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Contents

Spatial information infrastructure and tracking and tackling urban inequalities in India

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This paper is a status report on our research program focusing on how urban governance networks can tackle urban inequalities in Indian cities by using local spatial information infrastructure (SII). Our project integrates two main research questions: (1) what are the 'profiles' of inclusion, exclusion, and adverse incorporation regarding household access to requisite livelihood resources and what are their spatial concentrations, and (2) what are the obstacles that prevent a SII from becoming more locally embedded and institutionalized in content and as platform for use by urban governance networks? The project goals are both scientific and developmental. Scientifically, it will help build a spatially disaggregated model of household deprivations and the inequalities in access to and provision of livelihood resources. Also, it represents an evolution of the contemporary livelihoods approach as it strives to better account for the institutional and relational aspects of urban deprivations and their geography. Developmentally (based on close cooperation with local authorities and community organizations) this work could provide relevant contents for localized spatial information infrastructure initiatives. It is hypothesized that improved locally derived content and spatial disaggregation of deprivations (along with close attention to the types of institutionalized relationships that dominate low-income groups access to needed livelihood resources) will help poverty alleviation programs and city governance target better in terms of location, groups, sector, and needed institutional reforms. First, drawing on the concept of the 'installed base' we discuss the importance of determining the current status and actions of the human and technical resources which could serve as the foundation of a SII that can tackle urban inequalities. Then we discuss the political and ontological barriers that need to be considered while developing this approach. Ontologically, there are issues between how different stakeholders conceive of poverty, inequality, and SII. Politically, there are issues around the type of data collection and sharing this approach requires as civil society organizations, politicians, and bureaucrats are as likely to be adversaries as allies. Also, it is unknown to what extent this sort of SII can alter the present modus operandi or to what extent it ends up being compromised by it. This is because the normative goals of democratizing, rationalizing and technologizing urban planning can be undermined by stakeholders who benefit politically or economically from maintaining the grayness, ambiguity, and decision making monopoly present in these areas. Lastly, we will address how in an era where political space is dominated by a neoliberal governance logic, it is unclear how viable an approach with quality of life and equitable access to collective resources as implied goals can be.

Keywords: entitlements, institutions, spatial information infrastructure, urban governance, urban inequality

Introduction

We designed methods to map the spatial concentrations and diversity of urban deprivations based on a household perspective (Baud et al, 2008). An index of multiple deprivations (IMD) was constructed by employing the livelihoods approach[1] (looking at household levels of human, social, physical, and economic capital) and data from the Indian Census 2001, disaggregated to the level of electoral wards. This method offers an outcome map, if you will, that shows the results of present urban governance—in terms of the spatial distribution of wellbeing, privilege, and deprivation. Our current project takes this analysis further along two paths. One path is to link urban deprivations to the institutional environment (responsible for welfare creation and distribution) households must navigate when attempting to secure or improve their livelihood resources. To do this livelihood resource providing and intermediary organizations and networks present in our research sites will be analyzed in terms of the constraints and opportunities they pose for the development of household resources, claims and entitlements. These organizations and networks will be analyzed by both the supply-side and the demand-side perspective with the institutional environment seen as intermediating between the two. The second path is to explore how a spatial information infrastructure (SII)[2] can become a useful tool for urban governance networks[3] to better tackle urban deprivations sustainably. This requires fleshing out the possibility for instituting and scaling up SII based upon locally derived data on urban deprivations. The paper will proceed as follows: first we discuss SII in relation to urban governance, then we outline the strategic-relational livelihoods approach (SRLA) that will be applied to garner supply and demand side perspectives, and lastly we will outline our approach for discerning the opportunity context for an inequality tackling SII.

SII and Urban Governance

It is believed that more and better information can lead to more efficient planning and decision making, and subsequently more effective urban governance in terms of inclusivity. Several SIIs have been developed for the purpose of sharing expensive geospatial data and ready access to spatial information to support multiple purpose decision-making at different scales of governance. In many cases however, these are top-down approaches. Most follow either a technological or managerial imperative in design and implementation, with an outspoken focus on data, implying a preoccupation with aspects of data standards, interoperability, metadata (Georgiadou et al, 2005) and technology, while neglecting social, political, historical and institutional conditions within which such an SII should be embedded for effective utilization in urban planning. In particular, substantive issues are framed as technical or managerial problems needing similar solutions. People are considered 'universally rational agents' amenable to rational management methodologies, while information technology is assumed to be a value-neutral, globally enabling, and ahistorical mediator. The Indian national SII project, launched in 2001, is a prime example of a top-down approach to SII design and implementation, promoted by Indian elites and underpinned by a technological imperative (Georgiadou et al, 2005). According to Georgiadou et al (2005) the existing
'installed base' (Hanseth & Monteiro, 1998) (aka the existing socio-technical network) is often not considered in the overall design and metadata standards are created without an adequate perspective on their relevance and acceptance in local contexts.

We propose an analytical framework describing the potential role of SII in making urban governance networks more effective in tackling urban deprivations. What is needed is geo-referenced information on supply and demand side perspectives and the intermediating institutional environment disaggregated (when

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[1]Livelihoods approaches offer a people-centered, forward looking, and holistic way of looking at urban inequalities (Rakodi 2002 & Moser 1998). They are people-centered and holistic because they do not focus on income poverty lines or economic growth or decline, rather they focus on household assets or 'capitals' and what they are able to do with these in their present situation. They are forward looking as they tend to focus less on what families do not have and more on what they do have and focus on ways to make household assets more secure and productive by making households more resilient to vulnerability (asset loss due to death, illness or market changes) (Moser 2006).

[2] SII is a socio-technical construct that mediates the development, access and exchange of information and reflect the relationships between the different actors.

[3] The responsibility for socio and economic development has moved from being the purview of the state to being shared by the state along with private sector firms and civil society organizations. Thus government becomes governance which refers to the processes of how governance actors work and interact to determine both different groups and areas' entitlements and correlative duties as well as to plan for the future.

possible) to the lowest political scale-level. A SII *could* provide basic overall and dis-aggregated information on deprivations that households face, the uneven geography of provision and access, and support strategic choices for prioritizing particular localities, sectors, and households. It must be noted that this type of SII rests on several problematic assumptions: that urban governance networks possess mandates to tackle urban inequalities and that a social justice ethos, more so than an entrepreneurial consumer-citizen or zero-sum game one, orients and coordinates the actions of governance actors (Harvey 1989; 1995). Politically, there are issues around the type of data collection and sharing this approach requires as civil society organizations, politicians, and bureaucrats are as likely to be adversaries as allies. Also, it is unknown to what extent this sort of SII can alter the present modus operandi or to what extent it ends up being compromised by it. This is because the normative goals of democratizing, rationalizing and technologizing urban planning can be undermined by stakeholders who benefit politically or economically from maintaining the ambiguity and decision making monopoly often present in urban planning and resource distribution. It is unclear at this time how viable an approach with quality of life and sustainable and equitable access to collective resources as implied goals can be. However, it is our position that while not wise to define what is sustainable and just *a priori* that an SII informed by the IMD and SRLA can help marginalized groups and their allies negotiate more just forms of inclusion by helping them combat exclusion, privilege and adverse incorporation. In this sense, it can be viewed as a useful tool for those interested in more socially just forms of sustainable urban development.

SRLA

Tackling urban deprivations effectively cannot be done by means of a traditional style SII since it requires specific knowledge regarding the local context and the spatial patterns of household deprivations. Accordingly, content development is guided by the following question: What kind of information is required to address urban inequalities in socio-spatial terms?

Within international development studies urban inequalities are understood to be multidimensional and research now focuses on the range of deprivations households cope with. A recent description of urban deprivations includes: inadequate and unstable incomes, inadequate, unstable or risky asset bases (such as lack of education and housing), inadequate provision of public infrastructure (piped water, sanitation, drainage, roads and footpaths), inadequate provision of basic services, limited safety nets for those unable to pay for services, inadequate protection of poorer groups through laws and rights, and powerlessness of poorer groups within political and bureaucratic systems (Mitlin and Satterthwaite, 2004). These deprivations clearly indicate that inequalities stem not only from a lack of work and income but also from problematic power relations rationalized or naturalized by the institutional environment—environments that make it difficult for certain groups of households to meet their own needs and gain access to collective provision. While livelihoods approaches can describe the condition of poverty, inequality, or wellbeing households face, it (as is) can tell us very little about the spatial and institutional factors. Regading the spatiality of urban inequalities—citywide measurement has rarely been possible due to lack of spatially dis-aggregated information on its multiple dimensions. To rectify this we developed the IMD which can be mapped within a geographical information system (GIS). This method makes it possible to identify 'hotspots' of poverty, wellbeing, and privilege for further analysis.

It is necessary to analyze both the supply and demand side perspectives as they relate to deprivations. The evolving sociological approach to poverty and inequality posits that inequality, "is the consequence of social relations, perhaps of exclusion, the withdrawal of protection, 'adverse incorporation' or exploitation — or the categories through which people classify and act upon the social world" (Harriss 2006). In other words, the relational-institutional aspects need to be fleshed out. We need to pay more attention to the relationships households engage in across the institutional environment (family, community, state, and markets) responsible for providing welfare. The extent households face exclusion and adverse incorporation or enjoy inclusion or privilege can only be better assessed through careful ethnographic analysis which looks for the ways some groups or areas' vulnerability is related to other groups or areas' security and privilege and the institutions which strategically regulate these uneven livelihood outcomes.

Broadly social scientists study institutions—the socially constructed rules and norms of human interaction that give a degree of continuity and predictability to social relationships—to look for the structural

determinants[4] of individuals and groups' economic, political, and social behaviour. Studying the institutional aspects comprises both looking at concrete manifestations such as organizational and network forms, constitutions, policies, and outcomes, as well as the cognitive models hardwired via socialization that shape people's perceptions and actions. Like a game is played, institutions are lived and thus come most clearly into view in action. Reading the bylaws or policies of an organization (when available) can give one some idea of how players within the organization interact with each other, how the organization is to interact with other organizations, and how its members are to engage with clients, customer, or citizens and to what overall purpose. However, it is only by focusing upon actions and perceptions that one can begin to explicate how actors creatively (by necessity or choice) negotiate institutions, what rules and norms are dominant, why and to whose benefit and detriment. This means that much of what makes up institutions is one remove away from what we can observe (Bourdieu qtd. in Wacquant 2008 p.225). Thus, we must rely on proxies, namely organizations, social networks and social relationships—their form and function and individual actors practices and rationale for their practices. In particular we focus on the following aspects: authoritative labelling (Wood 2007), rules of entitlement (Bastiaensen et al 2002), and political space (following Hickey 2005 and Ferguson et al 2007).

To ground the institutional environment and render it open to empirical work, it is useful to think of it in terms of entitlements, claims and correlative duties. *Entitlements* refer to formal or statutory rights, while *claims* refer to informal processes of requesting services and resources between friends, family or others within their community. Correlative duties refer to the services, resources, opportunities and responsibilities claims and entitlements are paired with. The institutions involved in welfare provisioning engage in processes of *authoritative labelling*—processes of classifying people, needs and entitlements. In his 'labelling thesis' (Wood 2007) conceives of labelling as a negotiative process between those in authoritative labelling positions and those who are impacted for better or worse by prevailing labels when they attempt to draw upon entitlements or make claims on those charged with disposing of the resources and services. As such, authoritative labelling is a useful proxy when determining the fairness and accuracy of presently institutionalized labels and correlative duties.

Authoritative labelling informs "rules of entitlement." Entitlements and claims are not evenly distributed in stratified societies and as such one's position (for example, gender, caste, and class) and the rules of entitlement concurrent with one's social position(s) over-determine one's access to resources and opportunities. *Rules of entitlement* impart one's mode of ownership and access to resources, the rules of exchange one faces in markets, and one's access to organizations and social networks and their treatment within them (Bastiaensen et al 2002). Thus the exclusion and adverse incorporation aspects of inequality are a product of both institutional processes which apply different sets of rules of entitlement to different groups of people and a related inability to effectively contest these rules and classifications (interactional structural constraints). In general, this concept points to household capabilities as being intimately connected to entitlements and to the institutions which inform who gets what resources when and how. Thus the household strategies/actions component of our SRLA includes the relationship they have with their *institutional environment that is governed by authoritative labelling and related rules of entitlement.*

The authoritative labelling and rules of entitlement currently operating in an area's institutional environment can be analyzed to determine its welfare producing capability and to reveal the specific problems and opportunities it presents for the marginalized—in other words its profiles of exclusion, inclusion, privilege and/or adverse incorporation. In the SRLA inclusion refers to a situation where we have relatively equitable access of needed livelihood resources—a situation where benchmarks (of formal organizations or networks) are actively pursued in all areas of the city or when informal organizations or social networks are open to everyone and have roughly the same rules of entitlement. Exclusion refers to a situation where some groups, areas, or individuals are denied access or there is an absence of service or resource providing organizations or social networks. Privilege refers to areas or groups favorably biased by the "strategic selectivities" (Jessop 2001) of their institutional environment in a manner that results in their livelihoods benefitting in manner that requires forms of economic, social, or cultural oppression. Finally, adverse incorporation is a situation when some groups, individuals, or places have to pay, do or risk more for less and/or there are differences in the regularity and security of access—in other words there are different rules of entitlement at play.

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[4] Abstract role-to-role social structures, concrete actor-to actor interactive social structures, and embodied dispositional social structures (Mouzelis 2000).

While entitlements and claims are largely determined by those in the position to deliver or mediate the delivery of related services and resources, those on the receiving end can mobilize to challenge how rights and claims are presently understood and/or their corresponding correlative duties in a city's political space. Political space includes three interrelated dimensions—institutional, discursive, and agency. The institutional includes all channels from micro to macro, from public to civil society, and from formal to informal through which the households and their existing or possible allies can attempt to impact policy formulation, implementation, and evaluations. In essence, this dimension accounts for the channels through which identities are constituted (authoritative labelling) along with the entitlements and correlative duties tied to identities—in other words gradations of citizenship and rules of entitlement. The practices actors can engage in (for example lobbying, voting, direct participation, protest, forming client-patron ties) when trying to engage these channels, represents the agency side of political processes. In this approach the discursive dimension is taken to be the most powerful intermediary factor between structures and agency as this dimension largely defines one's room to manoeuvre because it defines which groups of people can make what claims and who and what is responsible for meeting those claims. For example, in situations where neoliberal ideas about free markets, reduced state spending, and globalized growth machine cities (Molotch 1976) dominate; social justice and sustainability framed claims can expect a chilly reception. In addition, in situations where politics is currently organized around recognition of ethnic or caste difference, rather than shared material need, it is more difficult to mount a cross cutting inequality focused agenda (Fraser 2000).[5]

Analyzed in relation to each other these three dimensions of political space allow for better understanding of the interrelationships that exist between institutions, agency and inequality (Hickey & du Toit 2006). However, it does not adequately address how different material conditions work to stratify both means and modes of agency expression[6] and it does not account for the dispositional effects poverty has on what one perceives as a viable option. Wood (2003) explains why the poor continue to engage in clientelist modes of resource provisioning and politics when these are commonly seen as reproductive of inequality and detrimental to both democratization and poverty alleviation. He argues that since most southern states and markets cannot or do not provide formalized rights based channels where the poor and near-poor can secure needed resources and security (of person, shelter, assets) that they must rely on informal channels which often results in depending on various patrons and those positioned between the poor and patrons (middlemen). These actors can provide access to work, shelter, protection, and variety of basic services. This situation results in the poor being enmeshed in webs of indebtedness and dependency that are antithetical to democracy and citizenship based market, state, and community relations. The poor's dependency on clientelism and the persistent threat of increased material shortfall (future uncertainty) inculcates in their habitus[7]: risk aversion, future discounting, sense of immediacy regarding resource needs, and little trust regarding the value of formal rights (Wood 2003). This sort of habitus leads them to continue to participate as clients in order to secure present levels of resources rather than to risk opting out and demanding better resources and opportunities from formal citizen, employee, or consumer based transactions.[8]

Mapping and analyzing political space requires a sensitivity to both the political economy and dispositional structures when strategically evaluating the possibilities for and barriers to successful positive recognition and redistribution policies. One way of accomplishing this is looking at people's agency in terms of exit, voice, and loyalty. All of these need to be understood in relation to the political economy and its cognitive imprint. Hirschman (1970) suggests that there are three main ways people can respond to unsatisfactory products or performance—exit, voice, and loyalty. *Exit* in the political realm refers to one's ability to opt out of a present situation that has become unsatisfactory. For example, in patron-client relations exit is possible if another patron is seen as being a viable alternative or if formal entitlements become available and sufficient. If exit is not desirable or possible then voicing concerns officially via voting, official complaint

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[5] Frasier was not speaking about the political space approach, but her arguments regarding the problems politics of recognition pose for those in need of redistribution of resources and power is relevant to this discussion.

[6] See Cleaver 2007; Hickey 2005; Wood 2003 for detail discussions of how material deprivation influences agency.

[7] Socially constructed disposition, manner, tastes, and expectations (Bourdieu 1977).

[8] In sum, for Wood (2003): To be poor means *inter alia*, to be unable to control future events because others have more control over them. This is why a sense of political economy is essential to understanding the constrained choices and options facing the poor. People are poor because of others and securing any kind of future requires recruiting the support of these others, but this only comes at the price of dependency and the foreclosure of autonomy—becoming a client, in other words. This involves the acceptance of truncated ambitions of self-improvement and advancement in order to secure basic welfare. Perversely, therefore, we encounter the deliberate strategy of choosing a coping level of poverty as the social condition of securing a sustained, albeit low level livelihood (456).

channels, protest, media, or informally is the alternative. Together *voice* and *exit* are supposed to send signals that changes need to be made if a firm, organization, or association does not want to risk losing support and thus legitimacy and possibly profits. However, if *voice* is to be effective it seems that those to whom complaints or suggestions are being made must believe that those voicing concerns do in fact have the ability to exit. If *exit* is not possible or likely than *voice*'s ability to create effective demand and thus change is greatly diminished (Wood 2007). Next, comes *loyalty*, which has both positive and negative aspects. One can be loyal to someone or something because it works well for them or they can be loyal by default when *exit or voice* is not viable, effective or a recognized option. An example of loyalty by default or resignation can be made of client-patron relationships. Since the poor actively work to maintain their side of a seemingly lopsided bargain it could be argued that they are satisfied enough with the present arrangement. However, as Wood (2001) illustrates using the example of the urban poor in Bangladesh, often those who the poor access jobs, shelter, and services from belong to the same network of which monopoly rather than competition is the rule. Thus, if one decided to exit from one patron or complain too loudly they may risk their client status across the board. The position the SRLA takes is that it is necessary to look at people's agency within political space in terms of *exit, voice, and loyalty* and that these must be analyzed with reference to their material and social context.

In sum, the institutional environment is important to study because it governs access to resources and opportunity via authoritative labelling and rules of entitlement which create a heterogeneous citizenry—different groups having different quantities and qualities of claims and entitlements. These different stocks of claims and entitlements lead to situations of privilege, inclusion, exclusion and adverse incorporation and point to the significance of political space—the avenues where the marginalized and their allies can contest or negotiate present authoritative labelling practices and correlative duties. The SRLA will analyze the institutional dimension using the concepts of authoritative labelling and rules of entitlement. It will also map political space to strategically evaluate the possibilities for negotiating identifications and correlative, services, resources and rules of entitlement across the institutional environment which intermediates between supply and demand. Both the IMD and the SRLA could provide useful and actionable content for a SII.

SII

Because there is no one-model-fits-all SII toolkit, we draw upon the concept of "the installed base" from information infrastructure theory as an entry point to the proposed study. Past research on SIIs shows the importance of recognizing the power of existing material (both human, technical and institutional) to cultivate SII development from the bottom-up as opposed to constructing it from the top-down (Georgiadou et al, 2005). A young SII should be considered as an evolving enabling and constraining, shared, and heterogeneous *installed base* (Hanseth, Lyytinen, 2004; Hanseth, Monteiro, 1998). The concept implies that SIIs always already exist in one form or another and that the existing elements of an infrastructure influence future development. New parts are integrated into an existing installed base through extension of the latter or replacement of existing parts. In this way the installed based evolves creating inertia (self-enforcement with the effects of path-dependence, lock-in, and possible inefficiencies) (Hanseth & Monteiro, 1998), but also offering opportunities for further development and "cultivation." The existence and importance of the installed base further problematize top-down approaches that dominate in India (Pfeffer et al, 2008).

In order for the heterogeneous elements of an installed base to become linked (horizontally and vertically) in a SII, standards are required (Hanseth & Lyytinen, 2004). The heterogeneity of the different elements of the installed base makes the process of setting useful and acceptable standards difficult. For analytical purposes we will distinguish three levels of heterogeneity that need to be addressed in SII cultivation. First, information is heterogeneous in terms of its form, content and purpose. Secondly, the contexts in which information is created and used can differ greatly. Thirdly, there is heterogeneity in the perceptions and meanings of spatial information and information related to poverty and urban deprivations.[9]

[9] The author conducted semi-structured interviews with city and state bureaucrats, as well as academics in the two cities. In some cases the meetings included detailed demonstrations of Geographic Information Systems (GIS) and e-governance related projects currently underway. The present discussion is also based on the author's field observation notes from offices and waiting areas in government buildings, and ad-hoc conversations with local practitioners.

Physical forms of information vary within and across organizations depending on the technologies used and purposes for its creation. For example, in one urban study site in southern India much information is handled in paper form. An Urban Development Authority (UDA) engineer stated that much of the work at the office is handled via paper files, and most digital mapping is outsourced to private consultants. On the other hand, birth and death certification is being digitized, and collected on networked databases in both cities. The city is also part of a GIS pilot project to map parcel property data with socio-economic attributes. This creates digital files of parcel boundaries, and related socio-economic data in digital form at the parcel scale. Software packages also vary. Engineers in the Municipal Corporation (MC) and City's Division of the Slum Clearance Board (SCB) use mainly AutoCAD for mapping and graphical design. Other information is digitized and stored using in-house developed software in the local language. Importantly, information created and shared in the form of narratives and "stored" in various individuals plays a large role.

A second level of heterogeneity is differences in organizational functions, objectives, and practices. These influence the type of information, the means by which it is created, and sharing practices. The SCB collects socio-economic data mainly for the purpose of slum declaration by the state. Declared slums are then mapped using AutoCAD software for visualization to support the internal work. UDA is in the process of creating new long-term planning documents, including plans for future land use. The information necessary for the preparation of these documents and mapping of the information is outsourced to private consultants, who then send already analyzed information in the form of maps and charts to UDA. Primary socio-economic information by parcel for the city is being collected in a GIS pilot project at the Municipal Corporation, which in turn provides information parallel to legacy data stored in the older tax assessment databases. Here the city's mandate is participation in the pilot project in order to make parcel information accessible online. While some of this collected socio-economic information is the same, the purposes for collection, analysis, and visualization are different. As one official stated "I know, it's all the same, but for different purposes." Different purposes and mandates require and produce heterogeneous primary and secondary information.

Where information moves between contexts, it also changes meaning. This is true not only for the movement of information between organizations, but even within departments. A higher ranking official at SCB, for example, viewed the declared slums' map mainly as a visual aid for outsiders, who wish to see the location of slums in the city. Engineers working at SCB, on the other hand, stated that they use the map for internal work themselves. Here, the same map has different meanings to different practitioners within the same office. Information changes as it travels. Poore and Chrisman (2006) write that "today it is counterproductive to employ the metaphor of information as passively flowing through a conduit" (p. 520). Instead, it is transformed and reworked by its recipients according to their work practices, responsibilities and interests. In a SII the "recipient transforming and reworking" the information can be a table or software. For example, digitizing survey information may lead to changes in language and length of each category, for example, because of restrictions in column heading width in the software. Again, the information is changed – this time by the "rules" of the software.

Thirdly, heterogeneity exists in the perceptions of the nature of spatial information. Here it is important to recognize differences in the meta-context. There are differences in the perceptions of different actors regarding what constitutes spatial information and its meaning as well as what constitutes poverty and urban deprivation data and the meanings attached. While many think of spatial information mainly in terms of GIS generated files, digital and paper maps, and remotely sensed images, there are other forms of spatial information that play an important role in daily work practices in municipal government. One of these is "tacit place knowledge" of people working at the ground-level. Much spatial information is communicated via narratives, and lists of places play an important role in work practices. Thus, while difficult to incorporate in conventional maps, this information cannot be ignored by the researchers as the project continues. In general, spatial information is information that is geo-referenced. The AutoCAD maps produced by municipal corporation and SCB, however, are not geo-referenced. Here, we have the "conventional" maps that are usually thought of as "spatial information," but they – strictly speaking – do not adhere to the above definition. For sharing and use of information in different contexts these issues are problematic. The map is meaningful only in its entirety (slum locations with roads and block boundaries, for example) in one specific context, but not necessarily as individual datasets in other contexts.

An additional layer of complexity is related to the perception of poverty and "poor areas" in the city. There is a BSUP (Basic Services to the Urban Poor) survey currently underway in one of the study sites. The main

thrust of the program is the "integrated development of slums through projects for providing shelter, basic services and other related civic amenities" (Gov. of India, JNNURM – Guidelines for Basic Services to the Urban Poor, 3). Baud et al (2008), however, shows that the urban poor do not necessarily live in slums, and that wards with high slum population are not necessarily the most deprived. Therefore, not only do perceptions of what constitutes spatial information vary, but also perceptions of the criteria used to generate spatial information about poverty (in the Indian BSUP example) or multi-dimensional urban deprivation (in Baud et al's 2007 research agenda).

In order to foster the sharing of spatial information and its use to tackle multiple urban deprivation, we need to understand better the relationship between spatial information's form and content, the micro- and macro organizational contexts in which it is created and used, and the changes in information form, content, and meaning as it travels between contexts and actors who make up the installed base. However, these heterogeneous components can be difficult to capture especially ones that are normally not reflected upon. To capture the heterogeneities in the existing arrangements, and to "unearth" the connections between spatial information, actors, perceptions and contexts, we will conduct a longitudinal ethnographic study that focuses on the flows of information and surrounding work practices. With a focus on information artifacts (maps, survey forms, lists, official documents) and the practices by which they are created, moved, and used we hope to unearth the sources and flows of information of use to social justice inclined practitioners, planners, and researchers. A focus on the "boring things" (Star, 2002), and the day-to-day practices, allows us to better understand these "clashes and differences in meanings" (Star, 2002). In other words through description and analysis of the heterogeneous elements and their connections we hope to uncover both the constraints as well as the potentialities within the installed base for an inequality tracking and tackling SII to emerge.

CONCLUSION

This paper discussed the contributions SII can make to tackling urban inequalities. Regarding the conceptualisation of urban deprivations, a relational approach is necessary to include both demand side and supply side perspectives as well as the institutional environment and political space which intermediates between them. The SRLA will offer dynamic profiles of inclusion, exclusion and adverse incorporation to unpack the "snapshot" map provided by the IMD. Our analysis of the installed base will give insights regarding the construction, sharing, and use of spatial information related to urban deprivations and will provide insights into how an inequality tracking and tackling SII can be cultivated from the bottom up in our research cities in India.

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