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Reformatting the Commons: Digital Land Reforms and Grassroots Contestation in West Africa

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Abstract

This manuscript is an examination of processes and outcomes of digitalisation of land administration and governance in Mali and Ghana. It examines how these processes in the two countries affect customary land

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tenure and administration, as well as the social groups, most of whom reside in villages and communities governed by customary land. We draw on ethnographic field research conducted in Mali, especially in and around Bamako, from key state institutions with mandates over land, and in the peri–urban areas of Kumasi and Koforidua in Ghana, along with their respective regional Lands Commissions. Digitalisation is well placed to resolve conflictual and complex customary customary land tenure and delivery challenges confronting societies and governments in the two countries. Nevertheless, our findings indicate that, despite state efforts to engage customary land tenure systems and actors, especially in Mali, land digitalisation largely remains disconnected from customary tenure arrangements.The neoliberal foundations of digitalisation erode any equitable outcomes, which remain elusive for many.

Keywords: digitalisation, customary land, equity, Africa, Mali, Ghana

Résumé

Ce manuscrit examine les processus et les résultats de la numérisation de l'administration et de la gouvernance foncières au Mali et au Ghana. Il analyse la manière dont ces processus, dans les deux pays, affectent les régimes fonciers coutumiers et leur administration, ainsi que les groupes sociaux, dont la plupart résident dans des villages et des communautés régis par le droit foncier coutumier. Nous nous appuyons sur des recherches ethnographiques de terrain menées au Mali, notamment à Bamako et dans ses environs, auprès des principales institutions étatiques chargées des questions foncières, ainsi que dans les zones périurbaines de Kumasi et de Koforidua au Ghana,

en collaboration avec leurs Commissions foncières régionales respectives. La numérisation apparaît comme un outil potentiellement efficace pour résoudre les conflits et les complexités liés aux régimes fonciers coutumiers et aux défis de gestion foncière auxquels sont confrontées les sociétés et les gouvernements des deux pays. Néanmoins, nos résultats montrent que, malgré les efforts de l'État pour intégrer les systèmes et les acteurs du foncier coutumier, en particulier au Mali, la numérisation foncière demeure largement déconnectée des arrangements coutumiers. Les fondements néolibéraux de la numérisation compromettent toute perspective d'équité, dont les bénéfices restent hors de portée pour une grande partie des populations concernées.

Mots cles: Numérisation, foncier coutumier, équité, Afrique, Mali, Ghana

Introduction

In this paper, we examine the ongoing processes of digitalisation in land administration and governance in Mali and Ghana, focusing on how endogenous land tenure and local realities intersect with state-led reforms aimed at enhancing land administration and governance. Drawing on Mali's formation and implementation of local land management bodies (known as *Commissions foncières Villageoises* or Village Land Commissions – COFOVs), as well as experiences of land administration in Ghana, the analysis explores the tensions between formal legal frameworks, digital technologies, and customary land rights. This contribution seeks to understand the dynamics of equity for social groups and the sustainability of land administration, particularly in the peri-urban areas of Bamako, Kumasi and Koforidua. It highlights the tensions

between the digitalisation of land governance, which reinforces individual land interests, and the collective principles of customary land tenure systems. The work however does not romanticise customary land tenure systems, noting that digitalisation may address the complications and inefficiencies of customary tenures. We emphasise that digitalisation could promote efficient land governance and administration for local and national socioeconomic development if it is integrated into customary land tenure systems rather than operating separately from them. We conceptualise digitalisation in line with Fian (2021, cited in Bludnik, 2022, p. 267) and Kusmiarto et al. (2021), who define it as the integration of digital technologies into social and economic life, in this context, into land administration. The concept is based on processes of converting information into digital formats using computing devices. Thus, to formally register land rights, digitalisation involves collecting, scanning, and carefully storing analogue land records such as conveyance notes, deeds, and land titles, among others. Modern digital devices envisaged for use, or already in use, include blockchain, high resolution scanners, drones, advanced GIS systems, software, satellites, mobile phones, artificial intelligence (AI), robotics, and the Internet, among others.

The phrase "Reformatting the commons" in our title reflects the central argument of this paper: that digital land reforms are not neutral technical shifts, but transformative processes that reconfigure shared land systems and provoke grassroots contestation. This framing draws on Étienne Le Roy's conceptualisation of the commons as socially embedded, plural, and negotiated spaces of land governance (Le Roy, 2016), emphasising that digital reforms often disrupt these localised systems by imposing rigid, formalised structures of control and ownership. The Commons philosophy has always been the guiding framework for land tenure in Africa, although it faces

individualised norms through colonial and global connections with Africa (Ramutsindela et al., 2025).

Land governance and administration in Mali have evolved from the use of paper (Doumbia, 2018; Doumbia & Camara, 2021) to the use of digital technology. How does digitalisation shape social reactions and forms of protest? In Mali, grassroots organisations (consisting of urban citizens and households living in precarious conditions) have been working actively since the 1990s for more social justice and democracy in urban land governance and administration. Ghana's state-cum-World Bank-led land administration reforms, some aspects of which are contested by customary authorities, have been ongoing since the early 2000s but lately acquired a digitalisation character. Given this longue durée and the issue's strong connection to colonial legacies, this study contributes to two important strands in academic discourse. It links up with recent decolonial discourses as we observe an accommodation of endogenous perceptions of property to changing circumstances. At the same time, the paper comments on the mutual bureaucratisation of land governance which has led to paralysis and/or massively increasing conflict that will remain of central concern, particularly in the urban landscapes of West Africa.

Since 2014, the Malian government has decided to place particular emphasis on equitable access to land and on strengthening governance, administration, and tenure security. This has been done by improving the institutional and legal frameworks, and setting up functional land registries, which operate as one-stop shops in each of the country's municipalities. According to a statement by the Malian Prime Minister in 2018, the purpose of the land administration reform is to reorganise social relations, to put land at the service of development and to support good governance of the State. In Ghana, land administration reforms have been part of a national

drive, mainly with financial and technical support of development partners such as the World Bank, the International Development Association, and bilateral development partners, to consolidate land legal frameworks and practices for efficient land services delivery (World Bank, 2020). Digital reforms have been underway in the land sector since 2014 in Mali and 2011 under the Land Administration Project in Ghana. In both countries, the digitalisation-based reform of land administration converts documentation from manual and paper-based processes into digital forms that are expected to increase efficiency and security of land tenure to encourage investments in land. In Mali, this reform is being implemented through the assignment of a Cadastral Identification Number (NINACAD) to all land plots in Bamako and its surrounding areas, alongside a new territorial division that has already led to the creation of additional territorial communities.

In both Ghana and Mali, digitalisation-based land administration reforms are underway, which will lead to the establishment of digitised land registers. A core component of Ghana's digitalised land administration reform is the implementation of the Ghana Enterprise Land Information System (GELIS). The GELIS seeks the digitisation of all land records and administrative procedures at the Lands Commission. It also adopts block chain technologies, high resolution scanners, advanced GIS systems and software, mobile phones, and modern internet speed. With these tools, land transactions and registration would be authenticated electronically, quickly, and simultaneously by all parties, for instance through the use of block-chains. Digitalisation thus seeks to reduce fraud, conflicts, and complications and enhance transparency and efficiency in land delivery. Mali's reform project is in its first phase, focusing on the district of Bamako and the municipal area of Kati, where the land situation is particularly worrying. Ghana's digitalisation drive is being

implemented in all regional Lands Commissions across the country.

Digitalisation, society, and economy linkages in Africa

This section emphasises the embeddedness of African societies and ecologies. We highlight that literature on digitalisation, society, and economy warn against capitalist individualisation of land and natural resources in Africa, which is at variance with communal resource ownership and tenure in African resource ontology and epistemology. To this end, the digitalisation of land administration and governance risks disconnecting culture and economy from society if society's cultural embeddedness with ecological resources is glossed over. In the Global South generally, Izabela Bludnik identified this challenge as one of the key failures of the digitalisation of land administration (Bludnik, 2022). In addition to land grabbing, Bludnik (2022) identifies that the digitalisation land markets hasa become a means of financialising environmental resources, where land acquired is not used for any productive endeavours but to speculate rents and obtain credit and other financial rewards from global and national financial markets. In Africa, even with the introduction of sophisticated technologies like blockchains and unmanned aerial vehicles (Tan et al., 2021) to generate data on land transactions, caution is needed to identify implications for local people, including understanding from experiences elsewhere how digitalisation affects social groups like women (Jan et al., 2023). By virtue of cultural rules around land that may not be egalitarian, digital systems across Africa face the risk of enforcing male dominated advantages if implemented uncritically to assure equitable social access to land (Djurfeldt, 2013).

Musembi (2007) shows that the rational economic choice approach to land administration to release land for investments, to which digitalisation arguments align, does not align with

African realities in. Musembi notes that while lands are mostly communally owned in Africa and are socially and culturally bound to a community of people rather than an individual, there is also a foundational lack of credit for poor people to access land, even if their property rights are clearly defined as guaranteed in modern tenure security instruments. Likewise, Amanor (2010) argues that evolutionary theories of land ownership mistakenly treat the transformation of property rights as a natural progression toward individualistic, atomised forms of ownership. In most instances they do not, due to social identities connected to land in Ghana and in most of Africa. Ghana's approach to digitalisation draws heavily on the assumption in de Soto (2001), that environmental resources, particularly land, should be moved from cultural and communal tenure into individual secure property as capital. In this work, experiences of digitalisation, as we explain below, show that de Soto fails to recognise and acknowledge the environmental and social consequences of putting too much faith in individualistic tenure of communal land assets.

Common property relations in Africa are fundamentally grounded in ontologies and epistemologies that view people as inherently collective and integrally connected to their ecological surroundings (Ramutsindela et al., 2025). To this end, resource governance, and in the context of this paper, the digitalisation of land governance and administration, that leads to the breakdown of communal property relations and the personalisation of land resources in individuals, ignores and obscures African ecological realities (Ramutsindela et al., 2025). Digitalisation entails the imposition of free market principles on African ecological realities. Polanyi uses the term "fictitious commodities" (Polanyi, 1957) to refer to land, labour and money, emphasising the failure of attempts to impose a free market in land. By representing more of a bond than a commodity, land symbolises the maintenance of economic embeddedness in the

social within societies that can still be considered holistic, according to Baron's elaboration. As a result, the analysis of land tenure practices, especially in urban areas, cannot be based solely on economic and market logics. Land and other resources maintain tenures that remain strongly embedded in social, cultural and political practices of communal societies. Embeddedness in society is the rooting of a social phenomenon in traditional cultures (Polanyi, 1957). It is therefore simply imperative to make a historical diversion in order to detect the ways of seeing, thinking and feeling of the inhabitants that form a complexity in time and space in order to apprehend the notion of the commons in Africa and particularly in the context of urban land tenures in Mali and Ghana.

Social digitalisation (Hahn, 2021) reflects the process of digitisation within the broader context of digitalisation, with its programs and implementations shaped by, and embedded in, specific cultural contexts. Digitisation engenders discontinuances, while programming aims at producing continuance (Hahn, 2021, p. 30). These processes are differentiated solely for analytical purposes, however, since in social reality we can only experience them as intertwined. Social digitalisation is a dynamic that entangles the society and the technical tools for the performance of sustainable land governance. Our argument is that sustainable land governance requires an equitable distribution of land resources. Thus, the expansion of capitalism undermines equity which endangers sustainability (Amanor & Moyo, 2008). Based on the connection of digitalisation, economy and society, Hahn (2021) proposes that Max Weber's classical theory of the connections between economy and society, as set out in his posthumously published 1921 work, *Wirtschaft und Gesellschaft (Economy and Society)*, can be interpreted as a theory that offers useful insights into the dynamics of the digital transformation of land.

As the title of this work suggests, Weber observed a profound and specific interconnection between society and economy established in modern Western societies at the beginning of the twentieth century. Weber analysed this interconnection by deconstructing and identifying key elements of its underlying historical trajectory to better assess probable future developments engendered by the interplay of these elements. Weber's conceptualisation of the interconnection of economy and society was thus based on an approach by which he explored in great depth and details the trajectory of producing and reproducing human subsistence. To better understand this trajectory, Weber drew an analytical distinction between "economy" and "technology" (1978, p. 65) and between "formal" and "substantive" rationality (1978, p. 85). With this analytical distinction, he aimed to offer a more comprehensive and accurate description of how the economy acts as a driver of societal developments. More specifically, this distinction allowed Weber to undertake a comparative analysis of these developments as they unfolded in very diverse cultural, historical and regional contexts. Through such comprehensive comparative analysis, Weber aimed to eventually achieve a more concise and fruitful conceptualisation of the key characteristics of modern Western society. This paper connects with the ideas of Weber and focuses on land governance in Mali and Ghana. It argues that laws should be reformed, not only for enhancing economic growth, but also considering social and environmental goals to guarantee sustainability.

Methods and field research

We use data from ethnographic research in and around Bamako in Mali, and Kumasi and Koforidua in Ghana. Ethnography in this context is the qualitative approach of exploring in depth how the dynamics of, and actors in land digitalisation, customary land

tenure, and land governance in general are connected in current contestations between state and traditional forms of authority over land. Lamine Doumbia, lead author of this paper, conducted fieldwork in Bamako in 2019 and 2020, keenly following the land reform processes at the *Sécretariat Permanent de la Réforme Foncière*. In Ghana, Peter Narh, co-author of this contribution and Lamine Doumbia conducted field research in Kumasi and limited work in Koforidua between 2022 and 2023. In both Mali and Ghana, the researchers conducted extensive in-depth interviews with community members, local leaders, and government land commissions personnel in and around urban areas. Lamine Doumbia sees the fieldwork in Mali as reflexive as he observed and experienced the digitalisation of his plot of land in Bamako.

Ethnographic field research in Mali

During Lamine Doumbia's ethnographic fieldwork in Mali in 2019 and in 2020, many respondents advocated for the digitalisation reform of land governance by the State. They find that municipalities do not have the capacity to manage land affairs within their territorial jurisdiction. The work of NINACAD (Fig. 1) is crucial in this digitalisation process. Yet NINACAD's processes are disconnected from customary law tenure documentation. During an interaction in May 2020 with Mr Coulibaly, one of the identification agents (enquêteurs, in French) of the Sécretariat permanent de la réforme domaniale et foncière. He explained the NINACAD identification process thus:

> The person has to possess an authentic and reliable document of property for the registry. Customary appropriation cannot be registered. The document should be the letter of attribution or the title deed or the construction permit. In the old neighbourhood in Bamako,

> where most people do not have the title deed or the letter of attribution, the family record book (carnet de famille) is accepted for the registration. In this case, the water and electricity bill can help to check the authenticity of the land appropriation. NINACAD does not concern a non-parcelled zone because the system needs the plot numbers. (Interview with participant, NINACAD)

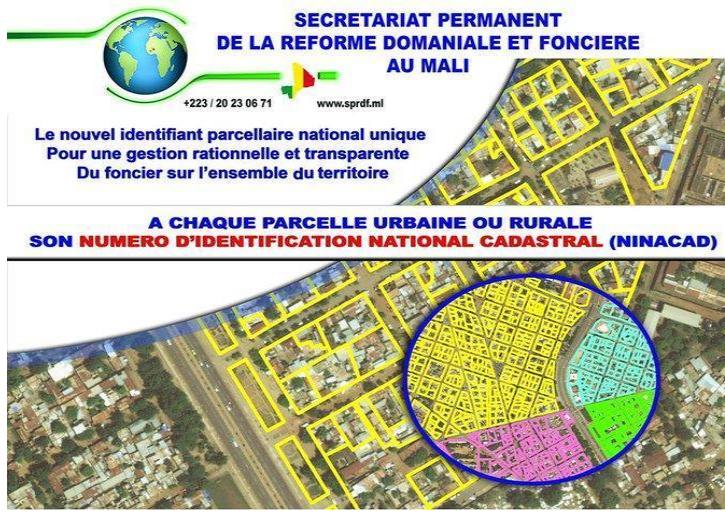


Fig. 1, a post of the NINACAD and Secretariat Permanent de la réforme domaniale et foncière.

This attribution of cadastral numbers could however lay the foundations for new challenges in peri-urban land management in Bamako. Other formalisation efforts, such as the creation of Land Commissions (COFOVs), results from processual struggles of associations and civil society groups of evictees and advocates for transparency in land dealings in Mali. This argument is confirmed by the recent arrests of numerous mayors and other municipal and state actors, presumed guilty of embezzlement and misappropriation of revenues mobilised through land management in Bamako and its surroundings.

Eviction, land expropriation, commodification

This part focuses on land governance and digital technology in Mali. The cadastre is a land management system based on the technical identification and fiscal registration of land lots and parcels. This aspiration is governed by the notion of domaniality (State ownership of land) which makes the state the absolute owner of the land. Are the public domains of communities and the state a myth or a reality? Malian legislators recognise, through Law 96-050, that local authorities of the state have a public domain and a private domain of which they are considered the "owners" (Sarr, 2012). This domain grants these local authorities management and conservation rights. The law also recognises that the state has a certain sovereignty in the transfer of these land rights. Thus, by a simple decree, the state can withdraw part of this domain from these public communities. Section II of Law No. 95-034 on the Local Government Code gives these local authorities the possibility to deliberate on the acquisition of property, among other things. However, in its article 17, authorities are required to consider the opinion of the village and/or fractional council(s).

Similarly, the opinion of neighbourhood chiefs is required before deliberating on matters relating to the public domain. Local authority's express opinions on the ownership and management of their lands as Sara Berry puts regarding the Asante land "Chiefs know their boundaries" Berry (2000). In fact, the problem lies at another level. In matters of land tenure in Mali, the state has unilaterally defined the rules of the game. It claims to own everything that constitutes the public domain. For example, land tenure security is achieved through registration and the issuance of land titles by the state agencies. The people have only the usufruct of this domain, which can be withdrawn at any time according to the imperatives of the state. While these principles have been adopted in urban areas, they are virtually ignored in rural areas

where land is conceived as an inalienable heritage of the lineage and subject to customary law. In this case, the principles of state ownership prevailing in the urban environment very quickly showed its limits through the dynamics of the urbanisation process of the peripheries at the time. The status quo shows nowadays and through our case studies, that appropriation is necessary and that ownership, which is the essence of State ownership of land (dom anialité), is being questioned. This changes everything in terms of land registration.

In customary land systems, land appropriation and access to resources are subject to unwritten rules. Conciliation and arbitration bodies settle disputes with social legitimacy. In practice, however, multiple rights overlap and the actors play on the different registers according to their interests. While the mayor and local councillors have the legitimacy of the ballot box, local rights holders have priestly authority and social legitimacy. What kind of legitimacy should prevail in matters of land tenure? According to Sarr (2012), a code recognising the legitimacy of customary rights should have been developed. The state must therefore transfer some of its prerogatives to local authorities to achieve the necessary harmonisation of rights. However, what we are currently seeing is the maintenance of a uniform land and property code. This code is drawn up by the state administration according to the principles of positive law outside of the control of customary authorities over land. We believe that only a symbiosis based on local practices and carried out by all stakeholders could have the right to exist.

The code of property rights is very clear about the composition of the public domain of local authorities. According to its article 3, the public domain of local authorities is composed of immovable and movable property determined as such by law or having been the subject of a special classification procedure. As for the public domain of the State, a legal

determination or a special procedure of classification is required. Consequently, we understand that the intervention of the legislator is necessary in this matter. It must be recognised that it is usually the state that refers draft legislation to the National Assembly. It is important to note that we are not in a position here to say that a particular natural resource is the property of a particular community. Indeed, as discussed above, apart from airspace, the consistency of the state's public domain has remained the same since the colonial period.

There was no text from the colonial period that provided for the ownership of a territorial authority over the public natural domain in French Sudan (the colonial state of Mali). The state owned the whole of a natural public domain. However, Malian legislators, in taking up this as a continuty, added airspace, which was not part of the natural public domain of the state in French Sudan. The question therefore arises as to whether it is clear from legal provisions in Mali that a specific property in the public domain (state ownership) of nature belongs to a designated territorial authority. In reality, such domains belong to the state, which may not transfer them, but rather make them available to a local authority. This process always leads to the private and individual ownership of a common entity anchored in African, and in this case, urban society. Crucially, it is imperative to understand society's common properties in historical perspectives (Polanyi, 1957). In Africa communal governance and access to resources are the dominant modes through which tenure is framed, just as in the context of urban land tenure in Bamako.

The Secrétariat Permanent de la Réforme Domaniale et Foncière

The government of Mali decided to introduce the land tenure reform through the NINACAD to get rid of the problem of the slow and conflicting land administration and the lack of proper

cadastre. The institution in charge of the identification is the *Secrétariat Permanent de la Réforme Domaniale et Foncière* (see Fig. 1). According to the Ministère des Affaires foncières, de l'Urbanisme et de l'Habitat, the overall objective of the land tenure reform is to rebuild social relationships, to put land at the service of development, to support good governance of the state, and to mobilise financial resources for local authorities. Among the long-term objectives expected from the land tenure reform is a land register covering the entire national territory.

Difficulties and actors' perceptions

Despite nationwide awareness campaigns, identification agents continue to face numerous challenges in the field. Most citizens lack reliable, state-recognised documentation for their land plots, and a large proportion of plots remain unregistered because people do not perceive any tangible benefits from registration. Concerns about administrative fees, the time required, and limited understanding of the registration system further discourage participation. The system also encounters issues of multiple registrations of the same plots by different individuals. Since NINACAD relies on property documents previously issued by municipalities and domanial services, it can replicate existing errors, such as double attributions. However, the system is designed to anticipate potential conflicts and notify the concerned parties and the courts. Resistance to identification is also driven by fears of taxation and the perception that the process is time-consuming due to long queues at the relevant offices. According to Mr. Coulibaly, once property owners are identified by an agent using a tablet (see Fig. 2), the identified individual is issued a document with a reference number at the main reform office.



Fig. 2: Table of validation of endogenous tenure through village land commissions (COFOVs): The Union of Associations and Coordinators of Associations for the Development and Defense of the Rights of the Poor approach
Source: Fieldwork picture of a NINACAD Agent, Bamako, 2019.

The Secretariat developed an application on Google Play to simplify the identification process, allowing people to complete procedures from home and thus save time and effort. However, many citizens either lack the knowledge to install the application or do not have access to the necessary devices and reliable internet connectivity. The identification of land and people through the NINACAD system began in 2017 in Bamako and Kati, but progress has been slow. The process suffers from limited juridical support, as institutions responsible for land affairs have not been collaborating effectively. In an interview, our interlocutor (Agent of NINACAD) highlighted issues of leadership within key institutions, such as the Sécretariat permanent de la réforme domaniale et foncière and the decentralised domanial commissions.

Securing land tenure remains a critical concern in many rural areas, particularly where customary land rights coexist with formal legal frameworks. In these contexts, endogenous

mechanisms that recognise and validate local practices are essential for ensuring equitable and sustainable land management (Amanor & Moyo, 2008). The Union of Associations and Coordinators of Associations for the Development and Defense of the Rights of the Poor (UACDDDD) has played a leading role in facilitating such mechanisms by promoting the establishment of COFOVs. These commissions operate as community-based institutions, managing land tenure and resolving conflicts before they escalate to formal courts.

Validation of endogenous land tenure

This section presents an overview of the validation of endogenous tenure through COFOVs, focusing on the interactive process established by the UACDDDD and anchored in the Loi foncière agricole (LFA) No. 2017-001 and its implementing decree No. 0333/PR-M. It highlights the roles of administrative, political, and customary authorities and the critical steps that ensure community ownership and sustainable land governance. The establishment and operation of COFOVs derive from the Loi foncière Agricole No. 2017-001 promulgated on April 11, 2017. This law and its application decree No. 0333/PR-M issued on April 4, 2018, provide the legal basis for the composition, roles, and functioning of COFOVs. By embedding the latter within the formal legal framework, the law acknowledges and strengthens local land governance structures.

Importantly, Articles 48 and 49 of the LFA articulate the dispute resolution role of COFOVs. Article 48 mandates that conflict prevention and resolution be entrusted to the territorially competent Village or Fractional Land Commission. Article 49 requires that any land dispute first be submitted to these commissions before recourse to the courts is permitted. This legal design reflects a preference for local, participatory

resolution mechanisms grounded in endogenous tenure practices, with the goal of reducing judicial caseloads and promoting peaceful coexistence.

The UACDDDD's 10-step interactive process for setting up COFOVs

To operationalise the legal provisions and strengthen community land governance, the UACDDDD has developed a detailed interactive process consisting of ten essential steps. These steps combine legal knowledge dissemination, community engagement, institutional capacity building, and continuous evaluation.

Step 1: Community sensitisation

The process begins with sensitising village communities during village assemblies about the LFA, its application decree, and the COFOV setup process. This step is crucial to inform community members of their rights, responsibilities, and the benefits of establishing COFOVs, thereby securing their buy-in.

Step 2: Vestibular assembly

Village chiefs from multiple villages convene in what is called a vestibular assembly (Bulon in Bamanankan[1]). In Bamanan societies, legal and judicial bodies are part of the administration in the functionalist sense of the term. This refers to the insertion of standards of conduct by members of society to make it function better. The law is not only state law but also emanates from local social practices (see also Le Roy, 2016; von Trotha, 2006). These can be seen in the "bulon", which is a vestibule in which the council of elders meets to make day-

[1] Bamanankan is the Bamanan language – Bamanan is a mande ethnic group living in Mali

to-day decisions with the aim of governing the local community. In this forum, they select members of the local team by consensus. These representatives participate in the steering committee of the programme alongside UACDDDD officials, ensuring local leadership in decision-making.

Step 3: Training of the local team

The newly selected local team undergoes training to clarify their roles and responsibilities in the COFOV setup process. This training strengthens their capacity to guide the community through the subsequent steps effectively.

Step 4: Elaboration of the local convention

A local convention is developed as a concerted agreement on the management of natural resources. This document defines shared norms, rights, and duties concerning land and resource use, providing a framework for collective action and governance.

Step 5: Establishment of exchange spaces

Exchange spaces are established to foster inclusiveness and social cohesion. These include forums specifically for women and youth groups and a consultation framework at the town hall level. These spaces enable dialogue, build trust, and support peaceful, harmonious local development.

Step 6: Training of local authorities

Recognising the importance of multi-level governance, local administrative, political, and customary authorities receive training on the LFA, the application decree, and their respective roles in adopting local land management conventions and setting up COFOVs. This step ensures alignment and collaboration among various actors.

Step 7: Establishment of COFOVs

With preparations complete, COFOVs are formally established. Their membership reflects a balance of community representatives and local authorities, embedding legitimacy and broad participation.

Step 8: Training of COFOV members

Newly appointed COFOV members receive specialised training. They learn about their mandate, particularly their roles in land conflict prevention, mediation, and governance, which equips them to act effectively as trusted community institutions.

Step 9: Agro-ecological reflections

Communities engage in reflective discussions on peasant agro-ecological land management, integrating traditional knowledge and sustainable development principles. This promotes environmentally sound practices that reinforce local stewardship of the land.

Step 10: Monitoring and Evaluation

Finally, the process includes continuous monitoring and evaluation of COFOV activities. This ensures accountability, identifies challenges, and supports the ongoing improvement of land governance practices.

Roles and responsibilities of key authorities

Throughout this process, the roles of the sub-prefect, mayor, and village chiefs are pivotal. Their administrative, political, and customary authority lends legitimacy and operational support to COFOVs, as follows:

- The **sub-prefect** coordinates the process at the sub-prefecture level, providing oversight and linking local efforts to broader administrative structures.

- The **mayor** facilitates the consultation process within the town hall, helping mediate and integrate COFOV efforts with municipal development plans.
- The **village chiefs**, as custodians of customary authority, mobilise their communities, ensure adherence to local customs, and assist in dispute mediation.

The training provided to these authorities is essential for clarifying their responsibilities and ensuring their active and supportive participation in the setup and functioning of COFOVs. A cornerstone of COFOVs' legitimacy and functionality lies in their role as the first point of reference for agricultural land dispute resolution. This role is explicitly enshrined in the LFA (Articles 48 and 49). The commissions serve to prevent conflicts from escalating by providing accessible, locally grounded forums where disputes can be addressed promptly and fairly.

Ethnographic field research in Ghana

Between July and August 2022, the authors carried out ethnographic research in Kumasi, the Ashanti regional capital in Ghana. We focused on how the digitalisation reform of land administration is being operationalised in Ghana for various actors, including land administrators at the Asantehene's Customary Land Secretariat; individual land acquirers; women, men, and youth usufructuary land users; migrants with tenancy rights; divisional and community chiefs; and officials at the Ashanti Regional Lands Secretariat. Subsequently, in October 2023, we held a one-day interaction at the Eastern Regional Lands Commission, Koforidua, on the same goals from the Kumasi research. In the cumulative two months of field research in both Kumasi and Koforidua, the ethnographic work shows contrasting experiences among interaction participants,

including the recurrent concern among the non-state participants (usufructuary land users and some divisional and community chiefs) that the digitalisation process alienates them and promotes profits and security of tenure for investors and land acquirers at the expense of land ownership and tenure for customary land rights holders at the town and village levels.

For the chiefs closely connected with the Asantehene's Customary Land Secretariat and the Secretariat officers, the digitalisation process at the Regional Lands Commission is a central part of their own land recordkeeping. We observed that the Asantehene's Customary Land Secretariat is connected with the digitalisation at the Lands Commission but does not influence it in any way. The Secretariat receives confirmation from the Lands Commission about the status of land being acquired before issuing a lease agreement for further registration at the Lands Commission, all at the expense of the land acquirer. In this respect, the transactions at the Secretariat are determined by digitised land records at the Lands Commission from which the status of land can be determined. For usufructuary land users, who under customary law hold inalienable rights to customary land, digitalisation is facilitating the alienation of their lands. In her view, a mother in Kenyasi advises the Lands Commission to:

> The Lands people do not even know if the lands they are putting on their documents is originally for a widow or not. I hear now they do things on the computer [digitised recording], but what should go onto the computer is that this land they are putting on the computer originally belongs to a mother or a widow. How can we eat when someone comes and says he has bought this land for a factory, and his name is in the computer? (Interaction participants, peri-urban Kumasi)

This participant's views are similar to those of a group of four young people we met in a marketplace in Kumasi. They note:

> Participant 1: Massa [Master], I come from Ejisu but I do not even know who owns what land there. As a young man, I would be glad to get some land to build and do some job, but it is all gone to urban people buying all the lands. They just go to register it at Lands and it is theirs.
>
> Participant 2: …wait, you think these Lands people help the chiefs or community people? Tell me; I believe when they register land on the computer, they do not even know that most young people in Kumasi do not have lands, yet they register lands for just anyone—including rich people from other places.
>
> Participant 3: I think paper records on land are changing to computers now. I accompanied my uncle to register his land at the Lands [Lands Commission]. But I was wondering how many people there know about how land is registered and if they can manage to also be part of the system to keep their lands. (Interaction participants, peri-urban Kumasi)

These sentiments suggest that many village people see land registration as opaque and feel disconnected from it. They are disillusioned about land administration digitalisation, though it could be beneficial if customary landowners at the community and village levels know how to use it to protect their own lands. These are not new problems and digitalisation sought to address them across Africa. However, the reform process is instead worsening the situation for ordinary people (Bludnik, 2022).

An important challenge of the digitalisation process that we uncovered is that the registration of ownership of customary land at the Lands Commission proceeds on a first-come, first-

registered basis. The digitalisation process does not engage with the dynamics around land tenure and ownership at the village and community levels. Since digitised records facilitate land transactions and registration, contested ownership of land at the customary village level is overlooked and compounded once a party to land is able to endorse the acquisition and registration process. In other words, within the hierarchy of chiefly authority in customary land ownership—below the paramount chief who endorses land acquisitions and is thus closely connected with the Lands Commission—digitalisation does not directly determine how lower-level chiefs give out land to acquirers. This is observed in both Kumasi and Koforidua, for example in Photo 1, where there is no reference to community level lands.



Fig. 3: Client service delivery steps towards digitised registration of land
Source: Eastern Regional Lands Commission, Koforidua (obtained during field research, August 2022).

In peri-urban areas of both Kumasi and Koforidua, customary landowners work closely with customary land

secretariats and have minimal knowledge of digitalisation. However, traditional authorities at the village level who hold allodial rights over land and community people holding usufructuary rights in land in rural areas are not fully aware of digitalisation and their role in it, nor of the precise benefits they could reap therefrom. Two interaction participants, a village chief and his secretary, whom we met at the same time, explained their disconnection from digitalisation:

> Chief: I cannot know what is going on at the Lands office [Lands Commission] in Kumasi since they do not come here to us when they register the lands there. The change from paperwork to computer work is not something I know about well nor understand.
>
> Secretary: You see, it is a long-ago problem where Lands [Lands Commission] will register land for a person who comes to them first. Here, we just give out the land and since we know we are the owners, that is where our responsibility ends, after we give out the allocation note. (Interaction participants, peri-urban Kumasi)

The experiences of these interaction participants show that digitalisation is a float on customary tenure at the lower levels. It is the same old problem with customary land administration in Ghana that digitalisation ought to help resolve. But customary landowners are currently mostly outside the digitalisation process, unable to participate for a myriad of factors, including lack of awareness of how it works or its benefits, or their own indifference. For instance, in Koforidua, the Regional Lands Commission affirms that the digitalisation of land transactions begins once a land purchaser brings this transaction to the Lands Commission for registration. This means that where the land may have been fraudulently or irregularly acquired, the digitalisation process will be unable to determine this fraud or irregularity, compounding an already

complex plural land governance and administration system, especially in peri-urban areas.

Though digitised records can be modified, the block-chain technology where parties to land are instantly aware of and endorse or contest land transactions makes it complicated to modify land records. We infer from the experiences shared by our interaction participants that digitalisation should first ascertain customary land ownership at the village and community levels before records are digitised and officially endorsed. If digitalisation is not connected closely with and does strengthen customary land tenure, it could either consciously or inadvertently become a factor compounding land conflicts from multiple land sales, contested customary authority over land, among others.

Digitalisation and outcomes of equitable land governance in Mali

Field research in Mali shows that land digitalisation is welcomed by customary landowners and users who participate in the process with state agencies. However, some customary owners are also cautious of the benefits of digitalisation to them in view of complicated procedures, poor awareness of the process, and land mismanagement by state authorities at the community and city levels. In land governance in Mali, institutional reforms were previously carried out through the implementation of the Law No. 96-050 of October 16, 1996. The legal framework established the domain of Malian local authorities and organised its management through the revision of the Code domanial et foncier (CDF) (2000). The CDF was amended in 2002 and took over from Law No. 86-91/AN-RM of 12 July 1986, which had previously been the Code Domanial et Foncier en République du Mali. As our field research shows, the land allocated to and managed by local authorities is none other than the territory owned by villages. To this end, an integration of customary land

tenure in formal digitalisation is crucial to safeguard equitable benefits for all stakeholders such as the state and customary landowners. In fact, customary use rights have been confirmed by the legal and regulatory provisions adopted since the implementation of decentralisation. Article 43 of the CDF of 22 March 2000 clearly states that:

> Customary rights exercised collectively or individually over unregistered land are confirmed. No individual or community may be forced to cede their rights except in the public interest and in return for fair and prior compensation. No one may make any use of it that is prohibited by the laws or regulations.

This text gives customary law–based land title the possibility of initiating procedures for its formalisation as a title enforceable against third parties (Article 44). Paragraph 2 of Article 46 of the same code thus removes any doubt about the legitimacy of customary law, as customary rights are explicitly mentioned, recognised and enshrined by Malian legislators:

> Nevertheless, all customary land rights may be cancelled in favour of both public authorities and establishments and applicants for concessions. This opens the way for land speculation and the production of land paper by customary owners (Interaction participant, Bamako)

The same provisions recognise the right of the mayor of Bamako to allocate urban housing concessions and rural housing concessions, although s/he cannot exercise this prerogative without first receiving an allocation from the state to the community. S/he must always refer to the supervisory authority (prefect) and the domain services. Despite this clear authority procedure for land allocation, the production of land paper (with or without legal consistency) is now becoming a trend in land management in peri-urban areas, such as around

Bamako, complicating land governance. It is of increasing interest to private individuals, particularly real estate companies and/or agencies. Since the mid-1990s, there has been an increased presence and multiplication of companies and/or real estate agencies in the land market in Mali. They play a key role in the government's housing policy, as confirmed by Decree N°. 00-274/P-RM of 23 June 2000 (Camara, 2017).

The creation of COFOVs is an alternative that is being introduced throughout the country. COFOV aims at collecting all formal and customary legal decisions and documents of land governance in local villages. The commissions aim to maintenance social cohesion and land tenure security. The members of the commissions are selected to represent villages and they are trained to play their role in the institutionalisation of the sustainability of land governance.[2] In Mali, land reform digitalisation is carried out by assigning a NINACAD to all urban land plots, with a focus on Bamako and its environs.The aim of the NINACAD is to rebuild social relations, put land at the service of development, support good governance of the state and mobilise financial resources for local authorities.[3] The reform is mainly funded by the African Development Bank through the national cadastral direction. It is supposed to be a one-stop window and application system for digital registration of plots, which should enhance the sustainable governance and development.

The COFOVs approach of working with customary land authorities promises respect for endogenous regulations, the enhancement of community trust and the reduction of land conflicts at the local level. Thus, COFOVs offer a promising model for validating endogenous land tenure in the land digitalisation process. Through a carefully sequenced process

[2] https://strugglesforlandforum.net/wp-content/uploads/2022/03/FR-Massa-Kone-Presentation-17-Mars-2022.pdf

[3] Le Secrétariat Permanent de la Reforme Domaniale et Foncière.

involving community sensitisation, capacity building, institutional establishment, and ongoing evaluation, COFOVs are positioned to enhance land tenure security, prevent conflicts, and foster sustainable local development. This holds promise for a local and socially embedded, plural and negotiated approach of land governance that likely equitably serves the interests of all stakeholders, including state and non-state (Le Roy, 2016). However, the success of this approach depends on the effective collaboration of administrative, political, and customary authorities, combined with genuine community ownership. By recognising and strengthening local land governance structures within a clear legal framework, COFOVs contribute to building resilient rural communities where land rights are respected and managed inclusively. However, if customary land tenure is not well integrated into the digitalisation process, this could perpetuate the erosion of customary control over, and benefits to, communal landowners and users. This could compound recurrent conflicts over customary land acquisitions that are prevalent in West African countries, and erode benefits to communities (Amanor, 2013).

Digitalisation and outcomes of equitable land governance in Ghana

Although the literature highlights that individualising land tenure rights and removing them from communal control is usually not beneficial for landowning communities (Amanor, 2010; Otchere-Darko & Ovadia 2020), the digitalisation of land reform in Ghana is limited to a socially oriented approach to ensuring equitable land delivery for investors as well as customary landowners. The reforms make land acquisitions easier for investors, but equity considerations for customary landowners are low. The digitalisation of land administration and governance. As currently implemented, makes it easier for the state to register

land acquisitions from customary owners without addressing problematic areas of customary land tenure such as contested authorities over land, multiple land sales (first come, first registered with the state), poor land demarcations, and encroachments, among others. We acknowledge that customary land tenure has lost significant communal value through the greed and inefficiencies of custodians. As such, we do not romanticise customary land tenure systems over state digitalisation for efficient land delivery. Yet, our field research in Ghana reveals that digitalisation is a way for the state to impose centralised, commoditised, and economic values on customary land and landowning communities. The Lands Act 2020, Act 1036, emphasises state control over customary land disposition through the confirmation of land registration and supervision of Customary Land Secretariats. This provides the basis for state efforts to streamline land administration through digitalisation.

The Ghanaian experience of land digitalisation reveals challenges similar to those in Mali, particularly the complex relationship between the state digitalisation process and customary land administration. In Ghana, the Lands Commission seeks to streamline land administration to enhance efficient and updated land recordkeeping in order to, as it defines it, "unlock dead capital in land, to increase the contribution of land to national development".[4] Using block-chain technology, land acquirers and owners get to register their respective interests in land in a secure digital environment. Paper records on land registration and acquisitions are being digitised and new land registration applications are received, tracked, and monitored virtually. The Lands Commission emphasises that these

[4] Ben Arthur, Deputy Executive Secretary, Lands Commission; Presentation titled 'Digitalization of land administration in Ghana: Transforming the Lands Commission'.

digitising processes enable it to map major land uses, improve spatial mapping and data capture at all levels of land administration, enhance decentralised land administration to the regions and districts across the country, and ensure greater benefits from land for national development.

Expressly visible in the digitalisation of land governance and administration in Ghana are de Soto's (2001) economic ideas around the commercialisation of land to release capital through efficient documentation and targeted investments. In his influential book, *The Mystery of Capital*, de Soto (2001) argues that property rights documentation and clarification are inefficient in developing countries, in view of the strong hold of customary law on land. This inefficiency sustains land tenure insecurity and prevents governments and peoples in these countries from attracting capital investments in their natural resources. Thus, developing countries do not benefit as much as they should from their natural resources for their development. De Soto (2001) views land as an economic resource that must be reallocated from underutilised holders to investors who can enhance its productive and financial value. The reasoning of the Lands Commission in support of digitalisation is founded on de Soto's (2001) ideas. In effect, the state through its Lands Commission blames customary land use and tenure for poor land administration and inefficiencies in harnessing land for development. To unlock dead capital in land through digitalisation means capital is currently not harnessed as it should by those who currently hold land (customary authorities) and the way they administer it.

Digitalisation facilitates individual ownership of resources at the detriment of customary owners, especially those with usufructuary rights. Article 18, clause (1) of the Ghanaian 1992 Constitution provides the right for every person to own property either alone or in association with others. Again, Article 36, clause (4) could be interpreted as encouraging

private capital accumulation, as it states that foreign investment shall be encouraged within Ghana, subject to any law for the time being in force regulating investment in Ghana. These constitutional provisions, however, also stipulate the role of the state to socially protect its citizens from exploitation. In Article 36, clause (8), it obliges the state to ensure that land resources benefit societies that hold customary rights over these lands. Bolstered by these constitutional provisions and global capitalist orientations to land governance as espoused in de Soto (2001), the land digitalisation process in Ghana is fraught with challenges for customary land landowners. These landowners are mostly outside the digitalisation process, unable to participate for a myriad of factors, including lack of awareness of how it works, lack of awareness of access to its benefits, or simple indifference. Moreover, Bludnik (2022) cautions that investors take advantage of the ease of land registration through, for instance, block chain technologies and quickly digitised registration processes to acquire vast lands beyond the reach of usufructuary land users for speculative purposes in some instances. It will be in the interest of both state and customary authorities who authorise land acquisitions to heed this caution in the digitalisation of land reform in Ghana.

Ghana's land governance is not without complex contests involving multiple actors such as the state, traditional authorities, land acquirers, and usufructuary land users. These contestations, including unlawful acquisition of land, poor compensation, multiple land sales, contested registration of land rights, and contested chieftaincy claims that negatively affect land administration, among others, necessitate the digitalisation of land reform. But evidence from our fieldwork also shows that digitalisation does not resolve these contestations. The perpetuation of these contestations and conflicts compounded by digitalisation confirms Musembi's (2007) critique that Hernando de Soto's economic capital ideas for customary land

in Africa, on which land digitalisation in Ghana is premised, is incompatible with communal customary land tenures if not well integrated into formal land reforms. However, the digitalisation of land so far does not respond to these complexities at the local level.

Concluding perspectives

To ensure that digitalisation contributes meaningfully to sustainable land governance in Mali and Ghana, it is not enough to layer technology over existing statutory systems that largely exclude customary institutions. True sustainability must be rooted in social justice, equity, and the formal recognition of customary appropriation as a legitimate source of land governance. This necessitates a shift away from neoliberal frameworks that prioritise ownership and commodification toward models that affirm local practices of land appropriation, stewardship, and community identity.

Étienne Le Roy's (2016) notion of the commons and Ramutsindela et al's. (2025) call for a return to African communal ecological ontologies and epistemologies offer compelling frameworks for rethinking land governance in this context. Le Roy's work challenges the binary of private versus public ownership and instead underscores appropriation (the social process by which communities collectively manage and claim land through customary norms) as a more authentic and locally grounded way of relating to land. Both Le Roy and Ramutsindela et al. remind us that land in many African contexts is not an object of ownership, but a space of social belonging and shared responsibility, rooted in histories and relationships that predate colonial legal impositions. Yet, despite decades of independence, land governance systems in Mali and Ghana have failed to decolonise, precisely because elites have continued to benefit from legal dualism and statutory

dominance. The persistence of this dual regime, where state-recognised land ownership is privileged over customary tenure, perpetuates exclusion, marginalisation, and elite capture. Digitalisation, if implemented without addressing this structural imbalance, risks becoming a tool for entrenching, rather than dismantling, inequality.

In both countries, while efforts have been made to bridge the gap between statutory and customary land administration and governance systems, particularly as is evident in Mali, current digital reforms demonstrate a more horizontal integration between actors that lack vertical integration to adopt customary land administration and governance systems for equitable outcomes. They tend to secure land rights for those who can pay and those who can access digital registration, while leaving out vulnerable populations (women, youth, migrants) whose rights are often embedded in non-monetary customary relations. Furthermore, by focusing on investor-friendly land security to unlock dead capital as in Ghana, these reforms reflect neoliberal assumptions about land productivity and development, rather than empowering customary holders to invest in and develop their own lands with state support.

Therefore, digitalisation must be reimagined as a social and legal project, not merely a technical one. This involves building the capacity of customary institutions and people to engage with digital tools so that they can document, clarify, and uphold their egalitarian norms, and also protect their rights in land through digitalisation. It also requires rethinking what counts as "law" in plural legal contexts. As Hesseling and Oomen (2005) ask, if local norms are lived, practised, and socially enforced, should they not also be recognised as legal sources? A truly inclusive and participatory land governance framework would recognise the intertwining of state and local norms, not as a problem to be overcome, but as a foundation

for meaningful reform. Ultimately, land digitalisation must break away from the colonial and neoliberal legacies that continue to distort African land governance and ecological ontologies. It must affirm the legitimacy of customary appropriation, promote local autonomy over land, and prioritise the empowerment of communities as custodians of their commons. Only through such a transformative approach can digitalisation contribute to land systems that are just, inclusive, and sustainable.

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