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To cite this article: Gavin Shatkin, Taylor Harris Braswell & Melinda Martinus (2022): Mapping and the politics of informality in Jakarta, Urban Geography, DOI: [10.1080/02723638.2022.2059321](https://doi.org/10.1080/02723638.2022.2059321)

To link to this article: <https://doi.org/10.1080/02723638.2022.2059321>



Published online: 14 Apr 2022.



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Mapping and the politics of informality in Jakarta

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ABSTRACT

Recent research has argued that, rather than viewing the “informality” of settlements as an empirically stable phenomenon that can be readily defined and measured based on legal and institutional criteria, informality should instead be viewed as a sociopolitical construct produced by the state in the interests of territorial control. This paper examines the implications of the increasing accessibility of geospatial data and technology for state framings of informality. We specifically ask how state actors have sought to define the “legitimacy” and “formality” of settlement types in mapping, how these mapping efforts have related to change and continuity in discourses and debates within the state about the idea of informality, and how the political dynamics that inform the production of informality have shifted through interactions with communities. We focus on the case of Jakarta, examining recent efforts to map “irregular” settlements, “slums” and “*kampung*” through an analysis of spatial data, interviews with bureaucrats, and a review of literature on community-based countermapping. We find that mapping efforts apply diverse definitions of informality, based variously on legal/regulatory, developmental, or morphological criteria. These efforts are shaped by the path-dependent interests of varied state agencies in legitimizing and enabling state territorial control.

ARTICLE HISTORY

Received 28 April 2020

Accepted 20 February 2022

KEYWORDS

Informality; mapping; geospatial data; urban politics; Jakarta

Introduction

Debates on the meaning of the idea of “informality” have seen significant advances in recent years. Recent research has argued that, rather than viewing informality as an empirically stable phenomenon that can be readily defined and measured based on legal and institutional criteria, it should instead be viewed as a sociopolitical construct. The foundational theoretical innovation is Roy’s (2005) argument that informality is a technique of governing that is deployed by the state through the selective interpretation of laws and regulations, and the selective parceling out of exceptions. The ways in which the state deploys this technique of governing, Roy argues, reflects the extant political economy of state interests. Multiple studies have elaborated on Roy’s formulation, examining state actors’ legal and discursive construction of categories of informality through the selective formulation and application of law and policy, and through the discursive

use of aesthetic categories to delegitimize some users of urban space (see for example Bhan, 2009; Ghertner, 2010).

In her seminal work exploring the relationship between informality and state planning and policy practice, Roy discusses informality as a practice of “unmapping” of the city – an effort to obscure spatial relations in order to allow the state to realize “territorialized flexibility to alter land use, deploy eminent domain, and to acquire land” (Roy, 2009, p. 81). She argues (with reference to Kolkata) that the general unavailability of detailed maps, and the selective representation of the city in maps, are techniques used by bureaucracies to maintain control of processes of legitimation or delegitimation of uses of urban space (Roy, 2003, 2009). Our paper interrogates this question of mapping. It specifically poses the puzzle of what the increasing detail and accessibility of geospatial data and technology, both for state actors and for the public at large, means for the mapping/unmapping of the city. We ask: How have state actors sought to define the “legitimacy” and “formality” of settlement types as they have incorporated new data and new geospatial technologies into the planning and policy making process? How have these mapping efforts related to change and continuity in discourses and debates within the state about the idea of informality? And, how have the political dynamics that inform the production of these categories shifted as mapping efforts have interacted with material conditions and community-based contestations? We posit that the current dramatic increase in the amount and availability of geospatial data and technology has paradoxical implications for the state. New geospatial data and technologies can be used as powerful tools to reinforce and reproduce categories of formality and informality, and to target settlements for delegitimation and potentially for removal. Yet they can also expose inconsistencies and contradictions in state logics, and may thus lead to some reassessment of framings of informality within the state, and contestation from communities based on alternative interpretations of available data.

We examine the case of Jakarta, which has recently seen a recent proliferation of efforts to map spaces deemed informal. We look at efforts to map “irregular” areas, “slums”, and *kampung* areas, all terms that are frequently conflated in state and popular discourse in Indonesia with the idea of “informality”.¹ In Indonesia, the deployment of geospatial technologies has coincided with a transition from an authoritarian to a democratized and decentralized political economy. In this context, different state agencies have deployed geospatial technologies in varied ways to realize particular objectives of territorial control and state legitimation. Even as bureaucrats wrestle with the ambiguities of Indonesia’s property rights system and the historically mixed valence of vernacular *kampung* communities that house a majority of the city’s population, they seek to consolidate their own institutional prerogatives in an era of increasingly contested governance. Recent mapping initiatives have specifically taken shape against a backdrop of efforts by state institutions to assert rights to displace communities in the name of state goals of economic growth, modernization, and hazard mitigation. Evictions have often targeted settlements where many residents have historically asserted rights to occupancy based on autochthonous claims, despite legally established protections of such claims.² In the context of a debate that pits legal and moral claims to land rights versus state assertions of its right to unilaterally define and pursue the public interest, we argue that mapping has emerged as a technocratic space in which state definitions of informality are refined and reproduced, but also increasingly questioned and debated.

Our analysis is based on three methodologies. First, we analyze several recent state efforts to map various aspects of “informality”. These include the mapping of “irregular settlements” in the 2008 Jakarta land use map; the mapping of “slums” undertaken as part of the Cities Without Slums (*Kota Tanpa Kumuh*, or Kotaku) initiative that was initiated in 2015; the *Peta Online* (Online Map) initiative of the Ministry of Agrarian Affairs and Spatial Planning, which includes data on land tenure status for every parcel in Jakarta; and the designation of *kampung* areas in the Jakarta 2030 spatial plan, which was released by the Jakarta Provincial Government in 2012. Second, we interviewed 19 representatives of agencies involved in these mapping exercises at ten meetings held between November 2018 and February 2019. Interviewees included representatives of the Ministry of Agrarian Affairs and Spatial Planning, Jakarta’s Spatial Planning and Land Management Office, Jakarta’s City Planning Department, the Ministry of Public Works, the Department of Housing at Jakarta, the World Bank, and non-profit organizations and consultancies that work on issues of planning and affordable housing. Our interview respondents were identified by contacting the agencies involved in mapping efforts and requesting an interview, and then using a snowball sampling method to identify additional respondents. Our questions probed the logics behind the methodologies for their mapping, and how the act of mapping had influenced their understanding of informality and planning. Finally, we analyze recent contestations over the definition of informality, and the role of mapping in these contestations, through an analysis of community-based mapping and renegotiation of land claims in the prominent cases of Bukit Duri, Kampung Pulo, and 26 North Jakarta eviction-threatened communities represented by the non-governmental organization (NGO) Urban Poor Consortium. Through a review of literature and interviews with actors involved in these cases, we assess the interaction between community-based claims-making and state mapping of informality.

In the remainder of the paper, we first develop a conceptual framework for analyzing state framings of the informality of settlements, and provide a brief historical overview of the state’s role in the production of informality in Jakarta. We then present the findings of our examinations of state framings of informality, of change within these framings, and of the interaction between state mapping and community-based contestation.

Mapping contested ontologies: framing state efforts to analyze informality

Roy’s formulation of informality as a mode of governing has rightly been embraced by scholars as an important paradigm shift. Legalist and functionalist framings have long defined the informal “sector” as a sphere of economic activity that exists outside government law and regulation (Castells & Portes, 1989; De Soto, 2000). Yet these perspectives have generally failed to explain the ways that law and regulation are themselves often defined and selectively interpreted in ways that marginalize some groups and empower others. For example, Bhan (2009) and Ghertner (2010) have argued from the Indian case that aesthetic assessments have often shaped court perspectives on the legality and regulatory standing of low-income communities, while the courts have turned a blind eye to illegal and extra-regulatory practices of the wealthy. In her study of the Mumbai community of Shivajinagar, Björkman (2014) argues that the “reslumming”

of this government resettlement colony occurred through a gradual reallocation of water resources away from the community by state bureaucrats, a shift which forced residents to access water illegally and therefore fulfill bureaucratic assessments of the community's illegitimacy. Here too, aesthetic criteria – the assessment of water bureaucrats that the community's poverty and physical conditions delegitimized its claims to water – played a role in the community's re-delegitimation. Yiftachel (2009) argues from an analysis of numerous cities that the legal and institutional marginalization of racialized and economically marginalized groups is leading to a “creeping urban apartheid”, as state authorities exercise control over these groups through their legal status in work, residence, and access to services.

How, then, do state efforts to map informal settlements interact with the definition and meaning of informality? As Crampton (2001, p. 243) argues, maps are “strategies and relations of power-knowledge” that “trac[e] out the genealogy of power discourses,” and can thus provide a lens into the political projects that mapping is intended to support (Crampton, 2001, p. 243). Yet maps can themselves also become arenas of contestation, as they reveal sensitive spatial data that can be used in unintended ways. Maps may reveal contradictions or inconsistencies in state definitions and operationalization of informality, for example where an overlay of data on land tenure status and urban development plans reveals bias in state agendas of urban development against one social group and in favor of another. They may also provide a basis for mobilization and allegiance building among groups who perceived that they are being targeted for removal. It is for these reasons, Roy (2009) argues from the Indian case, that state and municipal governments have engaged in practices of *unmapping*, by producing representations that obscure certain spatial relations, or by simply not mapping certain types of data. However, as spatial analysis technologies have grown in sophistication and accessibility, and as demands for improvements in the collection of spatial data have emerged from international organizations like the World Bank, and from state technocrats who view such technologies as essential to decision making, state agencies have engaged in ambitious new mapping efforts. State actors have therefore confronted the challenges of translating the fraught ontologies of informality into mappable data, and of deploying these technologies in ways that support state objectives.

Yet the state itself should not be viewed as a unitary and coherent entity that interacts with informality through a singular logic (Follman, 2015; Haid & Hilbrandt, 2019). As Haid and Hilbrandt (2019, p. 4) argue, the state:

... comprises different bodies, departments and governmental units of different scales, with conflicting political interests, as well as actors in various positions and levels of influence, from high-ranking politicians to department chiefs, public officials, planners and street-level bureaucrats. Through this heterogeneity that constitutes the state, the state is prone to contradictions, conflicts, irrationalities and inconsistencies – opening up spaces for manoeuvre and negotiation.

The study of informality, therefore, requires a granular accounting of how categories of informality are produced, reproduced, and contested through interactions between various elements of the state and other actors. Indeed, the moment of mapping provides an opportunity to undertake such an accounting. As will be discussed in greater length in the next section, our review of the literature on mapping “informal settlements” and

“slums” identifies three distinct methodological strategies for defining informality, each of which mobilizes a different rationale for state intervention. These are a legal/regulatory framing, a developmental framing, and a morphological framing. These different framings reflect the varied interests and institutional imperatives that state actors seek to realize in defining informality, alternately of territorial control, vote banking, and state legitimation.

While previous research has paid some attention to the relationship between mapping and the politics of informality, the focus of previous studies has largely been on the use of community-based mapping as a counter-strategy to the informalization of communities (see for example: Archer et al., 2012; Hasan, 2006; Karanja, 2010). Case studies of community-based planning processes from a variety of contexts in Asia and Africa have framed community-based mapping as an essential step in a process of community organizing that “empowers the city’s poor, as it gives them informational advantage” in a context where the perspectives of communities are often ignored in planning processes (Archer et al., 2012, p. 117). Community-based mapping has been analyzed in these studies as an essential way for communities not only to gain insight into their own conditions, but also to develop an empirical base from which to counter state efforts to marginalize and delegitimize settlements as a means to gain leverage in efforts to control or displace them. Our analysis is complementary to these previous studies in that it examines the less thoroughly researched question of how state agencies themselves seek to gain leverage through the mapping of informality, and the ways they use mapping as a discursive tool to realize state objectives.

Our analysis of state strategies of mapping informality is also intended to contribute to scholarship on critical geographic information systems (GIS), which has long interrogated the implications of geospatial technology adoption for questions of democracy and governance (Haque, 2001; Pickles, 1995). State deployment of geospatial technologies to create rationalized representations of space for particular surveillance or development goals is a phenomenon identified across numerous contexts (Lin, 2013; Mukherjee, 2018; Rose Redwood, 2012). These state-led mapping processes have been associated with political economic transition. Drawing from the case of urban governance in China, for example, Lin (2013) articulates how geospatial technologies evolved into active urban governance tools, with urban elites aiming to shape space for capital accumulation and social control amid a neoliberalizing environment characterized by inter-urban competition. Our analysis builds on such findings by focusing attention on the specific question of the mapping of informality as a technique of territorial control in shifting political and economic conditions.

In Indonesia, the state’s embrace of geospatial technologies has taken place in a context of a profound shift from an authoritarian to a decentralized and fragmented mode of governance. The Indonesian state has historically taken a strongly instrumentalist perspective on property rights, systematically delegitimizing autochthonous claims and claiming strong state powers to acquire land for infrastructure development or transfer to private developers (Thorburn, 2004). Yet, since the fall of the authoritarian New Order regime of President Suharto (1965–1998), in what Herlambang et al. (2019) have described as a shift from “autocratic neoliberalizing urbanism” to “democratic and rescaled neoliberalizing urbanism”, state actors have sought to achieve territorial

control through an increasingly fragmented set of institutions witnessing some shift towards autonomy, and in a context of electoral competition. In this context, questions of property rights have been subject to increased contestation in the courts, and in popular discourse and political debate.

In the post-authoritarian era, therefore, efforts to define and map “informal” and “slum” settlements have reflected diverse objectives and strategies within the state, alternatively to preserve state prerogatives in shaping urban development through spatial planning and urban and infrastructure investment, to enable land acquisition, and to legitimate the state through the pursuit of developmental objectives. Many bureaucrats have continued to rationalize a strong state hand in relation to autochthonous land claims on the basis that the state needs to maintain its capacity to plan for and achieve infrastructure and real estate objectives, and to mitigate hazards, notably Jakarta’s growing crisis of flooding (Padawangi & Douglass, 2015; Shatkin, 2019). Bureaucratic mapping efforts have also arguably reflected a post-authoritarian political economy in which powerful economic interests, whose influence is a legacy of the New Order political economy, continue to exert considerable influence over the direction of spatial planning. While planning bureaucrats do act with some autonomy, they operate within a planning framework that is premised on the realization of planning objectives through the agency of a powerful class of private developers whose interests lie in the weakening of autochthonous claims.

While a full treatment of property rights in Jakarta is beyond the scope of this paper, suffice to say that Roy’s argument that informality is produced by the state resonates strongly in this case. What are deemed “informal” settlements in popular discourse are mostly located on lands where residents have historically held autochthonous claims that were established under Dutch colonial rule and were explicitly recognized in post-colonial legislation (notably the Basic Agrarian Law of 1960) (Leaf, 1993). The dualism between lands held under registered freehold title and other usership claims, and those held under legally recognized autochthonous claims, is to some extent visually manifest in the contrast between developer and state-built areas, and low-rise *kampung* settlements with mason-built homes and organically formed street networks, although as will be discussed later the latter type of settlements often contain significant numbers of households who have registered their claims and obtained freehold title. Yet bureaucratic valence of autochthonous claims has gradually eroded for a variety of reasons, some of which are clearly related to inconsistent and contradictory practices of the state itself. These include irregularities in the registration of sales and inheritance of *kampung* land (which is partially due to inconsistent practices in local bureaucracies), and the inability or unwillingness of many claimholders to register and title lands (which studies have indicated is due in part to corruption and inefficiency in the National Land Agency, or Badan Pertanahan Nasional [BPN]) (Fitzpatrick, 2007). As the analysis of state mapping exercises that follow will illustrate, the non-accordance of *kampung*s with spatial planning regulations is also a factor in their informalization, so that such settlements sometime come to be labeled as “informal”, “irregular”, or “slum” regardless of the mix of freehold, autochthonous, and other claims they contain.

This gradual erosion of the legal, institutional, and political standing of autochthonous claims has provided a mechanism through which the state can assert power to reshape urban space. During the Suharto era, the authoritarian state sought to use this power

to gain control of urban and urbanizing land for infrastructure, and to distribute patronage to oligarchic cronies through real estate development (Winarso & Firman, 2002). In the period since the fall of the Suharto regime, successive governors of Jakarta have used the leverage gained through the delegitimation of autochthonous claims to displace settlements in the pursuit of a variety of planning agendas. There were notable eviction pushes under Governor Sutiyoso (1997–2007), who pursued an agenda of urban revitalization and modernization, and Governor Fauzi Bowo (2007–2012), who sought to increase green space in the city to meet the requirements of new zoning legislation (Irawaty, 2018). More recently, Governor Basuki Tjahaja Purnama (2014–2017) undertook a wave of evictions for flood mitigation measures, notably the “normalization” (through widening and concretization) of river embankments (Dovey et al., 2019; Leitner & Sheppard, 2018).

The post-authoritarian era has seen some effort to protect autochthonous and other non-title-based claims. A spate of reforms has sought to ensure procedural regularity in determining tenure status and compensation in cases of eviction, and the Indonesian government has undertaken a series of drives of register unregistered lands, and provide title to holders of autochthonous claims. Ultimately, however, evictions have continued, and have often reflected the perception among state bureaucrats that autochthonous claims have been illegitimized by their non-compliance with contemporary planning norms (Tilley et al., 2017). Approximately 14,000 families were evicted in 2015 and 2016. In addition, recent legislation and regulations have sought to expand state land claims. These include: Law No. 7/2004, which expanded state management rights over water resources and land adjacent to water bodies; Jakarta’s Bylaw on Public Order No 8/2007, which among other things “prohibits settlement along riverbanks, parks, and green space” (Irawaty, 2018, p. 46); and Spatial Planning Law No. 26/2007, which mandated that 30% of urban land be allocated to green space (Rukmana, 2015). These and other laws have provided new rationales and created new imperatives for assertive state control over land, and in some cases the removal of *kampung* communities.

In summary, contemporary state framings of informality reflect a political economy defined by the erosion of autochthonous claims, the persistent assertion by state actors of powers to delegitimize settlements through law and regulation, and increasing land values that have fostered a steadily growing housing crisis. In this context, the terminology of “informal settlement”, understood as a settlement that state actors deem to be either unregulated by or in violation of laws and regulations of property rights and land use, can be applied to any combination of three analytically distinct conditions.

- Settlements on land held predominantly under autochthonous claims that many bureaucrats view as having been delegitimized through the erosion of customary institutions, bureaucratic irregularities in practices of registration or transfer of property claims, or due to their non-compliance with aesthetic or developmental criteria of the state.
- Settlements that are in violation of various spatial planning regulations, for example by being constructed on land deemed to belong to the state based on its proximity to water bodies or its zoning as a green space or forest area.
- Settlements that were built on state or private land that lack any documentation of historical or current autochthonous claims.

In interviews for this research, respondents in state agencies were often careful to note that while the English language terminology of “informal” was frequently applied to all of these circumstances, there were important differences in the legal and political circumstances of each. As we will see in the next section, these differences are expressed in part in differences in the terminology applied to different situations, e.g. slum, irregular settlement, or squatter settlement. The next section will examine the relationship between state objectives and mapping strategies in Jakarta, and the spatial dynamics revealed through mapping efforts.

Mapping informality in Jakarta

This section examines how state exercises in mapping informality in Jakarta have unfolded in the post-authoritarian setting of contestations over property rights described above. In the sub-sections below, we first analyze the methodology of each of these maps, the state strategies they represent, and the contrasting spatiality of informality that each map reveals. We then discuss the dynamics of change in state framings of informality and their relationship to these mapping exercises. Finally, we discuss the role of maps and mapping in state-community contestations over property rights. The argument that unifies all of these analyses is that the mapping efforts examined here represent a critical discursive moment at which institutions pursuing varied state imperatives seek to consolidate their authority in the era of “democratic and rescaled neoliberalizing urbanism” described by Herlambang et al. (2019). In this increasingly fragmented institutional context, state actors have embraced geospatial technologies within bureaucratic siloes in which mapping methodologies have unfolded as mechanisms to gain legal and discursive leverage to exert territorial control through the representation of new regimes of planning and regulation. Within these siloes, these mapping efforts have reflected the ways that state operationalizations of informality have shifted in response both to engagement with the empirical conditions of communities, and changing political dynamics.

Maps as bureaucratic tactics of territorial control and legitimation

As summarized in Table 1, state actors have deployed the mapping of informality in support of a number of objectives, including master planning, economic development, infrastructure development, and the achievement of the UN’s Sustainable Development Goals for “slum” eradication and provision of basic services. These objectives differ in the underlying rationale for different state agencies to act on informalized settlements, alternately to define and pursue a “public interest” (for example of economic development or hazard resilience), and to enact state benevolence through community development. As such, they reflect the different stances of these agencies in relation to communities, alternately to document their property rights claims, and to represent their physical and morphological conditions as they contrast with state planning objectives.

These mapping exercises represent the spectrum of framings of informality discussed in our previous review of the literature on methodologies of mapping “slum” and “informal” settlements. These include:

Table 1. Summary of geospatial analyses of property rights, “slum” settlements, irregular settlements, and kampung.

	Purpose	Framing of informality	State logic
Peta Online Ministry of Agrarian Affairs and Spatial Planning	To catalog property rights claims and land values in order to provide state agencies with a tool for implementing land registration and land acquisition.	Housing units with unregistered land claims	Legal/regulatory framing intended to enable state territorial control through land acquisition and land registration.
Kotaku slum map Ministry to Public Works	To identify “slum” settlements for remediation and/or relocation.	Variables related to building materials, layout, density, infrastructure access, and location in hazard zones	Developmental framing intended to legitimize the state through adherence to international guidelines for slum improvement
2008 Jakarta land use map Jakarta City Planning Department	To catalog existing land uses to use as a basis for spatial planning.	“Irregular” settlements as determined by a subjective assessment of the morphology of road layouts and rooves.	Morphological/aesthetic framing intended to legitimize and enable state territorial control through spatial planning and regulation
Jakarta 2030 Spatial Plan Jakarta Spatial Planning and Land Management Office	Land use designation as a basis for future planning and regulatory decisions.	Kampung settlements as defined by subjective assessment of aesthetic and cultural characteristics	Morphological/aesthetic framing intended to identify and promote cultural heritage sites for tourism and leisure.

- A legal/regulatory framing, which views settlements through the prism of property rights and land use and zoning regulations.
- A developmental framing, which legitimizes intervention based on ostensibly objectively definable criteria regarding the implications of the physical conditions of settlements for quality of life and public health.
- A morphological framing, based on assessments of the visually “unplanned” character of settlements that are often rooted in unspoken aesthetic judgements.

The distinction between these framings is not always discrete and clear. It is not necessarily evident, for example, whether variables such as material used in the construction of walls and rooves of houses have been identified because they constitute a subjective concern about the aesthetic characteristics of a settlement, or as a matter of real concern to safety and quality of life. Moreover, many of the variables used in the construction of developmental or morphological definitions have their roots in the legal/regulatory status of settlements. For example, the irregular nature of road networks or the lack of setbacks of buildings from roads or water bodies is often related to the development of communities outside of government regulation. At the same time, however, many households in “irregular” settlements have in fact registered for title to their properties. We will discuss the implications of this overlap and disjuncture in the spatiality of various criteria at greater length in the following sections.

The *Peta Online* (or online map), which was viewable on the website of the Ministry of Agrarian Affairs and Spatial Planning beginning in 2017, corresponds most closely to the *legal/regulatory* framing of informality. This framing defines households as informal based on the weakness or nonexistence of a legal foundation for their land claims, and their consequent existence outside the state's planning and regulatory framework (see for example Castells & Portes, 1989; Razzaz, 1993). Recent decades have seen a significant push both by multilateral organizations (notably the World Bank), and by governments, to improve land registration and cadastral systems in order to better document the legal status of landholdings (UNCHS, 1990; World Bank, 2016). This push has been influenced in part by De Soto's (2000) famous call to unlock the economic power of the multitude by enabling them to obtain titles to property, and his further call to improve information infrastructure for land management (Home, 2013). Improvements in cadastral systems also have important implications for land acquisition for urban development, and are therefore critical to the assertion of state authority in spatial planning and infrastructure development. Hence the *Peta Online* map has emerged from dual objectives of territorial control and state legitimation.

The *Peta Online* provides information on land value aggregated to land value zones (*zona nilai tanah* or ZNT) and property rights status (including whether land claims are registered or unregistered) at the parcel level. Its release represented a remarkable step forward in transparency and information sharing, as data on these variables had previously been elusive even to officials involved in spatial planning. The release of the data occurred shortly after the 2015 move to create a new Ministry of Agrarian Affairs and Spatial Planning (referred from here on by its Indonesian language acronym ATR-BPN) through a merger of the BPN, which was tasked with managing property rights and ownership and registering unregistered parcels, and the Department of Spatial Planning within the Ministry of Public Works. This move was intended in part to better coordinate these two functions. Its release was also part of a push by this new agency to achieve its stated objective of "full" registration of parcels in Jakarta by the end of 2019 (although one respondent from the agency confided that these efforts were restricted to only those parcels that are not subject to any contestation over property claims, and that many parcels would in fact remain untitled). Our analysis of the *Peta Online* is limited because the agency refused to release the dataset on property rights that is used to construct the online map, although they did provide us their database on land values. Our insights on property rights from this map are therefore limited to viewing the static maps that were available online.

Another mapping effort that corresponds with the legal/regulatory framing of informality is the designation of *kampung* areas in the land use maps produced as part of the Jakarta Spatial Planning and Land Management Office's Jakarta 2030 spatial plan (DKI Jakarta, 2012). The 2030 spatial plan identifies future planned land uses for all land in the city as a basis for planning and land use management decisions. Unlike the other mapping initiatives analyzed here, therefore, the spatial plan attaches a positive valence to a small subset of communities for which the Jakarta Spatial Planning and Land Management Office has selectively chosen to retain the terminology of "*kampung*". We will discuss the spatiality of *kampungs* in these maps, and the institutional rationale for the definition of *kampung* they embody, later in this section.

The *Kotaku* effort to map “slum” communities, undertaken as part of a World Bank supported slum upgrading effort, corresponds most closely to the *developmental* framing of informality. Developmental approaches to mapping informality define the legitimacy of settlements based on objectively definable developmental criteria, such as household access to basic infrastructure (water, sanitation, sewerage, electricity), building materials, and floor area per capita (Cities Alliance, 2012). They, therefore, focus attention on material living conditions, and emerge from strategies of state legitimation through community upgrading. The push to define and map developmental criteria have specifically been shaped by the “Cities without Slums” initiative of the World Bank and UNCHS backed Cities Alliance, and Target 11 of the UN’s Sustainable Development Goals (SDGs), which sought to improve the lives of 100 million slum residents by 2020 (Arimah, 2010; Cities Alliance, 2012).

The *slum map* analyzed here is based on a methodology developed by Indonesia’s Ministry of Public Works, and was implemented by the Jakarta Spatial Planning and Land Management Office. In 2015, the Indonesian government, under its National Medium Term Development Plan, launched the *Kotaku* (*Kota Tanpa Kumuh*, English “Cities without Slums”) project, which was partially funded by the World Bank, and clearly reflected the influence of the World Bank and Cities Alliance (Cities Alliance, 2012; World Bank, 2016). The project targeted slum settlements either for in situ upgrading or resettlement, and aspired to remediate all slums in Indonesia by 2019. The *Kotaku* initiative was preceded by an effort to map slums under the Slum Alleviation Policy and Action Plan (SAPOLA), also funded by the World Bank (Ministry of National Development Planning, n.d.). The methodology involved the identification of slums based on 16 variables related to building materials and layout, density, quality and comprehensiveness of the road network, access to water, drainage, wastewater and solid waste management infrastructure, and fire protection infrastructure (Ministry of Public Works and Housing, 2018). The guideline documents further develop a typology of slum settlements, including those built over water, on water banks, on slopes, and in areas prone to flooding, earthquakes, or other disasters. Land tenure was not identified as a criterion – interview respondents argued that this was partially because the *Kotaku* project was focused on meeting targets for infrastructure improvement, and partially because land tenure status was often contested and difficult to assess, and an effort to document it would prove arduous and slow down project implementation.

In a 2007 article, Gilbert takes the Cities Alliance to task for resuscitating the term “slum” in its reports and programming. His concerns are two-fold: first, that the use of this emotive term will reproduce myths about the depravity of the poor and their settlements that “years of careful research have discredited” (Gilbert, 2007, p. 710); and second, that the term slum is a relative concept that cannot be universally defined, and its use and attendant promises to eliminate slums thereby opens the door to an ever-expanding push to identify “problematic” communities and target them for elimination through relocation. As the *Kotaku* initiative has unfolded, Gilbert’s concerns have only partly been borne out. Under the relatively reformist national administration of President Joko Widodo, and with input from the World Bank, *Kotaku* has unfolded as a targeted and strategic effort aimed at two primary objectives: meeting the UN’s Sustainable Development Goals; and freeing some land for the achievement of spatial planning objectives. The latter objective has sometimes entailed resettlement, or reblocking and land

sharing, i.e. the movement of residents to densified housing on a portion of the site in order to free the remainder of the site for new development. The program has targeted a discrete set of settlements, and, particularly in the aftermath of a series of controversial evictions for flood mitigation projects in 2014, the city administration has sought to improve practices of community input in slum remediation planning. Nevertheless, one assessment of the program found that numerous settlements that had documented land rights had been resettled under Kotaku (Sholihah & Chen, 2018). Moreover, where they have attended displacement, slum alleviation projects have led to the economic marginalization of communities, and decreased gainful employment among inhabitants.

Finally, the 2008 *Jakarta land use map*, undertaken in support of the 2030 Jakarta spatial plan, corresponds most closely to the *morphological* framing of informality. The morphological approach focuses attention on the visual character of settlements – their apparent nonconformity with planning regulations, as manifest in their deviation from the characteristics of planned urbanism deemed of interest to the actors engaging in categorization. The use of morphological criteria is most apparent in the call in recent literature to use remote sensing data to detect slums and measure their growth over time, through the empirical definition of slums forms and the use of machine learning (Mahabir et al., 2018; Pratomo et al., 2017). Such studies necessarily tend to use morphological criteria (e.g. the form of road networks and rooftops, and the size and materials of rooves) as proxies for legal/regulatory and developmental criteria. Yet by assuming correlations between morphological, legal/institutional, and developmental variables – correlations that are at best partial – such studies often reinforce the systematic political and legal marginalization of organically formed settlements in the eyes of state actors and aid agencies, regardless of their relative legal and regulatory standing or the quality of their infrastructure. Indeed, morphological approaches arguably tend to lend themselves to state strategies of territorial control, as they provide a discursive means of demonstrating the “non-modern” character of settlements that state actors can use to rationalize state modernization and rationalization drives.

The *Jakarta land use map* is developed periodically by the City Planning Department of Jakarta to use as a basis for spatial planning. The most recent updates were completed in 2002 and 2008, and an additional update was being finalized at the time of this writing. The 2008 map identifies a category of “tidak teratur”, or “irregular” settlements that occupy a large swath of lands spread across the city. These are largely the same areas that were identified in the 2002 map as *kampung* – we will discuss the significance of this change in terminology in the next section. Due to the distance of time and the lack of publicly available documentation it is not entirely clear how the 2008 and 2002 maps were compiled. However, interviews with staff involved in the update of the map indicate that the current methodology involves a visual analysis of aerial imagery to trace out areas that appear based on street patterns and the arrangement of rooftops to have developed “organically” and outside the spatial plan. Our analysis of the 2008 map appears to confirm that it was developed using a similar approach of morphological analysis.

Figure 1 illustrates the significant variation in the spatiality of areas identified as irregular, slum, and *kampung* respectively in the Jakarta land use map, the slum map, and the Jakarta 2030 spatial plan. The City Planning Department’s land use map identifies 17,643 hectares of irregular settlements, as compared to the 21,512 of land identified as planned

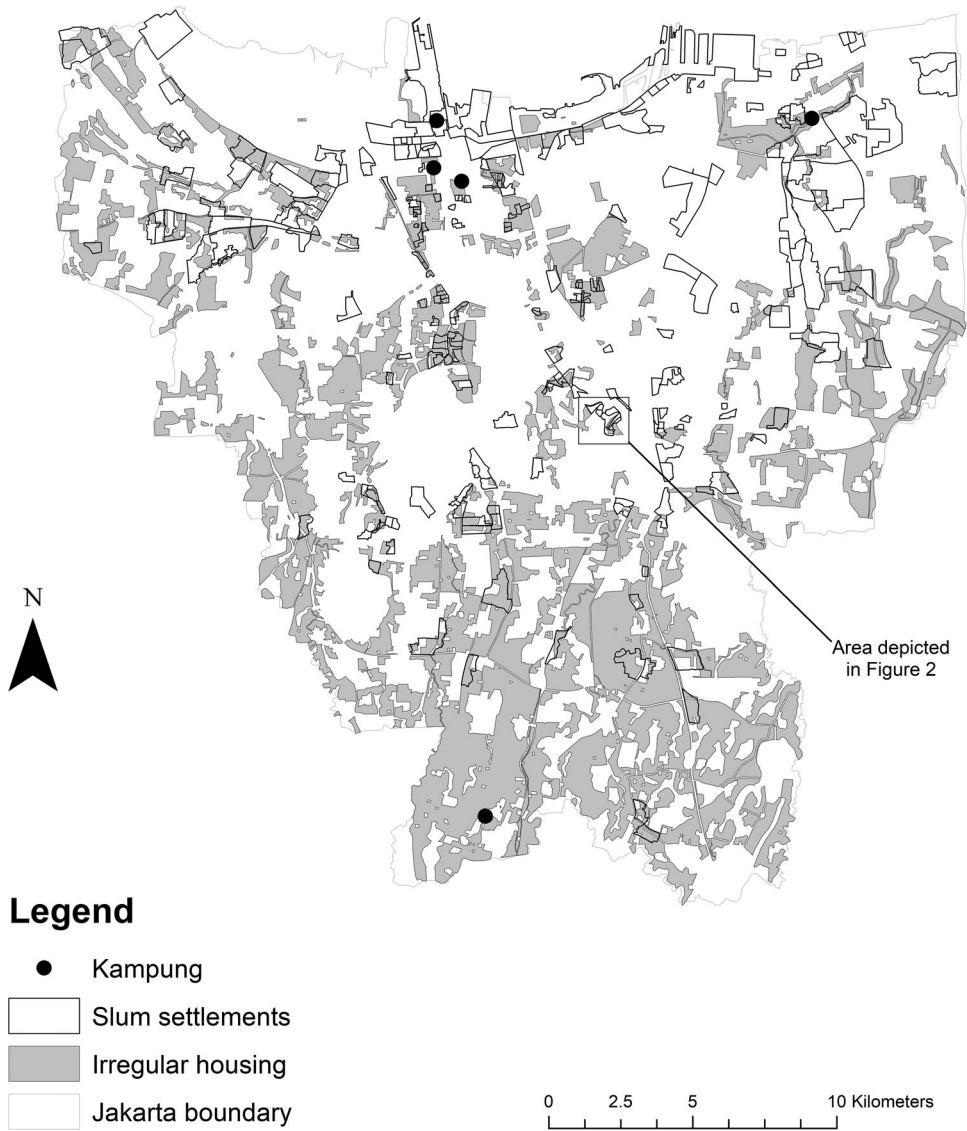


Figure 1. Slum settlements, irregular housing and *kampungs* in Jakarta. Sources: Irregular housing data are from the 2008 Jakarta provincial land use map, DKI Jakarta’s City Planning Department; kampung locations are from the zoning maps of the 2030 Spatial Plan of DKI Jakarta’s Spatial Planning Office, issued in 2012; slum settlements data is from by DKI Jakarta Spatial Planning Office.

“regular” housing areas. These are scattered across the city, but with some concentration in peripheral areas to the south, east and west of the more heavily “regularized” north-central areas of the city. The slum map of the Jakarta Spatial Planning and Land Management Office partially overlaps with the map of irregular settlements.³ “Slum” areas are somewhat concentrated in the north of the city, perhaps because of the concentration of low-wage jobs in this area. Finally, the Jakarta spatial plan identifies a mere 41.7 hectares of land as *kampung* settlements, in five small areas. As will be discussed at greater length later in this section, these areas have been identified as culturally important zones

based on their designation as heritage sites. We will discuss the relevance of this definition of “kampung”, and the shift it implies, at greater length later in this section. Our inability to access the underlying ATR-BPN *Peta Online* data on property rights made it impossible to overlay these data with the other datasets to conduct a systematic analysis of the relationship between land tenure classification and classification as “irregular” and “slum” areas in the other maps. However, it is quickly clear from any comparison of the static online maps on the *Peta Online* website with the Jakarta land use map and the slum map that there is frequently a mix of registered and unregistered land claims in the areas categorized as “irregular” and “slum”, thus confounding any assumptions that the morphological or developmental characteristics of a settlement correspond in a neat manner to legal status.

We further examined the implications of land values for the planned future land use of “irregular” land in the Jakarta 2030 spatial plan, using the data from the *Peta Online* map on land values that the ATR-BPN’s had provided us. In doing so, we sought to understand how land values shaped state intentions towards settlements defined as “irregular”. Based on land values for the entire city, the analysis uses the Jenks natural breaks classification method to divide land values into three categories, which we then labeled “low value”, “medium value”, and “high value”. This process allocated 84.6% of the land classified as irregular housing in the land use map to the “low value” category, 9.9% to its “medium value” category, and .8% of the land to its “high value” category. Our analysis shows a striking variation in future land use outcomes based on land values. Of high value land classified as “irregular settlements” in the land use map, 57.23% is proposed in the 2030 spatial plan for future “CBD” land uses like office and mixed use development, and trade and services. This contrasts with 25.92% in medium value areas, and 5.49% in low value areas. Lower value areas were much more likely to be zoned for low or medium density housing. These differences show a dynamic that is not surprising – that irregular settlements on high value land are identified for displacement in the future land use planning in order to realize real estate driven redevelopment. In sum, this analysis confirms that settlements categorized as “irregular” that are on high value land are more likely to be viewed by the state as subject to transformation through redevelopment. It, therefore, illustrates the objectives towards which the Jakarta City Planning Agency has sought to exercise territorial control through mapping, and the ways that the Agency’s stances towards informalized settlements are shaped by dynamics like land values. It appears from this analysis that categorizing settlements as “irregular” informs spatial planning intended to enable redevelopment according to market imperatives.

In sum, our analysis of these geospatial projects, and our overlay of the resulting maps, reveals the application of mapping to be a discursive strategy used by various state agencies to realize particular territorial objectives. In some cases – for example in the *Kotaku* map – maps are used to enable direct state control. In others – for example in the *Peta Online* map – they are used to give state actors some leverage in targeting areas for transformation.

Mapping practices and the shifting political economy of informality

We next address the question: What is the relationship between the adoption of geospatial technologies, as represented in these efforts to map informality, and dynamics of

continuity and change in state definitions of informality? There are two distinct questions to consider here. The first concerns whether the design and implementation of these mapping exercises has led to substantive reconsideration of the interrelated dynamics of property rights status, physical infrastructure, and aesthetic and morphological features that these efforts use to frame informality. In other words, have these acts of mapping themselves changed the politics of informality by changing the perspectives of state actors on the causes and consequences of the conditions that have led the state to label settlements as irregular, slum, unregistered, or *kampung*? The second question concerns the ways that the deployment of geospatial technologies has reflected shifts the stances of state agencies towards informality driven by some exogenous change. In other words, what changes in the politics of informality are being enacted through the use of mapping as a discursive tool to achieve state objectives?

Concerning the first question, we found little evidence that the mapping exercises themselves substantively changed state understandings of informality. We began this research with the hypothesis that revelations about the contradictions in state framings of informality revealed through data analysis might lead to some reflection and debate among bureaucrats regarding their assumptions about informality. Our approach to addressing this hypothesis was to present interview respondents representing various agencies with a draft of the map presented in [Figure 1](#), and to ask them to reflect on both the variation and overlap of the spaces identified by each.⁴ Our intent in posing this question was to gauge the extent to which the apparent incongruence of legal, aesthetic, and infrastructural characteristics of settlements caused bureaucrats to reconsider the criteria they were applying and the modes of intervention they were employing in their planning efforts.

Responses on this matter were mixed. Several respondents sought to explain the overlapping yet distinct morphological, legal/regulatory, and developmental conditions that characterized areas labeled as informal, irregular, slum, unregistered, or *kampung*. One respondent, a high-level official at the ATR-BPN, provided the most succinct encapsulation of such efforts:

It is not really the same condition between slums, informal settlements, and *kampungs*. *Kampungs* are not always slums. Some are OK. Slums in Indonesian translates as *kumuh* – this refers to conditions of infrastructure, housing, environment, sanitation ... *Kampung* is close in meaning to irregular settlement because it is unplanned, it is organic. Settlements that are not designed and planned may grow into slums, but some may not. Squatter refers more to illegal settlements – people who use private or government land illegally. (Interview with ATR-BPN official, March 4, 2019)

Respondents nevertheless generally acknowledged that discrepancies in the way that data were collected for the different maps sometimes resulted in contradictions that had troubling implications for planning and policy. One example that several respondents pointed to was the reality, apparent in an examination of the *Peta Online* map, that areas mapped as irregular or slum settlements contain many parcels on which residents hold freehold title or documented customary claims. As a respondent at the Jakarta City Planning Department stated, the fact that “tenure status is not connected to developmental status” renders the mapping of “irregular” settlements contentious, as it potentially delegitimizes the state’s practice of targeting such settlements for intervention through spatial planning and zoning (Interview with representative of Jakarta City Planning

Department, February 28, 2019). One respondent also noted that titled properties might also be illegal, for example if they existed in a “green zone” that was deemed unsuitable for residential use. Indeed, representatives of the Jakarta City Planning Department repeatedly touched on the questionable legal status of many settlements that they code as “irregular” – their location in green zones, their lack of title or building permits – before reiterating that it was not possible to capture comprehensive data on the question of legality in their analysis of land uses.

Yet other respondents dismissed the idea that there should be any distinction between the morphological and regulatory/legal categories of the informal. As one official who had played a major role in the development of Jakarta’s most recent spatial plan stated succinctly: “If you want to understand the status of the irregular areas, you have to look at the BPN data on land tenure – the communities where land is not registered, those are the *kampung*” (Interview with former Jakarta Spatial Planning and Land Management Office official, March 5, 2019). This simplistic conflation of the ideas of morphological “irregularity”, lack of land title, and “*kampung*” status is representative of a powerful strand in popular and state discourse.

In sum, our interviews revealed uneven understandings of informality among state bureaucrats – a reflective sensitivity to variation in conditions among some, and a rather dismissive and simplistic perspective among others. Moreover, all of our respondents ultimately rationalized their own mapping exercises as a necessary effort to use geospatial technology to forward bureaucratic planning imperatives, in a context of limited resources. Formulated as they were as siloed efforts in support of path-dependent institutional objectives through the consolidation of territorial control, these mapping initiatives ultimately tended to crystallize extant or emergent framings of informality, rather than to lead to any fundamental reconsideration. These institutional objectives included: the cataloging of land claims in order to enable state land management and regulation (ATR-BPN); the identification of slum areas for remediation in the interest of achieving state infrastructural objectives (Ministry to Public Works); and the cataloging of areas that do and do not accord with state planning regulations as a guide to spatial planning and future efforts at regularization (Jakarta Spatial Planning and Land Management Office and Jakarta City Planning Department).

Concerning our second question – regarding the changes in state discursive strategies reflected in these mapping efforts – our research found state mapping agendas to be shaped in subtle but important ways by the context of Herlambang et al.’s (2019) “rescaled neoliberalizing urbanism”. In the contemporary context of political fragmentation, state institutions have sought to consolidate territorial control both through the cataloging of “unregistered” land claims, and through the use of geospatial technologies to shape discourses of informality/formality and legitimacy/illegitimacy.

The effort to shape discourses of informality has led to subtle shifts in the terminology and empirical definitions of the spaces being mapped. These changes are perhaps most evident in the gradual shift in the meaning of the term *kampung* in state discourse and planning, and the displacement of this term with other terms, such as irregular settlement or slum. This shift is reflected in the Jakarta City Planning office’s land use map, which changed from the use of the terms “high density and low density urban *kampung*” in its 2002 land use map to the use of “irregular settlement” in 2008 (Budiyo et al., 2015). Irawaty (2018) similarly notes the shift in state terminology, most notably

under Jakarta Governor Fauzi Bowo (2007–2012). As one of her respondents, a high-level Jakarta municipal government official, notes (Irawaty, 2018, p. 38):

Within the urban administration, a *kampung* is no longer a term. Normatively, there is no *kampung* in the city. It is still existing in the village. But in the city, there is only an urban village (*kelurahan*).

This assessment of the reason for the non-use of the term *kampung* in official documents rests on the administrative status of areas, and was echoed by our interview respondents. However, it begs the question of why this term was in such common bureaucratic usage in previous Jakarta maps and planning documents, and why this state usage has declined.

This change, we argue, reflects a transition from an authoritarian regime that sought to utilize an idealized framing of the urban *kampung* to assert an ideological agenda of paternalistic control, to a democratized political condition in which state actors have sought to gain leverage in contestations over urban development by redefining what it means to be a *kampung*. Under Suharto's New Order regime, the urban *kampung* emerged both as an important unit of administration and surveillance, and as an ideologically constructed space that resonated with a broader state ideology of "gotong royong" or mutual self-help and deference to state authority (Bowen, 1986; Newberry, 2008). The *kampung* was framed in state discourse as a repository of a distinct national identity that contrasted with the atomization, individualism, and conflict that supposedly characterized Western cultures (Budianta, 2019).

The recent change in terminology seems to indicate a move away from this view of vernacular communities as cultural repositories and building blocks of state power. Scholars have drawn attention to several interacting dynamics that have shaped the ways that the state relates to the *kampung*. Kusno (2012, 2015) draws attention to the gradual incorporation of *kampung* spaces into the capitalist economy through the titling of urban land and the provision of affordable housing through public–private partnerships and financialized modes of housing production. Tilley et al. (2017, p. 84) argue that state eviction pushes have attended the consolidation of state gender ideologies, which have increasingly framed contemporary *kampung* life as unsuited to a state-constructed ideal of womanhood, defined as a "proper housewife and devoted mother" who presides over an ordered and sanitary household. Linked as they are to a broader bureaucratic perception of the cultural degradation of erstwhile *kampung* spaces, both these gendered and entrepreneurial reframing of the *kampung* reinforce the state's delegitimation of autochthonous claims to space. It is this delegitimation that we posit is reflected in the state's shift away from the use of the term *kampung* in its plans and maps.

As Figure 1 illustrates, however, the term *kampung* has not disappeared entirely from state discourse, and an analysis of the spaces that continue to be labeled *kampung* tells another side to the story of the shifting meaning of the term. As noted earlier, the 2030 Jakarta spatial plan applies the term *kampung* to a handful of small areas, totaling 41.7 hectares (.06% of the land area of Jakarta). In interviews, respondents at various city agencies repeatedly pointed to one settlement, Setu Babakan, as a paradigmatic example of what contemporary Jakarta policy views as a *kampung*. Staff at the Jakarta Spatial Planning and Land Management Office and the Jakarta City Planning Department rationalized the special designation of this particular community as a *kampung* based in large part on its cultural heritage – while they also pointed to the relatively low

density and good infrastructure in the community, these conditions do not set *Setu Babakan* apart from many other communities that the state deems “irregular”. *Setu Babakan* is a notable site of the Betawi culture that is native to Jakarta, and has experienced significant investment and is actively promoted by the city administration as a tourism venue. As used by Jakarta city planning officials, if not in popular parlance, it appears that the term *kampung* has been reframed in policy to designate a nostalgic memory of a lost space of heritage and culture, a memory that has some potential to be monetized through the recreation of place-based cultural experience.

In this and the other mapping efforts discussed in this section, therefore, the terminology and methodologies adopted represent efforts by bureaucrats to define categories of settlements that can be subject to state intervention. Defining such categories sometimes requires actively turning a blind eye to the complex, contested and contradictory status of settlements, and an effort to recraft the meaning of certain spaces according to shifting socioeconomic and political imperatives.

Counter-mapping and the state response

The applications of geospatial technologies examined in the preceding sections were developed in response to specific legal and political challenges that state agencies faced in the exercise of territorial control and the achievement of state developmental objectives. We next turn our attention to such challenges, and specifically to counter-claims and counter-mapping initiatives of settlements labeled as informal and their allies in civil society. We examine how these efforts have engaged with and contested the state’s reproduction of categories of informality through mapping, and what impact on the politics of informality they have had in doing so. We focus on recent cases of contested eviction efforts, notably the widely debated eviction pushes in Bukit Duri and Kampung Pulo, and in North Jakarta communities, for the Ciliwung River Normalization Project (CRNP), which was initiated in 2013. These cases saw counter-mapping efforts backed by NGOs that sought to gain political leverage by interrogating the state’s ontology of informality. The topic of community-based mapping and its implications for state definitions of informality is complex, and cannot be treated comprehensively here. In this brief discussion, we focus on the specific question of the relationship between state mapping and community counter-mapping in these widely studied cases, drawing on insights from previous studies and from our interviews with actors involved. These cases have been subject to extensive attention in academic literature, and we refer the reader to these previous studies for details (Colven & Irawaty, 2019; Padawangi et al., 2016; Putri, 2020; Savirani & Aspinall, 2018; Savirani & Guntoro, 2020).

The communities in question have been party to some of the most important legal and political challenges to state-sponsored evictions in postcolonial Indonesia. These challenges emerged in response to a series of evictions between 2014 and 2016 under the City of Jakarta’s CRNP, which sought to mitigate flooding by evicting communities along the Ciliwung River and widening and concretizing the river banks. Following evictions in Bukit Duri and Kampung Pulo in 2015 and 2016, these communities, which had a long history of community organizing in collaboration with the NGO Ciliwung Merdeka, launched a series of legal challenges to the summary nature of these evictions and the city’s violation of laws and regulations regarding administrative procedures for

eviction and relocation. They were joined in some of these court challenges by 26 North Jakarta communities organized by the Urban Poor Consortium, a national NGO. Cases before the Jakarta Administrative Court, the High Court of the Jakarta Administrative Court, and a class action suit before the Central Jakarta District Court, drew on community-based research in claiming that residents' legal land rights had not been recognized in the evictions (Shatkin & Soemarwi, 2020). A further case, before the Constitutional Court, challenged the constitutionality of Law No. 51/1960, which allows the state to evict communities where they occupy land without the owner's consent. The plaintiffs in these cases drew on community-based research to demonstrate their land rights and occupancy of the land in good faith. Following the mixed verdicts of these cases, both Ciliwung Merdeka and the Urban Poor Consortium shifted their attention to separately negotiating "political contracts" with gubernatorial candidate Anies Baswedan, seeking to reach formal agreements on future city policies regarding eviction and community development in *kampung* communities.

Figure 2 zooms in on the analysis shown in the map in Figure 1 to show the relationship between locations identified as "irregular settlements" and "slums/squatter settlements" at the scale of the Bukit Duri and Kampung Pulo communities (the latter indicated in the map by its administrative name, Kampung Melayu). The map shows the contradictory characterization of state mapping efforts at this scale. State categorizations include the full slate of four possible combinations (slum/irregular, slum/regular, non-slum/irregular, and non-slum/regular) all in cheek and jowl proximity with each other. Our examination of the *Peta Online* map further shows that a substantial proportion of households across these categories have registered land rights. In sum, this overlay of varied mapping efforts illustrates the contradictory treatment of the settlement by different arms of the state. It was this contradictory stance of the state – alternately subjecting the communities to eviction on the basis of their ostensibly illegal occupation of the land, and validating their land rights and rights to due process – that became a point of contention and negotiation in the court cases and the political contracts.

While not always formulated in direct response to state-developed maps, the community-based counter-claims brought forth in the court cases and political contracts have reflected a clear understanding of the relationship between mapping and power. Communities have engaged in several counter-mapping exercises that have interrogated state constructions of categories of informality by presenting data that contradict state framings. Bukit Duri and Kampung Pulo had engaged in participatory community mapping and documentation of land tenancy rights in collaboration with NGOs and universities since the early 2000s (Padawangi et al., 2016). During the class action lawsuit before the Central Jakarta District Court, Ciliwung Merdeka:

... presented various proofs of land tenancy right and land ownership: purchase or inheritance documents, agreements of occupation or customary land titling, as well as land and building tax receipts or electricity bills paid by evicted residents. Ciliwung Merdeka also made use of the results of community mapping conducted in 2006–2007 in Kampung Bukit Duri and Kampung Pulo. With some urban sociologists and social workers involved, the mapping processes revealed the historical spatial trajectories of communities, including their land tenancy, since the Dutch colonial era. These versions of kampung history were presented in court during the class action trials by three different witnesses who had been involved in the mapping project. (Putri, 2020, p. 1857)

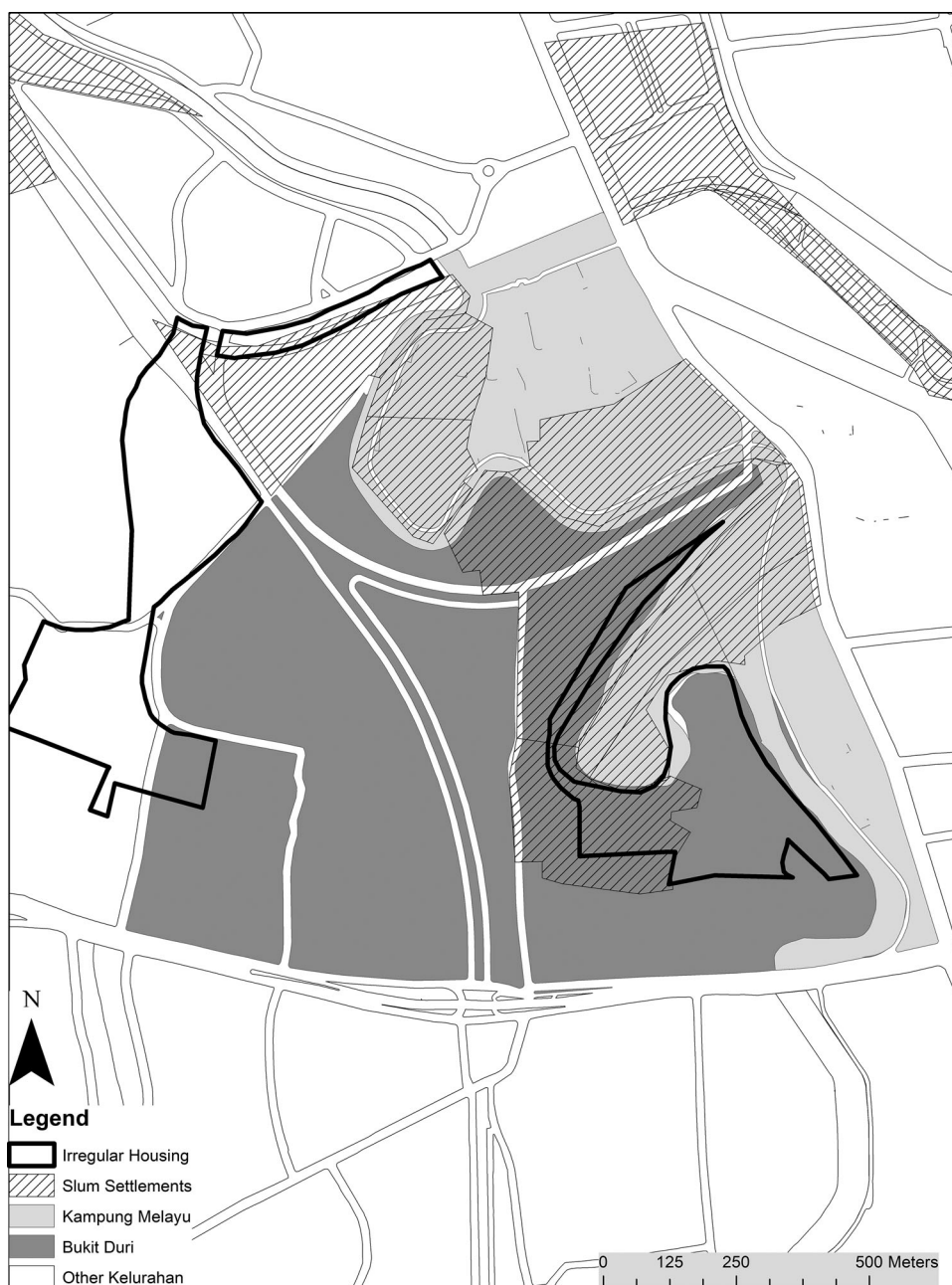


Figure 2. Slum settlements and irregular housing in Bukit Duri and Kampung Melayu. Sources: 2008 Jakarta provincial land use map, DKI Jakarta Spatial Planning Office, slum settlement map of the DKI Jakarta Spatial Planning Office.

These maps also included such details as names of residents of housing units, and uses of public space, that were intended to counter the abstractions and exclusions of state data with richly detailed, community-sourced data. Organizations working with the Bukit Duri and Kampung Pulo had also worked with PetaJakarta, an NGO, to conduct tweet

mapping of a stretch of the Ciliwung River near these communities to document garbage dumps, encroachments, and other conditions that demonstrated the complicity of other actors outside these communities in the degradation of the river shed (Padawangi et al., 2016).

Finally, as detailed by Savirani and Aspinall (2018), the UPC political contract with gubernatorial candidate Baswedan for North Jakarta also engaged state representations of informalized communities by seeking to change the future land uses of these communities in the Detailed Spatial Plan of Jakarta (Rencana Detail Tata Ruang). These changes are based on an intensive analysis of the spatial plan maps and community conditions. The required land use changes were specific. For example, the contract specifies changes from industrial to small scale residential land uses in specific districts and even on specific streets. The intention was to ensure that existing land uses would not be deemed in non-compliance with the land uses laid out in the spatial plan. Baswedan prevailed in the election, and the implementation of the contract has subsequently proceeded, albeit with some political and legal wrangling (Savirani & Guntoro, 2020). The legality of these particular aspects of the contract remains in dispute, with the Jakarta Spatial Planning and Land Management Office claiming that the Governor cannot overturn details of the spatial plan by fiat.

These brief examples of counter-mapping help to illustrate the kinds of challenges to state territorial control that are emerging in post-authoritarian Jakarta. In these cases, communities have exploited new venues for political agency – a judiciary that has grown in independence, a bureaucracy subject to new pressures for accountability within decentralized political systems, and opportunities for electoral influence – to explicitly use counter-mapping to engage state processes of informalization. These dialectical engagements with the state have as yet made only modest inroads. To the extent that they continue to be linked to legal and political challenges to hold bureaucrats and elected officials accountable, however, counter-mapping initiatives are likely to influence and counter-balance future state efforts to map informality.

Conclusion

State mapping in contemporary Jakarta reveals both path dependency and subtle and incremental change in state framings of informality. Working under conditions of resource scarcity and in a context of new forums for community agency, bureaucrats operating under varied imperatives linked to their institutional missions produce analyses intended to rationalize and enable their efforts to act on communities and realize displacement in the name of implementation of policies and plans. Under these conditions, mapping has slid into well-worn bureaucratic tropes, alternately about the dichotomies between the “organic” and planned city, regulated and unregulated spaces, the slum and the non-slum. Ultimately, the geospatial projects analyzed in this paper can be seen as a kind of “opening statement” in spatial planning gambits, an effort to deploy bureaucratic capacity in data collection and mapping technology to support institutional agendas. Yet agencies pursuing different agendas produce contradictory representations. For example, while some of the mapping efforts discussed here (notably *Peta Online*) focus attention on property rights related variables as a key

concern, others disregard property rights entirely, because they are too complex and contentious to easily define, and because they reveal a fragmented landscape of claims that undermines the efforts to assert spatial control that underlie bureaucratic intentions.

In contrast to Roy's description of the "unmapping" of the city, therefore, this study documents bureaucratic efforts to deploy maps in proscribed, incremental efforts to reinforce bureaucratic control in increasingly contested domains of planning. State agencies do so through various tactics – gradual shifts in terminology to shape the valence attached to communities, the use of zoning as a discursive tool to shape imaginaries of urban futures and pasts, and the inscription of morphological categories into planning decision frameworks. For civic groups and academics interested in contesting efforts by those in power to weaken claims of rights to place by communities, efforts to contest state dominance in the realm of data and mapping present both promise and peril. State efforts to map informality open the state to counter-claims and counter evidence that may shed light on the contradictory and subjective nature of state discourses, but communities and their NGO supporters may find themselves at a distinct technological, political, and resource disadvantage in the debates that result. The preceding analysis nevertheless suggests that such counter-mapping has some potential as a tactic for winning legal battles and realizing discrete political objectives of resisting eviction and petitioning for state recognition of claims to land. The specific modes through which communities interrogate state maps and the framings of informality they embody, and the tactics of counter-mapping that they employ to counter state discourses, are potentially rich areas for further research.

From the perspective of theories of informality, the analysis in this paper offers a nuanced portrayal of the fragmented and contradictory ways in which representatives of the state seek to actualize informality through definition and representation. State production of informality in the Jakarta case takes shape not through the monolithic imposition of a unitary logic, but rather, as Haid and Hilbrandt (2019) argue, through heterogenous, and often inconsistent and irrational process that takes shape at least to some extent in dialectical relationship with the claims of communities experiencing informalization. In focusing attention on mapping, this paper has presented one methodological approach to unpacking the heterogeneity of state practices of informality, and of the political conditions that frame the diverse tactics of informalization that state actors pursue.

Notes

1. As the discussion that follows will reveal, our respondents within state bureaucracies frequently used these terms interchangeably with the term "informal", although some provided detailed explanations of the variation in meaning among these terms.
2. We follow Fitzpatrick (2007) in using the term autochthonous rather than customary to refer to these claims, as customary institutions no longer govern land relations in many communities. Legal protections of autochthonous claims are generally founded on the recognition of customary (*adat*) tenure in Indonesian land law. However, as will be discussed later in the paper, the erosion of *adat* institutions has led to the gradual marginalization of these claims in state bureaucratic practice, even though the legal status of many such claims are not reliant on the existence of *adat* institutions.

3. Because this map represents the entire administrative unit in which areas identified as slum settlements are located, it is not possible to determine the total land area of such settlements from these data.
4. Our interviews usually took place in the formal setting of a conference room, and often took the form of a presentation of the mapping methodology followed by questions and discussion. As a result, they provided insight into prevailing discourse in the hierarchical and mission-driven context of the institution, but shed less light on the views of individual bureaucrats. The level of candidness of respondents also tended to correspond to their rank within the organization.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the National Science Foundation's Geography and Spatial Science Program [award number 1759596].

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