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Tenements, Ghettos, or Neighbourhoods? Outcomes of Slum-Clearance Interventions in Chennai

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ABSTRACT

This paper assesses the outcomes of 30 years of slum clearance efforts in Chennai. It employs a set of six criteria derived from the global literature on best practices in slum clearance to examine the strengths and weaknesses of the four principal approaches implemented in the city since the 1970s — in situ tenement construction, in situ slum upgrading, sites-and-services and resettlement tenements. The paper finds the overall record bleak: only one of the eight cases reveals a transformation into a durable mainstream urban neighbourhood, while the rest have remained slum-like tenements or turned into ghettos. The paper shows how lessons from history are ignored in contemporary state actions on slums. The approach of mass resettlement in peripheral tenements, despite its proven failure, has resurfaced as the favoured technology of slum clearance, driven by the exigencies of real estate urbanism. These findings bring into question the role of evidence-based policy in state actions.

Keywords: Slum clearance; Chennai; tenements; slum upgradation; sites-and-services; resettlement; metrics.

1. INTRODUCTION

Three decades after having been 'cleared', is a 'slum' still a slum? The question opens up issues of language and terminology, definition and designation, time and transformation, implicated in the notion of 'slum clearance'. This paper presents findings from eight sites in Chennai that manifest the outcomes of various types of slum-clearance interventions essayed by the state since the early 1980s.[1] The study aimed to identify, through detailed explorations in each site, the strengths and weaknesses of each type of intervention in ameliorating, eliminating or perpetuating slums over a period of about 30 years. This long-range retrospective lens, combined

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with a qualitative approach employing oral histories and semi-structured interviews, allowed our enquiry to be shaped by the concerns, preoccupations and aspirations that residents emphasised in their accounts of change in their neighbourhoods.

The overall landscape of outcomes that the study uncovered was bleak. Only one of our eight sites embodied anything close to a transformation into a durable and decent neighbourhood. The rest were still, to varying degrees, caught within traps that marked them as 'tenements' or 'ghettos'. These terms suggest the exceptionalism of settlements that are produced as slums through state action (or inaction), social meanings (including self-representation and stigma) and economic processes (including informalisation of labour and poor quality work)

How can this apparent failure of 30 years of intervention be explained? The impulse behind slum clearance in Chennai and indeed across India has shifted in significant ways since the era of the Slum Clearance Acts passed in the 1960s and 1970s, which emphasised concerns of poverty alleviation as well as of health, hygiene and morals. The repositioning of Indian cities in the 1990s as engines of growth to be 'renewed' for competitiveness and bankability has explicitly prioritised aesthetic, environmental and property-related concerns (Baviskar 2003; Ghertner 2011). The language of slums as not only encroachments, but 'eyesores', has found its way into official documents like Chennai's Second Master Plan (see CMDA 2008). As this paper attempts to show, empirical evidence, lessons of history, policy guidelines and best practice insights on humane and sustainable paths to slum-free cities have all taken a backseat to the exigencies of financialisation and real estate urbanism.

This introduction goes on to discuss the politics of slum designation, followed by a brief review of globally and nationally agreed goals of slum clearance. It then presents the six metrics identified to assess the case studies presented in Section II.

1.1 Terminology, Definition and Designation

The term 'slum', as flagged by recent scholarly discussions (Gilbert 2007; Simon 2011; Bhan et al. 2013; Huchzermeyer 2014), is loaded with negative meanings and remains deeply problematic. Definitions of slums typically focus on the substandard quality of the built environment and services, thus encompassing a disparate range of urban spaces, from old city centres to unauthorised developments, squatter settlements and hutment clusters. What is at stake in this compression of diverse political-economic, architectural and infrastructural relations within this term is the stigma that it generates and generalises across the landscape of non-normative urban settlements.

However, the politics of slum terminology in Indian cities raises other, more complex issues. Until the late 1990s, notification as a slum was actively sought as one of the goals of shelter struggles. Under national and state Slum Clearance Acts in India, such notification entitled a settlement to legal protection from arbitrary

evictions and ameliorative measures from the state. However, this bid encounters two problems. First, since these laws rarely, if ever, provide for denotification of slums, the label sticks long beyond the transformation of the slum into a mainstream urban neighbourhood. In Chennai, for example, neighbourhoods that were once but are no longer slums are designated 'developed slums' (see TNSCB undated). Second, shifts in the judicial and political climate of Indian cities since the late 1990s have weakened the protections offered by the legal recognition of slums. As Ramanathan (2006) argues, the Almitra Patel judgement of 2000 reversed the precedent that had previously established shelter as a basic human right. It reinstated the sanctity of property rights, inaugurating an ethos which criminalised squatting and dismantled the state's obligation to resettle evicted squatters (Datta 2012).

But states have been reluctant to recognise slums under the Slum Acts long before this moment. The 2011 Census found that 37 per cent of slums across the country had not been recognised legally or administratively (Registrar General 2011). In Chennai, while the number of slums increased from 996 in 1986 to 2,173 in 2014, no new slums were notified from 1984. But even administrative or extralegal designation as a slum has important effects. It positions settlements outside the formal rubric of the Master Plan, as spaces of exception subject to the discretionary exercise of executive power, where schemes can be deployed and withdrawn at will (Datta 2012). As this study shows, slum-dwellers employed this self-designation in ambivalent registers: to claim protections, demand special considerations and to index their stigmatised circumstances.

Finally, the slum serves, in the public imagination as well as in policy usage, as a proxy for urban poverty. But scholars (e.g. Roy 2003; Datta 2012) have mapped the complex spatialities of poverty in Indian cities to challenge this equation (Coelho et al. 2012). Bhan et al. caution that the Census 2011 findings of a smaller-than-predicted proportion of slum households in Indian cities arise from its restrictive definition of slums, which excludes clusters of less than 60 houses. They argue that 'possible definitional exclusions as well as the reality of increased displacements leading to possible new spatialisations of poverty in Indian cities together imply that we must take care to separate the "slum" from the "poor"…' (Bhan et al. 2013:14). Despite these cautions, however, the concept of 'shelter poverty' proposed in recent policy discourses (e.g. HPEC 2011) reasserts a slum-centric understanding of urban poverty by framing it as a function of housing and services. This formulation not only ignores wider structural and distributional dimensions of urban poverty (UN-Habitat 2003; Marx et al. 2013), it also dictates supply-side solutions. Given the appetite of governments for large-scale engineering and concrete fixes, this framing has assisted the return to mass tenement construction as the dominant route to slum-free cities.

1.2 'Slum-Free Cities': Elimination or Amelioration?

Scholars have flagged the global resurgence of the slum discourse and worldwide calls for slum-free cities (exemplified by the inclusion of the Cities

Without Slums (CWS) Action Plan in the Millennium Development Goals in 2000) as spelling a threat of elimination rather than a promise of amelioration for informal occupancies in cities. Although the CWS agenda opposes slum demolitions and advocates participatory in situ slum upgradation as the most efficacious approach, critics find the slogan of 'slum-free cities' itself dangerous because it reinscribes the pejorative connotations of 'slum', promotes an unachievable goal, and allows ambitious planners and politicians to pursue mass demolitions and displacements (Gilbert 2007; Huchzermeyer 2014).

Yet, a broad global consensus has emerged, as reflected in scholarly literature as well as international and Indian policy documents, on the key elements of a humane and sustainable solution to the problem of slums.[2] This literature is too vast to be reviewed in detail here (a more detailed discussion can be found in MIDS 2014), but the key points of consensus are briefly highlighted below.

A fundamental recognition articulated in the literature is that slums are a reflection of state failure in regulation of land and housing markets to ensure access to low-income urban residents (Sridharan 1995; UN-Habitat 2003; Mahadevia 2010). The High Level Task Force on Affordable Housing (HLTFAH) 2008 presses for a comprehensive, long-term urban land policy that addresses the housing requirements of the urban poor, and recommends that affordable housing should be declared 'public purpose' for land acquisition purposes. More important, tenure security, or arrangements that protect families from involuntary removal from the lands or homes that they occupy, is seen as a crucial lever unlocking multiple pathways towards amelioration of slums. An important body of work in the 2000s, however, challenged Hernando de Soto's advocacy of formal titling in 1990 as the preferred path to tenure security for poor households (Gilbert 2001; Durrand-Lasserve et al. 2007; Mahadevia 2010). These studies argued that in most southern contexts, de facto tenure security arrangements proved more feasible, inclusionary and/or transformative than formal titling. While property titles enhanced economic security for poor households by turning homes into assets and facilitating access to institutional credit, they also dispossessed many who could not establish eligibility and provoked gentrification of low-income neighbourhoods. Instead, a range of institutional innovations like long-term leases, no-objection certificates (NOCs) and no-evictions guarantees were found to offer informal settlers the perceived security of tenure, which allowed them to invest in improvements to their physical and social conditions (Gilbert 2001; Mahadevia 2010).

As illegal occupancies block slum-dwellers' entitlements to state-provided basic services, recognition or regularisation of the settlement is a critical step in facilitating access to such services. This also works in converse: installing infrastructure and services in a settlement often operates as a mode of de facto tenure security by providing assurance that evictions are not imminent, thereby encouraging residents to invest in improving their housing or environment. Bringing slum-dwellers into the ambit of state services benefits municipal agencies as well

as households. State denial of basic services imposes heavy costs on slum-dwellers by bringing in private providers to fill the gaps, spelling higher costs and often poorer services for slum households. It also makes them vulnerable to powerful and unregulated local interests (Marx et al. 2012). The National Urban Housing and Habitat Policy (NUHHP) 2007 emphasises the links between improved environmental and living conditions and higher productivity of urban workers.

Another crucial recognition in the slum-clearance literature is that interventions that compromise the livelihood security of urban working-class residents have a high likelihood of failure (UN-Habitat 2003; Buckley et al. 2006; UN-Habitat et al. 2008). India's NUHHP 2007 and Rajiv Awas Yojana (RAY) guidelines push for shelter arrangements for the urban poor that are in situ or near their workplaces, 'to ensure that development does not lead to loss of livelihood linkages or additional commuting hours leading to loss of income' (RAY 2013). Both documents recommend that relocation be considered only in the case of 'untenable' locations which potentially endanger the health or safety of residents, and emphasise that in such cases, mobility and livelihood linkages be integrated into the resettlement effort.

The crux of a successful slum-clearance intervention lies in its sustainability over time. Robust management and maintenance of inputs and investments, essential for a durable transformation of a slum, are in turn determined by three governance aspects: (i) effective coordination among state agencies with clear channels of accountability; (ii) strong partnerships with NGOs, civil society groups and community-based organisations (CBOs) in planning and execution of the intervention; and (iii) the inclusion of beneficiary communities in planning, design and implementation.

Issues of scale and coverage have also been emphasised: high-quality interventions with a limited/selective reach which exclude large numbers often prove counterproductive by perpetuating or recreating slums elsewhere (UN-Habitat et al. 2008). In situ upgrading projects, for instance, can enhance plot values, edging out residents with weak tenure rights, including tenants, into new slums (Cities Alliance 1999). And finally, the costs of slum clearance deserve consideration in two interrelated aspects: demand or affordability of the intervention for slum residents (including questions of access to finance), and its financial sustainability for governments. As international agencies such as the World Bank, UN-Habitat and the Cities Alliance have emphasised since the 1970s, building cost-recovery into the design of the intervention allows for a larger scale of coverage and a more inclusive model.

1.3 Metrics and Methods

Drawing on the literature reviewed above, this study identified the following six metrics to assess the cases discussed in the next section:

1. *Tenure security.* Does the intervention provide shelter that is protected from evictions? Does it generate stakes that allow residents to invest in improvements?

2. *Improvement in environment and living conditions.* Does the intervention improve living conditions of residents and enhance their access to basic amenities and services?

3. *Livelihood enhancement.* Does the intervention strengthen the livelihood security of the urban poor, create conditions for their integration into dynamic urban economies and provide opportunities for socio-economic mobility?

4. *Sustainability.* This indicator comprises three domains: governance, habitat and long-term access. Is the intervention governed and managed in a way that creates a viable and sustainable urban neighbourhood? Are the agencies responsible for management and maintenance accountable to residents? Do the institutional arrangements safeguard their access to the benefits of the intervention?

5. *Inclusiveness/breadth of coverage.* Does the intervention create a broad-based entitlement? Does it serve to expand the supply of affordable and decent housing in the city?

6. *Costs.* Are the interventions financially sustainable for the beneficiaries and for the state?

Table 1: Neighbourhoods studied

Types of interventions	Neighbourhoods selected
1. In situ tenements	i. Udaya Surya Nagar, Vyasarpadi
	ii. Ambedkar Paalam, Mylapore
2. In situ Site Improvement Projects (SIP)	iii. Shastri Nagar, Pulianthope
	iv. Salaima Nagar, Otteri
3. Sites and Services	v. Muthamizh Nagar, Kodungaiyur
	vi. Ambedkar Nagar, Velachery
4. Resettlement tenements	vii. Rajarathnam Nagar, Kodungaiyur
	viii. Kannagi Nagar, Thoraipakkam

Eight sites were selected for the study, two each to represent the four types of interventions implemented in the city from the 1970s (see Section 2). Table 1 lists the types of interventions and neighbourhoods selected under each. Within each category, sites were selected based on their location, one each from north and south Chennai. The availability of gatekeeper contacts in the communities also drove the selection. This explains why both sites selected under the site improvement projects (SIP) category were from north Chennai. Fieldwork in each site comprised one or two scoping visits followed by detailed semi-structured interviews with 10 to 15 households in each neighbourhood, supplemented with key informant interviews and focus group discussions with women's and other groups. The case studies in Shastri Nagar and Muthamizh Nagar also draw on a 2012 study by Transparent Chennai (see Raman and Narayan 2013).

The next section briefly outlines the history of slum-clearance efforts in Chennai before moving to the case studies.

2. SLUM CLEARANCE IN CHENNAI: HISTORIES OF THE PRESENT

2.1 A Brief History of Slum Clearance in Chennai

Chennai offers a good setting for a comparative study of slum-clearance methodologies, as the entire gamut of approaches attempted across the world — from tenement construction to slum upgrading and Sites and Services — had been implemented in the city from as early as the 1950s. The World Bank's substantial funding role in Chennai's urban housing sector from the early 1970s shaped the city's housing policies in line with 'best practice' insights drawn from the Bank's interventions in other parts of the world (Raman 2011).

The history of slum clearance in Madras can be traced back to 1908, when the Corporation of Madras attempted to rehouse slum-dwellers in tenements (Census 1961). These efforts were limited by financial constraints, and by the 1930s, only 2,000 tenements had been built, covering 2 per cent of the city's slum population (ibid). Until 1951, slum clearance largely meant shifting slums to the outskirts or outside of the city. In 1952, the Madras government's Housing Advisory Committee recommended a shift from clearance to 'improvement' of existing slums through providing layouts and basic amenities. In the 1950s, the Corporation improved 40 slums in Perambur, Kodambakkam, Tondiarpet and Korukkupet by acquiring the land and developing housing colonies. The City Improvement Trust (CIT) formed in 1946 was entrusted with developing such sites in areas south of the River Cooum (ibid).

From Independence until the 1970s, the Central government played a substantial role in setting slum-clearance policies for state and city governments. However, although the national consensus in the late 1950s favoured the provision

CHENNAI
LOCATION OF SAMPLE SITES

Muthamizh Nagar,
Kodungaiyur

Rajarathnam Nagar,
Kodungaiyur

Udaya Suriyan Nagar

Shastri Nagar,
Pulianthope

Salaima Nagar,
Otteri

Ambedkar Paalam,
Mylapore

Ambedkar Nagar,
Velachery

Kannagi Nagar,
Toraipakkam

Legend

In-Situ Tenements
Udaya Suriyan Nagar
Ambedkar Pallam, Mylapore

**In-Situ Site Improvement
Projects**
Shastri Nagar, Pulianthope
Salaima Nagar, Otteri

Sites and Services
Muthamizh Nagar, Kodungaiyur
Ambedkar Nagar, Velachery

Resettlement Tenements
Rajarathnam Nagar, Kodungaiyur
Kannagi Nagar, Toraipakkam
Chennai-new-boundary
Chennai-old-boundary

scale

2.5 1.25   0   2.5   5   7.5   10
KM

of open serviced plots to slum-dwellers, the Government of Madras, faced with an exponential growth of slums in the 1960s, pushed for tenement construction in parts of the acquired lands (ibid).

A key moment in the city's history of slum clearance was the formation of the Tamil Nadu Slum Clearance Board (TNSCB) in 1971, under the Tamil Nadu Slum Areas (Improvement and Clearance) Act, 1971, passed by the Dravida Munnetra Kazhagam (DMK) government, which came to power in 1967 with a strong base among the urban poor (Raman 2011). The Act protected slum-dwellers from arbitrary evictions and provided for security of tenure and improvements in living conditions. From this point on, slum-clearance initiatives in Chennai can be broadly categorised into four types that followed a chronological sequence.

In the 1960s and 1970s, the TNSCB predominantly constructed in situ multi-storied tenements to rehouse slum-dwellers, aiming to free Madras of slums in seven years by constructing 20,000 tenements a year (Raman 2011). However, as elsewhere across the world, this approach had limited success due to its high costs, heavy dependence on state funding and the tendency for the benefits to be captured by powerful or politically connected households. By 1981, only 17 per cent of the 2.21 lakh households of slum-dwellers in Madras had been rehoused in tenements (ibid).

In the 1970s and 1980s, the state's policies shifted from tenement construction to in situ slum upgrading and Sites-and-Services (S&S) schemes, implemented in Chennai under the World Bank-funded Madras Urban Development Projects (MUDP) I and II. Influenced by John Turner's writings on Peru, and concerned with financial sustainability and replicability of interventions, the Bank argued that slum-dwellers would invest in improving their own housing if they were provided with tenure security, adequate infrastructure and low-interest credit. Slum improvement projects (SIP) provided these facilities on the squatted sites while S&S projects resettled slum-dwellers in serviced plots on land acquired by the state, typically on the outskirts of the city. The latter catered to a mixed socio-economic group, cross-subsidising plot prices for lower-income groups by charging market rates for middle-income group (MIG) plots. MUDP I and II made significant advances in providing affordable shelter to the urban poor, together providing plots or improved slums for 76,000 slum households over 10–12 years (Pugh 1990).

But by the mid-1990s, evictions and resettlement of slum-dwellers in tenements outside the city had surfaced again, this time through concerted, well-funded and mass-scale programmes. Increasing pressures on urban land as real estate and for advanced urban infrastructure, thrusts on waterways restoration, environmental improvements and city beautification and the availability of large-scale funding through projects like the Tamil Nadu Urban Development Project (TNUDP) and the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), contributed to this shift. Since 2000, over 43,000 resettlement tenements were built

in the southern outskirts of Chennai alone. Over 80 per cent of funds received under the Basic Services for the Urban Poor (BSUP) component of the JNNURM were spent on building resettlement tenements on the urban peripheries. The TNSCB's role had shifted from one of protecting slum-dwellers from evictions and improving their living conditions to that of releasing slum lands for 'development purposes'.

2.2 The Case Studies: Before and After

This subsection sketches the baseline conditions, the interventions and the conditions at the time of our study for each of the eight neighbourhoods studied under the four categories of intervention.

In situ tenements

In 1980, the TNSCB built multi-storied tenements in a neighbourhood popularly known as Ambedkar *Paalam* (bridge) in the city's central area of Mylapore, to rehouse two slums that together comprised about 250 predominantly Dalit families. Residents lived in temporary shacks on a nearby stretch of beach for over four years while the tenements were being constructed. As only 188 units had been built, beneficiaries were picked by lots. Allotments were made under hire-purchase agreements where residents would pay Rs. 25 per month and receive sale deeds after 20 years if all dues were paid. The tenements measured 10×15 feet and had piped water connections drawing on borewells, with overhead tanks and indoor toilets linked to the city's sewage system.

In Udhaya Suriyan Nagar, on the northern edge of Vyasarpadi in north Chennai, the slum was settled from the 1960s by Dalit families of daily wage labourers working in the harbour or in foundries, power plants and mills nearby. In 1989, the TNSCB built and allotted 640 tenements of 180 sq. ft each with toilets, in 20 three-storey buildings, to the 340 families that already lived there and another 300 families brought from adjoining slums. The tenements here did not include piped water supply or proper drainage facilities — these were developed over time in response to demands from residents.

Both tenements are now located in prime urban precincts well connected to the rest of the city and abundantly served by public transport, with markets, schools and hospitals nearby. However, our study found both tenements in a very poor physical condition. In Ambedkar *Paalam*, the buildings had large cracks in the outer wall. Residents claimed that the poor quality of construction had revealed itself within a few years in the form of leaking roofs and broken staircases. The Vyasarpadi tenements had suffered extensive damage from flooding, weathering and sewage stagnation.

While access to social infrastructure had improved with the development of the larger region, services in the tenements remained deficient. In Ambedkar *Paalam*, the piped water connections had become defunct and were never repaired. Residents carried water up to their homes from street-side hand pumps. In both areas,

drainage lines were broken in many places and frequently clogged, and first-floor houses were often flooded with sewage from toilets. Despite daily trash collection from street bins, garbage had accumulated between and behind the buildings as service providers refused to clear garbage thrown inside the site.

In both cases, the small size of dwelling units had created a spillover of residence into open spaces outside the buildings. In Ambedkar Paalam, the gardens originally laid around the tenements had disappeared and parts of the interior roads had shrunk due to the proliferation of shacks, making parts of the area inaccessible for emergency vehicles. This was a strong concern aired during our interviews. In Udhaya Suriyan Nagar, families had constructed toilets in the space between buildings, having converted the in-house toilets into living space. Shacks were constructed along the boundaries of the site and on the stormwater drains.

In situ Slum Improvement Projects (SIP)

Salaima Nagar in Otteri and Shastri Nagar in Pulianthope, both in north-central Chennai, were two of the 77 slums improved under MUDP I in 1982-83. Salaima Nagar originated in the 1930s as a small isolated settlement of Dalit labourers on the edge of the city. In 1978, the TNSCB proposed to construct multi-storied tenements there, but residents resisted, having seen how the scheme had denied allotments to several families in a neighbouring settlement. When the TNSCB attempted to clear the slum, residents obtained a stay from the High Court, and organised themselves into a welfare association. In 1980, led by Pennurimai Iyyakam, an autonomous women's organisation in the city, they petitioned the chairperson of the TNSCB for implementation of the MUDP's Site Improvement Scheme.

Shastri Nagar was a lakebed (*eri*) settled in the mid-1960s by families who had been renting homes in other parts of north Chennai. Annual monsoon flooding drove families to seek refuge at the nearby *Madha Koil*, a church associated with the Don Bosco Social Service Society (DBSSS). In 1967, under the DMK regime, the 530 households here received fireproof houses with brick walls and tiled roofs. In the early 1980s, the DBSSS collaborated with the Madras Metropolitan Development Authority (MMDA, now CMDA) to implement the MUDP Slum Improvement Project here. Layouts were planned on an 'as-is-where-is' basis, and residents received a NOC that gave them residential rights to plots measuring 12 × 10 feet, with loans of Rs. 8,000 to upgrade their houses and build toilets. They were offered the option of a larger floor area on one floor with another family allotted the floor above, but opted instead for smaller individual plots.

Most of the current houses in these sites date back to this period, although they had expanded and improved over the years. Most were brick constructions with sheet roofing, about 200 to 250 sq. ft in size. In Salaima Nagar, about 15 per cent of the residents had constructed extra floors and relied heavily on rental incomes (between Rs. 1,500 and Rs. 3,000) to supplement household revenue. Of the over 300 families that now lived there, 40 per cent were renters. The community had

built a temple and a community hall, which was used for community meetings and tuition classes for schoolgoing children. In Shastri Nagar, only about half of the original 530 families still lived there. Of the estimated 2,000 households now resident, most were newcomers who had bought or rented homes. About 22 per cent reported rental income averaging about Rs. 2,200 a month. Real estate values had climbed from about Rs. 6,000 for a house in 1983-84, to Rs. 5 lakh now. It is unclear, however, if this turnover in ownership signifies gentrification in its widely understood sense of a shift in the class composition of residents.

In both sites, the interventions failed to provide the basic infrastructure envisaged in the SIP schemes. Piped water was not installed and toilets were not connected to the city's sewerage lines. In Shastri Nagar, a public toilet complex was built in the 1980s, but was connected to the sewer lines only in 1991. In Salaima Nagar, serious deficits in water and drainage continued until 2008, when the community organised itself to access a new Metrowater scheme of subsidised connections for economically weaker section (EWS) households. Roads were unpaved and unlit and people still carried water from handpumps on the main road. Flooding problems persisted, and solid waste accumulated outside homes as garbage services were inadequate.

In both areas, literacy levels and school enrolments had risen significantly owing to the availability of numerous schools run by trusts, missionaries or the government. But most residents, particularly in Salaima Nagar, were still poor. In many families, women were the sole breadwinners. Yet, education was clearly a high priority. Most children went to private schools. The community had set up free tuitions, but many parents paid for private tuitions. Women spoke of the high debts they had incurred to educate their children. Most of the youth were attending or had graduated from college. Public transport connectivity and access to health facilities had also improved significantly over time.

Sites-and-Services (S&S) Schemes

Muthamizh Nagar in Kodungaiyur, north Chennai, was developed under the MUDP I in 1984 on a site that residents recall as a 'forest' (*kaadu*), an isolated stretch of reclaimed marshland on the edge of the city. The intervention offered fully serviced plots in a large site, which included industrial blocks that provided employment, and community facilities such as playgrounds, health and childcare centres. In contrast to the other slum-clearance schemes in the study, which were implemented by the TNSCB, this was run by the Tamil Nadu Housing Board (TNHB). The scheme was announced through newspapers, inviting applications from all over the city, and EWS applicants were selected by lots.

The site comprised 4,102 housing units spread across eight blocks, of which 3,024 were EWS allotments, varying in size from 390 to 468 sq. ft. EWS allottees were provided core housing with sanitation and paid a minimum down payment of 10 per cent, with the remainder to be paid over five to 20 years at 12 per cent

interest. Later, the government provided house-building loans worth Rs. 10,000 and building material.

By the time of our study, the site resembled any middle-class neighbourhood in the city. Almost all houses were *pucca*. Each block was a mixed neighbourhood, both in terms of class (housing all income groups) and religion. Residents estimated that 40–50 per cent of the population was Muslim and about 40 per cent Hindu. Substantial incremental house-improvements were evident. Many houses were two or three storeys high. According to the TC survey of 102 households (Raman et al. 2013), 72 per cent had added an extra floor and 30 per cent obtained rental income averaging about Rs. 2,700 per month. House prices had risen dramatically, from Rs. 2.5 lakh for an EWS house 20 years ago to over Rs. 25 lakh now. About 80 per cent of residents had paid dues and obtained sale deeds, which allowed them to access formal loans. Access to transport facilities, markets, schools and hospitals had dramatically improved over the years. However, groundwater levels, once abundant here, had fallen steeply due to the numerous wells dug in the settlement.

Ambedkar Nagar in Velachery, south Chennai, a settlement of predominantly Dalit households, was created as what we term a second-generation S&S scheme. It was implemented in the 1990s (after the World Bank-funded MUDP projects had ended) by the TNSCB as opposed to the TNHB. In contrast to the voluntary enrolment that underpinned earlier S&S schemes, this case was a forced resettlement of slum-dwellers evicted from other parts of the city, often after some resistance.

The settlement was created by reclamation of 100 acres (40 hectares) of land on the Pallikaranai marsh, one of Asia's premier wetland ecosystems, and settling 1,656 families on open plots measuring 15 × 18 sq. ft. The TNSCB provided low-interest loans of Rs. 8,000 for house construction, financed by the Housing and Urban Development Corporation (HUDCO), to around 900 families, selected on the basis of their repayment capacity. Allottees who did not qualify for loans were provided building materials. In 2002, 300 families received house-building loans of Rs. 40,000 each under the Valmiki Ambedkar Avas Yojana (VAMBAY), and in 2008, some families received a grant of Rs. 1 lakh under the JNNURM's Basic Services to the Urban Poor (BSUP) project.

For almost a decade after the resettlement, basic infrastructure and services remained severely deficient: the site lacked piped drinking water, usable roads, adequate transport, stormwater drains and electricity. As the colony was located near Chennai's second largest garbage dump yard, residents were exposed to fires and constant smoke from the yard, posing severe threats to their health and safety.

At the time of the study, there were 2,202 houses in the colony, including new ones that had come up near the entrance along with shops and other commercial establishments. Several migrant workers from north-eastern India were tenants here. A large number of the original allottees had unofficially sold their plots and moved out in the early years due to the distance from their worksites, their inability to repay

loans, and the poor state of infrastructure and amenities at the site. However, over the 25 years since resettlement, and assisted by non-governmental agencies like World Vision India (WVI) and Ambedkar Makkal Iyakkam, services and infrastructure had improved substantially. Several residents of Ambedkar Nagar had made incremental investments in their houses, adding storeys, rooms and toilets, re-tiling floors and attracting tenants. As the city expanded to encompass this site, a range of health care and educational facilities had become available nearby. Problems like alcoholism, drug addiction and gang activity that had rendered the area unsafe for several years were now reportedly on the decline. The most vexing problem here remained poor drainage, causing heavy water stagnation and floodwater ingress into homes during rains.

Another persistent issue was debt: respondents remained heavily burdened by dues and interest on their housing and VAMBAY loans, with outstanding amounts averaging around Rs. 50,000, and some respondents owing more than Rs. 90,000. One respondent commented bitterly on this debt trap: 'The World Bank came and literally thrust the loans down our throats. We had no idea of the interest that would accumulate.'

The resettlement had caused severe disruption of livelihoods. Residents had been unable to find work nearby for over a decade. The dearth of transport facilities and high transport costs had forced many to abandon their earlier jobs along with their skills, networks and experience. Men and women who had been selling fish in Triplicane now worked as security guards or domestic help on the IT corridor. However, better integration into the city had allowed the younger generation to enhance their education and skills: significant numbers were now graduates and had manufacturing jobs or ran small businesses.

Resettlement Tenements

The two cases described here represent two different generations of resettlement projects in two distinct settings. In Rajarathnam Nagar, Kodungaiyur, the TNSCB built tenements in the early 1990s to house conservancy workers from the Chennai Corporation. The workers refused to move in as the tenements were not only distant, isolated and poorly serviced, but were located directly across from the city's largest garbage dump yard. The tenements comprised 288 units of 130 sq. ft each in seven blocks ranged along the Kodungaiyur High Road, where hundreds of garbage trucks plied daily. Behind RR Nagar runs Captain Cotton Canal, a sluggish sewage-laden waterway. Flanking this canal is the Kodungaiyur crematorium, another chronic source of smoke.

Having built the tenements, the TNSCB in 1996 began filling them with families forcibly evicted from various parts of Chennai. The majority were Dalit families from Royapuram. The tenements were provided with toilets but no piped water. At the time of the study, they were in a highly dilapidated state. Respondents reported occupants being injured by collapsing ceilings or walls. Chronic sewage

back-ups forced many residents to use the garbage dump for defecation. These conditions were all dramatically exacerbated by the site's proximity to the dump yard with its smoke, stench and feral dogs. The area was thickly covered with garbage, dust, toxic fumes and waste drifting in from the dump yard or from the trucks transporting waste, and the groundwater was heavily contaminated. A high prevalence of respiratory illnesses, jaundice, cholera and skin infections were reported to have taken a significant toll on the health of children and elderly residents. Air samples taken from the area confirmed the presence of dangerous levels of toxic gases and carcinogenic chemicals (CEM and GAIA 2012).

Residents had waged long but largely ineffective struggles, including petitions, protests, rallies and roadblocks, for redressal of these problems. Government agencies, politicians and ward councillors all appeared to have withdrawn from responsibilities for these tenements. TNSCB officials interviewed for this study were aware of the pollution and its effects on children, and admitted to having to keep their own rent-collection visits short. Road connectivity and access to employment remained poor for at least eight years after settlement.

Kannagi Nagar, located two km off the IT corridor in the southern edges of Chennai about 25 km from the city centre, is one of a new generation of mass resettlement projects that currently marks the state of the art in slum clearance in Tamil Nadu. It comprises 15,000 units in concrete blocks massed on a 40-hectare stretch of marshland, housing around 100,000 residents evicted from 62 different slums across the city. It is a vast working-class ghetto, located outside the city boundaries until 2011. The colony is, even today, perennially surrounded by large pools of stagnant water.

The resettlement colony was assembled with funds from various Central and state government schemes, including the Flood Alleviation Programme (1998), the Central government's Tenth and Eleventh Finance Commission grants and a post-tsunami housing scheme. The tenements were constructed in phases between 2000 and 2005, and were settled in batches from 2001 on. The colony comprises distinct sections which vary in block design (two- and three-storey), unit size[3] (ranging from 120 to 180 sq. ft) and unit design (some have exterior shared toilets and others in-house toilets). While houses were allotted under a 20-year hire-purchase arrangements, the terms of allotment (including monthly instalments, maintenance and compensation amounts) varied widely depending on the year of resettlement and the project under/for which it was implemented.

In official documents, Kannagi Nagar is profiled as a fully serviced 'integrated neighbourhood' offering all amenities. On the ground, however, conditions were so poor for the first 8 to 10 years that the colony became notorious for its squalor, unsafe streets and high rates of alcoholism, crime and suicides. Early batches of allottees found themselves in a poorly serviced wasteland. In 2011, a fact-finding report on Kannagi Nagar found living conditions still unhygienic, squalid and unsafe (PUCL

2010). Water was supplied once in 10 days. Poor water supply rendered the in-house toilets unusable, and open defecation continued. Entire blocks were connected by a single sewer line to septic tanks, making blocked lines and overflowing tanks common. A TNSCB survey found that by 2011 at least 50 per cent of allottees had sold or rented out their units; most had done so in the early days at low prices, due to the challenging living conditions and the distance from livelihood sources. Our earlier study in Kannagi Nagar (Coelho et al. 2012) found that over 70 per cent of residents were from Scheduled Caste (SC), Scheduled Tribe (ST) or Most Backward Class (MBC) categories, highlighting the caste segregation reproduced by these mass resettlement colonies.

By 2013, the settlement had seen considerable amelioration in living conditions, largely due to the struggles that residents had waged over the years, including sending 20,000 postcards to the Minister for Housing and Urban Development. Water was now provided on alternate days, streets were swept and door-to-door garbage collection initiated. But heaps of garbage still lay rotting in open spaces and between buildings causing heavy fly and mosquito infestation. Electricity connections were not formally provided until 2010.

The greatest casualties of the relocation were education and employment. The inadequacy of schooling facilities nearby meant that large numbers of children commuted to city schools in overcrowded buses, leaving home at 6 a.m. The widespread loss of livelihoods faced in the early years were somewhat mitigated around the mid-2000s by the development of the information technology (IT) corridor in the vicinity of the colony. However, the resulting quantitative expansion in job opportunities was offset by the poor quality of jobs offered to Kannagi Nagar residents, the vast majority of whom worked in insecure, low-paid jobs in paid domestic work, housekeeping, security, sales or casual factory labour.

The next section discusses the comparative strengths and weaknesses of the various slum-clearance approaches outlined above, using the six criteria developed for the study.

3. THE OUTCOMES: A COMPARATIVE ASSESSMENT OF THE INTERVENTIONS

3.1 Tenure security

Providing tenure security through formal property titles was a key objective of all the interventions. However, in almost every case, while de facto tenure security was provided through allotment papers, NOCs and recognition under the Slum Act, beneficiaries had by and large failed to secure titles after 20–30 years. The path to gaining title was through hire-purchase arrangements involving monthly payments that almost all had defaulted on. In most cases, penalties and interest on defaults and late payments had mounted into large dues that allottees had little intention or ability to pay.

In the in situ tenements, tenure security was constrained or compromised by several other factors. First, the poor condition and limited life span of the buildings rendered them of dubious asset value. The large sums that residents had already spent on repairs and maintenance deepened their unwillingness to pay dues. Additionally, many allottees had informally 'sold' their units, and since such transfers were illegal, the new owners had been unable to gain title. Third, even de facto tenure security was undermined by the unworkably small dwelling sizes and the ongoing threats of demolition of the extensions that residents had built to house their families. Tenement projects then, while affording their residents secure housing in the heart of the city, denied them the dynamic benefit of de facto tenure security, namely the opportunity to invest in further housing improvements.

In SIP schemes, the in situ locational advantages were strongly leveraged by opportunities to incrementally improve and extend housing, allowing allottees to enhance incomes through rentals, and making the de facto tenure security a very valuable aspect of the intervention. The widespread failure to pay dues and obtain formal titles here too, however, denied them access to formal credit.

The two S&S cases also displayed the advantages of providing secure tenure on open plots, through the extensive housing stock that had been incrementally added by residents. However, in terms of formal security, they revealed starkly contrasting outcomes. Muthamizh Nagar was the only instance in our sample where a clear path to obtaining titles was laid out, with flexible payment options (down payment or monthly instalments), resulting in the majority of beneficiaries having secured sale deeds. This made them creditworthy with formal lending institutions. About 49 per cent of the home improvements made by residents were financed by formal loans (Raman et al. 2013). In Velachery, by contrast, no household had obtained a title, as high interest rates on VAMBAY loans, and the interest-on-interest levied by the TNSCB had made it impossible for many to clear their dues. Here, as in the relocation tenements of RR Nagar and Kannagi Nagar, poorly implemented resettlement had forced large numbers to abandon the allotments, sacrificing future benefits. In RR Nagar, most residents had long ago stopped paying their monthly instalments, and evinced little desire to own the space or build a life there. They frankly declared that if they could find affordable accommodation elsewhere, they would readily move. This case testifies to the strong links between living conditions and tenure security.

3.2 Environmental Improvements

The in situ tenements, while initially offering distinct benefits by moving households from flood-prone huts into concrete homes with basic amenities, soon deteriorated due to poor construction, neglect of maintenance, and their design, involving small dwellings in multi-storied high-density blocks. Thirty years later, they appeared as vertical slums, with poor access to water, chronic sewage blocks, accumulated garbage and congestion from the huts in open spaces.

The SIP sites, on the other hand, emerged as well-integrated, densely populated but sturdy low-income neighbourhoods, with clean and paved, if narrow, streets and small multi-storied buildings. Although both sites still suffered from sewer blockages, poorly maintained public toilets, flooding and inadequate water supply, respondents in both settlements affirmed that significant improvements in living conditions had occurred over the years through their collective efforts. Yet they still considered these neighbourhood slums due to the poor quality of housing and services, and their own low incomes.

The two S&S sites, again, differed dramatically on this aspect. In Muthamizh Nagar, the site was transformed from an isolated patch of forestland to a well-serviced and decent habitation, with parks, playgrounds and good roads. The mixed-class character of the neighbourhood played a part in ensuring that basic amenities were provided from the outset. The congestion seen in tenement projects, with houses spilling into common spaces, was absent here, due perhaps to the larger size of the EWS allotments. In Velachery, however, resettlement goals of moving families into decent housing in hygienic surroundings were undermined on two counts. First, the resettlement site was a marshland, causing chronic drainage problems and possibly worse living conditions than before. Second, the promised services and amenities were absent or inadequate for long after the move. Despite advances in the intervening 25 years, these initial conditions posed a serious setback for relocated households, resulting in large-scale sales of allotments.

The resettlement tenements had also fared poorly on this aspect. The RR Nagar project, far from ameliorating living conditions, had exposed its largely SC residents to extreme levels of pollution from its toxic surroundings. Coupled with chronic neglect by the state, these conditions have come to be described as 'environmental untouchability'. In Kannagi Nagar, the planned layout of the site, with wide main roads and large open spaces, had allowed the neighbourhood to absorb growth and transformation. However, its location on a marshland had contributed to degraded living conditions, and the small size of dwelling units and long struggle for adequate services had significantly diminished its benefits for residents. Despite significant improvements in the last five years, Kannagi Nagar remains notorious and stigmatised as a ghetto of/for poor people.

3.3 Livelihood Enhancement

Our starting assumption that in situ approaches, whether tenements or upgrading, would produce marked advances in livelihood security and economic mobility for beneficiaries was proved false. Despite gaining a foothold in central, economically dynamic areas of the city, and despite improved access to social infrastructure, significant upward mobility was not apparent in any of the four sites studied under these approaches. While employment opportunities had increased in all the sites, especially for women, the first two generations of beneficiaries still worked in low-paid, low-quality, informal occupations as manual construction

workers, domestic workers, vendors or casual labour in companies. The character and ethos of the settlement evidently had some impact on occupational decisions. In the Vyasarpadi tenements, where respondents reported high dropout rates, low educational attainment and risks of children straying into criminal gangs, women were mostly not working, even in paid domestic work. A woman who resigned her call centre job after getting pregnant explained: 'My children are not regular at school, so I have to be here to send them to evening tuitions, otherwise they will hang around with the other children, which is not safe.' However, poor economic mobility cannot be explained entirely through housing variables. In the SIP site of Shastri Nagar, where most men had worked in formal establishments like BNC Mills until they shut down, the loss of formal jobs fed into the cycle of low literacy, unemployment and underpaid informal jobs, which accounted in large measure for the persistent poverty. However, educational opportunities were being vigorously utilised to build pathways of economic mobility for the young.

In both the resettlement tenements, and in the S&S project in Velachery, which was also a case of forced resettlement, livelihood security had received decisive setbacks, which many households had not recovered from after two to three decades. In Velachery and Kannagi Nagar, while the settlements had been transformed over the course of a decade from wastelands of despair into bustling hubs of economic activity, and while the urbanisation of surrounding areas had expanded livelihood opportunities, residents had paid high economic costs for these advances. Aside from the recurring costs of transport and travel time, these included irrecoverable costs such as losses in career mobility, occupational networks and development time.

In both projects, the younger generation had pursued education and obtained better jobs than their parents. But our 2011-12 study of livelihoods in Kannagi Nagar (Coelho et al. 2012) found that women's employment was one of the great casualties of the forced relocation. The challenges of running households in a poorly serviced resettlement site and the lack of social networks for childcare added to logistical issues of distance, timing and transport to force large numbers of women out of the workforce. Formal sector workers had also been severely hit by the relocation. Widespread informalisation and poor-quality employment contributed to the persistence of poverty in the settlement and to heavy indebtedness, alcoholism and domestic violence. In 2010, nine murders and 30 suicides were reported in Kannagi Nagar. In the resettlement tenements of RR Nagar, the garbage dump yard had dampened any potential for economic development in the area, and two decades after resettlement, the options for residents comprised working in the dump yard as ragpickers or waste traders, or commuting elsewhere.

The S&S project in Muthamizh Nagar was the only one of our cases that displayed a transformation in the economic profile of its residents. While a large proportion of original allottees had been daily wage labourers, the TC survey in 2012 found 43 per cent of household heads in 'salaried/regular' employment and only 6 per cent were engaged in 'daily wage/casual' work. A crucial contributing

factor here were the industrial blocks situated within the site, which had provided employment to EWS allottees right from the start. The development of this mixed-class site had also boosted the economy of surrounding areas, providing employment and entrepreneurial opportunities, including for women. Functioning crèches allowed women to participate actively in the workforce. Overall, families had experienced considerable upward mobility, with even the offspring of daily wage workers now working in white-collar jobs or running their own businesses.

3.4 Sustainability

One of the strongest determinants of the differences in outcome between in situ tenements and in situ slum upgrading projects was governance. The persisting slum-like character of the tenements was ascribable to a governance trap in which ongoing maintenance of the poorly built multi-storied structures proved too costly for the government but also discouraged residents from investing in their upkeep. Overlapping administrative jurisdictions between state service providers diluted accountability. Metrowater and the Corporation, respectively responsible for sewerage and garbage management, held the TNSCB liable for problems within the tenement premises. The ward councillor blamed residents for sewer blockages, ascribing them to poor maintenance of drainage outlets within homes and encroachments on drains by huts or shops. Associational activity, where it existed, had failed to fill the gaps in governance and was often supplanted by political party involvement. There was scant community cohesion or solidarity evident in the tenements. Aside from the slum-like physical conditions, residents in both areas emphasised ongoing social unrest ranging from fights, thefts, and harassment of women, to (especially in Ambedkar Paalam) violent crimes like murder. According to respondents, the stigma of slums still clung to these sites. These outcomes are largely consistent with conditions observed in state-built public housing projects worldwide (UN-Habitat 2003).

In contrast, both the slum upgrading sites evinced a substantial history of collective action. Salaima Nagar residents had long been organised under *sangams* (associations) linked to Pennurimai Iyakkam. In Shastri Nagar, various organisations, including the DMK-affiliated Makkal Munnetra Mandram and the DBSSS, had played active roles from the 1980s in forming women's associations, which had campaigned successfully to shut down a liquor store and to manage the area's garbage problems. Although these NGOs were no longer active here, residents often came together to take representations to authorities and, if necessary, pool funds to solve infrastructural problems. In both areas, strong community cohesion and a sense of belonging was evident, stemming from long shared histories of collective struggles. Respondents attested to marked improvements in the social life of the community and reduction in alcoholism and crime.

The resettlement tenements fared poorly in this aspect. In RR Nagar, residents felt trapped by a lack of choice and evinced a sense of hopelessness. In Kannagi

Nagar, collective action by residents had brought improvements in amenities and advances in liveability in recent years. But the sustainability of the intervention was undermined by, first, the early failure of the resettlement process to retain allottees and, second, the ghetto effect achieved by concentrating large numbers of working-class families in a single poorly serviced site. In addition, the vast scale of construction on an ecologically fragile marshland exposed both the colony's residents and the larger area to risks of flooding. These risks proved disastrous in the floods of December 2015, when large parts of Kannagi Nagar were submerged for several days.

Muthamizh Nagar's transformation into a mainstream urban neighbourhood was also sustained by an ongoing strain of collective action, especially among EWS residents, in addressing maintenance issues. Some blocks had welfare associations; most also had a resident employed at a government office who could get complaints addressed. Ward officials and councillors were described as reasonably responsive. All respondents asserted that Muthamizh Nagar was a safe and dignified place to live in.

3.5 Inclusiveness

The in situ tenements had failed to rehouse all the original slum-dwellers; high costs of construction and maintenance, and constraints on expansion of space rendered these projects limited in their coverage and inclusiveness. This also describes the resettlement tenements in RR Nagar, which catered to a very limited proportion of the slum households of even north Chennai. The in situ SIP projects, on the other hand, not only allowed a wider coverage, but also facilitated expansion of affordable housing stock through incremental construction by residents. The cost-effectiveness of this approach makes it widely replicable. However, SIP schemes in Chennai were targeted to 'owners' and excluded tenants.

The S&S scheme in Muthamizh Nagar carried a high degree of inclusiveness due to its voluntary nature and because it was also open to renters. Several S&S schemes were simultaneously launched across the city, making large numbers of EWS plots available. However, the S&S scheme in Velachery was unevenly rolled out, with different batches of allottees receiving varied loan packages and benefits. Consequently, some resettled families had been able to invest in additions to their housing, while others had to sell their allotments and leave. The high cost of the intervention and the heavy onus of cost recovery built into it significantly reduced its inclusiveness.

The Kannagi Nagar project accommodated a vast sweep of slum-dwellers from across the city. However, the resettlement process excluded many evicted families who were unable to produce proof of residence before the cut-off dates. It also excluded tenants. Within Kannagi Nagar, the uneven resettlement and compensation packages, and the wide variation in housing design, space and

quality of infrastructure caused divisions and resentment. The high-rise design was unfriendly to the needs of disabled and elderly residents.

3.6 Costs

Tenement projects are notoriously costly. A TNSCB official estimated the cost of the Ambedkar Paalam tenements in 1984 at around Rs. 26,000 per house, over ten times the amount spent on the MUDP SIP projects. As the case studies reveal, the state was not able to recover more than a fraction of these costs from beneficiaries. But the latter had also borne significant costs in terms of the waiting time for allotments, repairs and maintenance of homes, and interest and penalties on delayed instalments.

The slum-upgrading interventions, on the other hand, called for relatively low levels of direct capital outlay from the state, and no land acquisition. The MUDP I's SIP projects in the 1980s benefitted 25,000 households across the city at a cost of Rs. 5.63 crore, averaging about Rs. 2,252 per household. Yet, as pointed out above, the financial design of the scheme in terms of loan repayment and interest schedules made it difficult for the state to recover costs.

In Muthamizh Nagar, cross-subsidies made plots affordable for EWS beneficiaries and the provision of core housing with sanitation shared costs between the state and beneficiaries, facilitating incremental investments by residents and spreading their costs over time. The S&S project in Velachery, on the other hand, was costly as land acquisition costs were augmented by large investments in land reclamation and structural strengthening of the site. Here too, the financial structures of the scheme were poorly designed. While repayment schedules were not onerous in themselves, the high interest and the interest-on-interest levied on households that had lost their livelihoods made the demands burdensome. These issues emerged as among the most problematic legacies of the scheme. In Kannagi Nagar, a single unit is estimated to have cost Rs. 87,000 in the first phase and Rs. 4,60,000 in the second. These costs are comparable to those of tenements within cities but do not provide the locational advantages of in situ rehousing.

4. CONCLUSION

The six criteria employed in this study revealed the differential strengths and weaknesses of various approaches to slum clearance. This is a methodological contribution to studies of slum clearance. While this paper employed the metrics in a discursive mode, they can also be turned into weighted variables to build an assessment matrix conveying the relative magnitudes of these strengths and weaknesses.

The assessment showed how these six factors could operate in divergent ways across different models of slum clearance. For instance, the advantages of in situ location in tenement and SIP projects were offset by poor design and maintenance or weak governance. Also, provisions for formal tenure security had, in almost all

cases, been undermined by poor financial design of the schemes, which charged unviable (low) monthly instalments but imposed high rates of penal interest on delayed instalments, thus building up large dues over time for houses that were already old and dilapidated.

However, the six metrics displayed a convergence in the case of Muthamizh Nagar, the most successful case in our sample. The current global state of the art in slum clearance advocates in situ slum upgrading, adding crucial ingredients of beneficiary participation and citywide scaling (UN-Habitat et al 2008). This approach has also been advocated by Indian slum-free missions like RAY. However, the two slum-upgrading cases in our study failed to yield the expected transformative outcomes, for two main reasons. First, the basic infrastructure and services envisaged in the scheme were not provided. It took many years of struggle and mobilisation by residents to arrive at current, still deficient, levels. Indeed, state failures in service delivery and maintenance of infrastructure emerge across the board in this study, testifying to the weak commitment and capacity of the state machinery in governance of housing projects targeted at lower classes and castes (Kamath 2012). Effective collective action by residents emerged as indispensable in improving outcomes in this respect. Second, the failure of the SIP projects to generate significant economic mobility despite providing slum-dwellers a secure foothold in the city, points to larger economic trends, particularly the informalisation of labour in Indian cities, as ensuring the persistence of poverty in working-class settings.

What explains the successful transformation of Muthamizh Nagar, an S&S scheme that involved relocation to the urban periphery? Aside from the voluntary nature of the scheme, the case underlines two crucial ingredients. First, the inclusion of industrial facilities provided on-site employment to relocated households from the start, mitigating the profound livelihood disruptions seen in forced resettlements. A second important element, neglected in the best-practice literature on slum clearance, is the designed mixing of social (caste and class) groups within the neighbourhood, which prevented ghetto effects and their associated governance biases. The efficient and thorough implementation of the scheme was also perhaps ascribable to the implementing agency being TNHB, the state's mainstream housing agency, as opposed to the slum-clearance agency. In contrast, the latest resettlement tenements, promoted as 'integrated neighbourhoods' providing improved housing, emerged in this study as slum-like ghettos due to their segregation and concentration of low-caste working-class populations. The struggles that still shape Kannagi Nagar 12 years after its bleak beginnings suggest that the reduction of the problem of slums to the problem of housing can perpetuate both slums and poverty.

The case studies also highlighted the understudied ecologies of resettlement. Floodplains, lakes and marshlands figure prominently both in squatters' geographies and in the state's choice of resettlement sites (Doshi 2013; Coelho 2013), rendering vulnerability to floods one of the recurrent themes in stories of insecure and squalid

shelter conditions. In Chennai, the two large garbage dump yards also appear as dominant figures in the ecologies of state resettlement.

And finally, the case studies highlight the ways in which time plays out in the urban pursuit of socio-economic mobility. Metropolitan rhythms can be intrinsically transformative, but state interventions that disrupt the pathways of working-class mobility contribute to compromising rather than leveraging such rhythms for their 'development time'.

NOTES

[1]   The study was commissioned by the Tamil Nadu State Planning Commission in 2011. I thank Shanta Sheila Nair and Sugato Dutta for their support. I am also heavily indebted to the team of researchers from the Madras Institute of Development Studies and Transparent Chennai, comprising T. Venkat, Priti Narayan, Anusha Hariharan, Shreela Manohar and Aishwarya Balasubramaniam, who conducted the fieldwork and wrote up the detailed case studies that have been abstracted for this paper. The full report authored by the team is available at MIDS and TC (2014). I am grateful to T. Venkat and Priti Narayan and two anonymous reviewers for valuable comments on an earlier draft.

[2]   In India, these include the National Urban Housing and Habitat Policy (NUHHP) 2007, the report of the High Level Task Force on Affordable Housing (henceforth HLTFAH) 2008, mission statements of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) 2005, and Rajiv Awas Yojana (RAY) 2013.

[3]   The minimum size of a resettlement dwelling unit in urban areas, as recommended by the National Rehabilitation and Resettlement Policy 2007, is 556 sq. ft. The RAY guidelines stipulate between 226 and 290 sq. ft.

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1. Papers not already published nor meant for publication elsewhere should be sent in a word document to editrdc@gmail.com.

2. Articles should be between 8,000 and 10,000 words including tables, charts, notes and references. Book Reviews should be 1,000 to 1,500 words. But discretion rests with the editors. The articles should be typed in Times New Roman Font size 12 and 1.5 line spacing.

3. Each paper must have a title page which will carry the full title of the paper, the name and address of the author, and institutional affiliation, if any, and should provide a contact phone number and email address. The title page must also give an abstract of the paper (100 to 150 words), and may include acknowledgments. The author should not be identified anywhere else in the paper. The page starting the text of the paper should carry only the title of the paper.

4. All tables and diagrams should be formatted in black and white. Data used for tables and graphs must be provided in Excel. All tables and diagrams must carry numbers for identification and must be clearly referenced in the article.

5. Reference to sources/literature cited should be carried within the text in brackets giving the name of the author, year of publication and page number, e.g. (Basu 1967: 35). Notes and list of references (bibliography) must appear at the end of the text. References should be listed alphabetically by author and chronologically for each author. Some examples are given below:

   Rao, S.R. and J.W. Townsend. 1998. Health needs of elderly Indian women: an emerging issue, In Krishnaraj, M., Sudarshan R.M. and Shariff, A. (eds), *Gender, Population and Development*, New Delhi: Oxford University Press, pp. 340–363.

   Sundararaman, T., I. Mukhopadhyay and V.R. Muraleedharan. 2016. No respite for public health, *Economic and Political Weekly*, 51 (16): 39–42.

   Tout, K. 1989. *Ageing in Developing Countries*. Oxford: Oxford University Press.

6. The journal follows British English spelling (with -ise variant), not American (e.g. programme, not program; labour, not labor). The Oxford Advanced Learner's Dictionary is to be followed for spellings.

7. Quotation marks should be consistently single, except for a quote within a quote: e.g. Sen summed it up best by saying: 'The importance of capital in the production process notwithstanding, a distinction must be made between "foreign" and "domestic" capital.'

8. Authors will receive a PDF file of their published article.