they contain cannot be cleaned, verified and transferred to the NLIMS platform, and this is where the process has stalled. Land records digitisation started in the Nairobi Registry with the scanning of paper records related to land and their uploading on the digital platform.

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The State Department of Planning noted that by the end of 2022, the government had only digitised the Nairobi Registry against a target of 39 land registries (RoK, 2022). According to a Kenyan government report (RoK, 2021), the 'sorting of land records' is seen as one of the main causes of this underachievement (RoK, 2022, p. 32).

5 | ARCHIVAL LABOUR: SORTING PAPER

County and state government officials who we spoke to described the digitisation of paper-based land records as an archival challenge of colossal proportions—vast repositories of paper are still not digitised, those digitised are not always meaningful or contain errors, and even if they are on a digital platform, they require extensive processing in order to be automated.

In Nairobi City and Murang'a County where digitisation was conducted, sorting of paper was immensely space, time and labour intensive. Land records occupy buildings and large storage facilities where they are catalogued and stored, and therefore are akin to an archival collection. Digitising this archive also requires physical space—large office facilities with scanners, computers, servers, desk-space, and so on. Digitisation requires meticulous preparation and management—sorting paper files, barcoding each piece of paper, manual verification, barcode reading, and scanning into digital format.

Officials involved in the digitisation process described this initial step as quite daunting since they found literally 'cartons and cartons of unfiled documents' (NA221109LAS) and therefore their first task was sorting, filing and cataloguing these documents. Digitisation was done in two parts—creating a system for tracking and tracing the documents; and an Electronic Data Management System (EDMS) that was used to scan all the documents. The flow chart in Figure 1 shows just how many steps this involved—finding physical space, sorting paper into chronological order, barcoding each paper and each file with different colour keys, manual verification, barcode transfers onto computer, scanning each paper into digital formats, and finally metadata attribution. Once this process was completed the paper files would be returned to the archive's strong room for storage.

In this process, the priority was putting together a digital case file on each parcel of land—as all other paper documents were ultimately to be traced back to each plot of land in the county.

> The first thing would be to segregate the files, which file belongs to which region or county. If the files were for lands within Nairobi, you would check whether the person in charge of the strongroom had authorised their release, they would check the files that had been released were the ones they had authorised, sign against the release form with the respective file number, information, then the sorting out process supervisor would pick them and assign them to a clerk to scan.
>
> (NA230217I002)

Thus, each digital file was categorised to relate back to each plot and all the documents in that file would relate to land registration, transfer or mutation. This was a case file containing all the documents related to land titles—history of ownership, subdivisions, land use as well as any memos, charges and letters issued against the land parcel. The case file then becomes the unit of information about each parcel of land that is scaled up in the archiving process to expand onto the territory of Nairobi in the NLIMS platform. In order to make the digital case file, the official noted:

> We would start with barcoding. They would generate the barcodes in-house. You would remove them one by one from the rolls and put on the document. The barcodes would be different for different counties. Then we would use a barcode reader to upload the documents and then indicate on the system what type of document we had input. The barcode reader was connected to a computer so you would read one document at a time, fill it in, move to the next.
>
> (NA230217I002)

Sorting, however, was fraught with challenges—officers found that some plots of land did not have associated files, papers from different files were mixed up, stray documents emerged that did not seem to belong to any file. Error correction, validation and verification took most of their time in sorting paper. Once this process was completed, the files were handed over to another team that was located in a highly secure space managed by the Kenyan military. Once the digitisation team had scanned the paper files onto digital formats and created the digital folder related to

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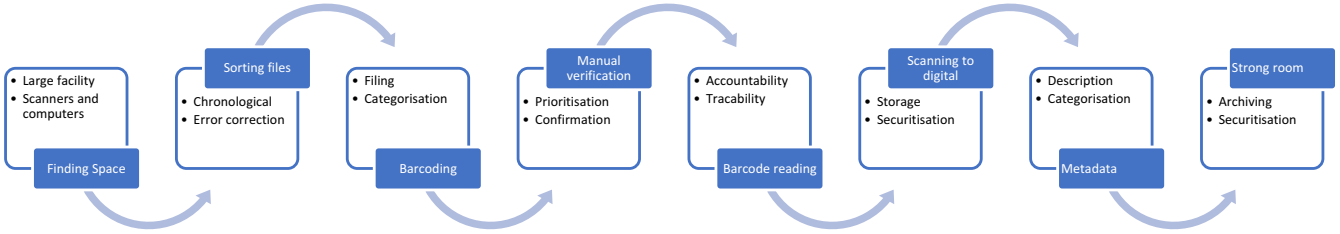

FIGURE 1 Flowchart of land records digitisation process. Created by Ayona Datta.

each parcel of land, the officers in another department would then be given secure codes to open the folders and add metadata descriptions to the files.

> they give you the physical files, then they give you the computer from which to work, you log in using the details provided through the facilitation of the Ministry, the ministry would before that create a list of people authorized for a specific task, share with JNAM [Joint National and Resource Mapping] who would then generate your access code, the access code would be for that process only.
>
> (NA230217I002)

Once paper has been digitised, all subsequent updates are made to the digital file. However, the paper documents are not destroyed, but kept in a strong room under heavy security to prevent tampering. Land officials continuously need to refer back to paper files, although information about land parcels is available on the digital platform.

5.1 | Surveillance and casualisation

The elaborate digitisation of paper records to generate a national platform—NLIMS is not just a technical exercise. Rather the process of land digitisation so far presents an 'archival labour' of the state, whereby power is embodied in the labour of state officials. As digitisation is operationalised, it requires selection, coding, categorisation and classification of paper documents—that is, *sorting paper* to create a system of information flow from paper to digital. It relies on the selective transfer of paper documents to digital images and hence the reimagination of what constitutes 'information' in the context of Nairobi's regional future.

Officials received about a week's training on specific tasks. However, they were also heavily monitored and casualised through this process—they had to record each and every file and document they had worked on, but were paid hourly and given targets of no less than 100 files per day. This resulted in a lot of stress, although officials noted that this process was meant to increase accountability in the system.

> Because actually it was stressful because we were working 24hrs ... we were working from six in the morning up to noon. The next group takes up to six in the evening. Another group takes up to midnight. Then if you go at midnight, come in the evening, and just sit at the office. It was stressful.
>
> (NA221108LA)

The time-intensive nature of the task was exacerbated due to a lack of appreciation of the messiness of paper records as well as the efficiency of the machines that were supposed to make the digitisation process smoother. They were however understaffed and under resourced.

> Because the magnitude of the work, the assumption was the records are very clean, everything is in order. Another thing, the machine, we have the scanner, they only have one scanner.
>
> (NA221109LAS)

The task of the state officials was only to sort paper and scan the documents. Once they had sorted, curated, recorded and verified the paper records, they had to hand the paper files to the military who then took it for scanning, undertaken mainly by casualised workers who the military had recruited to do the actual scanning and transfer to digital formats. These workers

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were of a younger generation with basic IT skills and were not familiar with the land administration systems. This stage of the scanning took months and was kept hidden from county officials.

> That officer was very secretive we could not go anywhere near where the scanning was taking place. After barcoding, the files would be handed back to the military person. They were the ones that would proceed with the process.
>
> (NA221109LAS)

In this description of archival labour, the work shifts and casualisation of labour is arguably analogous to gig work, but also distinctly different from it. Unlike gig work, the labour of officials does not exist within a 'just-in-time economy' (Sharma, 2014); rather far from it—state officials enjoyed relatively well paid secure employment. However, the microwork that is inherently part of the digitalisation of paper records and the location of state officials within this patchwork devalues and dislocates them from their existing positions of power.

Microwork in the digitisation process also reflects that while the erosion and devaluation of the labour of archivists is a very real challenge in public recordkeeping (Cook, 2011), the devaluation of the experience and skills of state officials impacts directly on land administration and the overall management and governance of land by the state. Here state officials are not comparable to archivists as they are not trained in cataloguing, curating and preservation of documents. Rather state officials who are trained professionals in land surveying and administration are retrained for microwork which is of a lesser value and experience. This then is the fundamental moment of state digitalisation—that it is reliant on the time and labour of highly experienced civil servants who are trained in land administration, not archival labour.

5.2 | Subversion and non-cooperation

The digitisation process exacerbated existing tensions between the national and county governments. The handling of sensitive land records that were related to the flows of information from paper documents to the NLIMS portal entangled state officials within a web of surveillance, control, mutual distrust and de/re-skilling by the federal Ministry of Lands. For example, while the digitisation process was described by state officials as 'all in-house', the Kenyan Military managed the digitisation phase of land records. This was due to the perception of national institutions as transparent compared with individual officials in the various land departments. County officials also noted that security institutions were better placed to manage digitisation as land in Kenya evoked a highly politically charged context as it was connected to land grabbing, corruption, embezzlement and other extra-legal practices. However, the key experience of officials through this process was of voicelessness. As experienced professionals with expertise in the land management process, they were not consulted during the digitisation process or were able to provide any feedback into the creation of the NLIMS platform. As one official said, there was a lack of a protocol that took into consideration even the basics of land management; that is, prioritising specific land records documents or departments for digitisation. As one official said:

> If you understand the Ministry, then you know where to begin. You don't just come and say, we are digitising. You must know which department precedes the others ... I would say digitisation should start from maps. If they would begin from the maps, at least they would build up by the time they reach the [Land] registry, but trying to focus on just where they see, you know? And you know most people when they hear of Lands Department, they see the Land Registry. Yeah. That's where the title is. Yeah. Yeah. And then they forget that the other departments like Survey that it is part of the Ministry of Lands.
>
> (NA221108LA)

Officials were frustrated with the digitisation process as they perceived the Ministry to have started with an eye on revenue generation, whereas from an everyday bureaucratic perspective officials argued that digitisation should have started from the geography of territorial relations. The Ministry's decision to start digitising the Land Registry first meant that decades of title documents were verified and registered in the system and new titles could be generated digitally in the future. In other words, the digitisation process was geared towards recording land as private property and therefore as an asset that is monetised in the future. Survey officials argue that the digital format does not provide tangible extractable information in a way that paper does. Digitised titles are not yet georeferenced and do not overlay on existing maps. Moreover, digital scans of paper maps are not to scale and cannot be measured and related to exact dimensions on the ground unlike paper maps.

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The main concerns surrounding the NLIMS platform emerged when amidst the national tensions over who gets to control the land registry, the Cabinet Secretary (CS) in charge of land administration condemned all officials in the government as corrupt (Mburu, 2021). Officials we spoke to felt undermined by the state, especially as they argued such statements only served to create a work environment where their input was not valued and they were collectively condemned. This was personally offensive to several officials who were providing casualised labour within the same process that removed their value as experts.

> I was really angry with, um, Cabinet Secretary, which she made a comment. She said that if I was to fire corrupt people in the Ministry, then I would remain with no one. It's, it's emotional for me. it's, it's a blanket condemnation. Yeah. On all of us, everyone. Blanket condemnation on all of that there is no person of integrity. Yeah. That's of course. I do want to believe that I'm a person of integrity, but you see when once that blanket condemnation is there. You don't even have the, the, there's no strength to check because you already know all of these people are Yeah. Corrupt. So, you, you can't get into trying to, to, to engage, engage corrupt. So, I, I felt very much offended by her as the head of the Ministry saying that cause in normal life it is not that everybody can be corrupt.
>
> (NA221110S)

Further and as a rationale around reducing corruption, the new Land Laws Act of 2016 removed the indemnity that government officers had earlier enjoyed against prosecution. The digital portal required officials to sign off and approve each stage which this generated some resistance around inadvertently being 'blamed' for something they had no hand in. This caused some anxiety since the new portal was both unfamiliar and not conducive to their existing working methods. There was a perception that the system transferred risk onto the officials and did not offer them discretional space or flexibility like the paper-based process. Officials were concerned about errors generated by the system that could be later attributed to them. The paper documents were familiar, and they knew how to use these to generate accurate information during surveys and field visits.

Officials thus engaged in acts of 'non-cooperation' by refusing to use the platform for their day-to-day transactions. Officials noted that there was no consultation or collaboration from the Ministry, and they were not given any opportunity to provide feedback on the architecture of the platform, and yet they were required to use the platform and take responsibility within a flawed system. As one official said, they felt 'belittled'.

> Yeah. If, if they would have come from a different perspective of, uh, that we, we are co-workers in. In, in this thing, and all of us want this thing to work. If we had come from that perspective, then we would've had a very different system. And also, the people who are working on the system would've a very different mindset, a mindset of making it work, you know. Because partly also if, if it doesn't work for me, I put it aside, it's not working. But you see, if I have buy-in, if it's not working, I'll call. And I'll tell you this point, this point, this point, it is not working. Can you do something about it? You see, now I've given you feedback. You can correct and make the system more. However, if I put you aside, you have no incentive to improve the system because you belittled me. In the system. So, I, I am, I, I will not, I will not publicly say that it is not working. Mm-hmm. But internally, I will say is there something that can make this system not work? And I will look for it.
>
> (NA221110S)

6 | CONCLUSIONS

Nairobi's land digitisation programme presents continuous challenges to the state's aspirations of reforming land administration in Kenya. Land administration departments are currently burdened by decades of poor archiving practices, mismanagement, corruption and what Manji calls rampant 'land mischief' (Manji, 2020). While land reform remains a politically sensitive issue, digitisation of paper records reproduces existing tensions and introduces new challenges through the emotive archival labour of state officials. Despite attempts to decommission paper and automating land administration, paper and digital documents circulate simultaneously, and in some cases paper gains a new life and increased value through the digitisation process. By following the enormous task of sorting paper in Kenya's digitisation programme, we have argued for an expanded understanding of digitisation as a process where information flows from paper to digital are both complex and contested.

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Using an archival lens to read the digitisation process of Kenya's land administration offers us particular insights into the digitisation process as labour intensive, time-consuming and increasingly reliant on the cooperation of state officials to make things work. An archival lens enables us to understand how digitisation is a paradox—that is, devolved as archival power in the figure of state officials, and simultaneously practiced through the microwork in the digitisation process that is analogous to gig work. We find that digitisation increases the archival labour of the state as it now has to maintain and securitise two infrastructures of information—paper and digital, as well as regulate the flows of information between them which continue to remain fragmented and incomplete. The labour of making and maintaining a digital platform does not reduce the labour of maintaining paper records—digital and the paper archives have to be managed simultaneously and accurately without earlier protections against prosecution to state officials.

The art of governance of land is then also a governance of the archival labour of state officials. This has already emerged in the scholarship on bureaucracy and everyday state, which focuses on how the state is embodied in the figures of its officials. However, in the scholarship on digitisation and platformisation, much of the focus has been on automation and gig labour. The act of sorting paper shows how digitisation is a highly labour-intensive process within the state that includes microwork, precarity and devaluation of the very figure of the state. An archival lens in understanding the geography of digitisation within state departments enables us to see this as part of a longer process of devaluation of archival practices within state departments—the erosion of their capacity and expertise in sorting, cataloguing and archiving paper and the absence of the figure of professional archivists in maintaining land administration records to begin with.

This also enables us to understand why platforms fail. Digitisation does not make paper redundant. On the contrary, digitisation gives paper increased power and archival value. Platformisation of records starts and ends with paper. Digital records cannot be created without first sorting paper records for scanning, and digital records need to be continually verified against paper records. Digitisation made the National Land Information Management (NLIMS) platform a digital image of the paper archive, by replicating its errors, absences and glitches. The digital platform was thus grafted over the paper-based information infrastructure of land administration, never completely replacing it, but existing alongside the highly securitised paper records. The insistence of the officials to use the paper-based systems despite the creation of the NLIMS platform suggests how paper will endure within a digital information infrastructure in the future.

Finally the digitisation of land records in Nairobi suggests how the state controls and expands its territory through platformisation. Paper documents and files constitute the historical genealogies of colonial governance, changing boundaries of commons land belonging to indigenous communities, as well as the absences and silences of the records that have both geographic and administrative consequences for the future. The moves towards digitisation need to be seen in this expansive sense of archives, where the tools, technologies and infrastructures of digitally archiving paper records shape how the state seeks to govern land and territory in the future.

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DATA AVAILABILITY STATEMENT

Research data are not shared.

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