Desired Outcomes, Unexpected Processes:  
Two Stories of Sanitation Maintenance in Erode Tenements, India

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ABSTRACT

A central challenge facing municipalities in developing countries is the successful maintenance of sanitation services for their urban poor. Not only are municipalities struggling to cope with increased sanitation coverage to their urban poor, but the challenge of successful sanitation delivery is further compounded by the poor maintenance of sanitation systems, thus rendering the existing infrastructure unusable.

This thesis focuses on septic tank maintenance in tenements in small municipalities in Erode district, India. The findings of this thesis are that the desired outcome of good sanitation maintenance in the Erode tenements is due to variables that are often overlooked in the maintenance literature and also due to unexpected processes that defy conventional wisdom on effective service delivery for the urban poor. Three variables that contributed to good sanitation maintenance in the Erode tenements are: 1) design: the location of the septic tank system played an important role in maintenance, 2) bundling of services: linking septic tank maintenance to use of public taps helped tenement residents monitor and enforce septic tank maintenance, and 3) decentralization: the changing relationship between the tenement residents and the municipality, through the process of decentralization, from a patron-client one to one akin a commercial transaction, partially explains the good performance in septic tank maintenance.

The findings of this thesis shed light on the variables that do matter for good sanitation maintenance and show how incentives and institutional arrangements can be structured differently to achieve the desired outcome of well-maintained, long-lived sanitation systems.

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1 Tenements, as public housing units are called in India, are 3-4 story flats constructed by the state for housing re-located slum dwellers.
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Acronyms

SN  Sathya Nagar, the poor performer tenement case study
PN  Poompuhar Nagar, the good performer tenement case study
TNSCB  Tamil Nadu Slum Clearance Board
ULB  Urban Local Body
EO  Executive Officer
WC  Ward Councillor

Currency Exchange Rate

2007-08: 1 U.S Dollar = 41.68 Indian Rupees
Chapter 1: Introduction

During my visit to Erode district, South India, I was struck by a contrast: within the same district, the septic tanks\(^1\) of one tenement\(^2\) were extremely well-maintained; those of the neighboring tenement were in a neglected condition, choked to capacity and unusable. Erode district does not have a sewage system, so all residents are dependent on septic tanks for their sanitation needs. The septic tanks of Sathya Nagar (SN) were filled beyond capacity with sewage and, particularly during the monsoon season, the sewage overflowed from the tanks into the open, resulting in unsightly and unhygienic pools of stagnant, dirty water. Due to the clogging of the septic tanks and the drainage pipes, the sewage frequently backed up into the household toilets, rendering them unusable. In contrast, Poompuhar Nagar's (PN) septic tanks were functioning well; any clogging of the septic tank or the drainage system was promptly attended to by the residents and the local municipality, resulting in clean, well-maintained and hygienic surroundings.

This raised the question: within the same municipality, why are residents of some tenements more willing to contribute towards septic tank maintenance than others? Why is the same municipality more willing to extend maintenance support to the residents of one tenement compared to the other? In short, though located in same municipality, what are the institutional arrangements and incentive structures that make PN more successful in septic tank maintenance than SN?

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\(^1\) Septic tanks are decentralized, on-site sewage treatment systems, common in areas that are not connected to sewerage pipes. Septic tanks vary in size from small ones individually serving households to larger ones shared by a community; the Erode tenement septic tanks belong to the latter category.

\(^2\) Tenements, as public housing units are called in India, are 3-4 story flats constructed by the state for housing re-located slum dwellers.
I start this chapter with a brief introduction to the institutional context, followed by an explanation of the thesis title "desired outcomes, but unexpected processes". I then outline the significance of the research and the reasons why planning practitioners, policy makers and researchers should be paying attention to septic tank maintenance. I frame my research questions around two unexpected findings from my field research: 1) contrary to the conventional wisdom that asset ownership is an incentive for asset maintenance, the well maintained tenement, Poompuhar Nagar (PN), has a higher percentage of renters than the poorly maintained one, Sathya Nagar (SN); and 2) though the residents of both SN and PN are defaulting on their property taxes (which is one of the main sources of revenue for the municipality for maintenance of services like septic tanks), only the PN residents are successful in receiving municipal support for septic tank maintenance despite defaulting on their property taxes.
taxes. I then briefly present my research findings to explain how PN, despite having a higher percentage of renters and PN residents defaulting on their property taxes, is more successful in septic tank maintenance. I conclude the chapter with the research methodology.

### 1.1 Institutional context

This research is framed within two important institutional changes in Erode: 1) in 1990, the Tamil Nadu Slum Clearance Board (TNSCB), the state agency which had heretofore been responsible for maintenance of tenement services (including septic tanks), decided to focus all its energies on tenement construction and to hand over maintenance of tenement services to the urban local body (ULB) in which the tenement is located and the tenement residents, and 2) in 1992, the 74th Constitutional Amendment Act was passed in India which devolved responsibilities provision and maintenance of services (including, but not limited to, water suppy and sanitation) to the urban local bodies\(^3\). Since 1992, the ULB of B.P.Agraharam (in which both SN and PN tenements are located) and the tenement residents have been responsible for the maintenance of the tenement septic tanks.

### 1.2 Explanation of title "desired outcomes, unexpected processes"

PN is a good performer in septic tank maintenance because the residents and the ULB have a clearly delineated system for sharing maintenance responsibilities between themselves, the PN residents are an organized group capable of taking over some of the septic tank maintenance tasks and negotiating effectively with the ULB for demanding services, and the PN residents access the ULB for maintenance support through the bureaucracy rather than through

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\(^3\) It is interesting that the 1990 change in tenement policy (of transferring tenement maintenance responsibilities to the ULB and the tenement residents) pre-dated India's decentralization policy by 2 years. But the TNSCB’s change in tenement policy was made possible only through the 1992 Constitutional Amendment, because without the Constitutional Amendment mandating water supply and sanitation services to be taken over by the ULB, the TNSCB couldn’t have enforced this change on the ULBs.
the route of political patronage. Though these reasons for the good performance of PN in septic tank maintenance seem simple enough, we know that we cannot take for granted the achievement of these outcomes. Empirical research has shown that sharing and coordination of responsibilities between institutional actors is a challenging feat, not all resident groups are organized enough to positively contribute to improving their service delivery, and for the urban poor, political patronage and vote-bank politics still remains a very effective channel for getting service demands met. Recognizing these challenges, the TNSCB instituted a raft of reforms when it devolved tenement service maintenance responsibilities to the ULBs. It formed a Community Development wing to help tenement residents form "Welfare Associations" (resident associations) so they can take over tenement service maintenance, it changed its tenement property rights system from renting to lease-to-purchase to incentivize residents to take over maintenance responsibilities through the "provision of ownership rights" , and it devolved service maintenance responsibilities to the ULB bureaucracy. But the desired outcome of better septic tank maintenance in PN was not due to the TNSCB policy changes; instead the PN residents and the ULB achieved good performance in septic tank maintenance because of an unexpected series of events. This research shows how the ULB's act of resistance to the increased service responsibilities brought about by decentralization triggered a series of events that helped PN residents and the ULB achieve the desired outcome of good septic tank maintenance. Thus, the desired outcome of good septic tank maintenance in PN was achieved not through policy changes at the state level, but instead through the dynamics at the local level of different institutional actors resisting and/or adapting to their re-defined responsibilities after decentralization.

4 Source: http://www.gotn-tnscb.org.in/cdevslum.htm
5 Ibid
1.3    **Significance of the Research**

1.3.1    **Relevance to tenement maintenance discourse**

The Tamil Nadu Slum Clearance Board (TNSCB), the state agency responsible for the provision of affordable housing, has been constructing tenements since 1971. Tenements are a favored affordable housing response by the state in India and tenement construction is a significant component of the TNSCB's activities; nearly 55% of the TNSCB expenditure is on tenement construction\(^6\). The TNSCB is one of the most active affordable housing agencies in India and it has constructed its highest density of tenements in Erode district. One of the main challenges with tenements is their poor maintenance, and septic tanks are the most neglected components within tenement maintenance. The Erode newspapers are rife with accounts of the dilapidated condition of tenement septic tanks due to lack of maintenance:

"Here, residents fear for life", The Hindu, July 13, 2007

Erode: Most of the PVC pipes that carry sewage to the ground are absent. The result: water flushed out from bathroom and kitchen and perhaps toilet get to the ground by flowing over the walls and also falling on passersby.

At the Slum Clearance Board, officers say the State Government has a proposal pending to demolish the apartments to construct a new one.

As the above news report in The Hindu points out, the TNSCB has a proposal to demolish all the tenements in dilapidated conditions and replace them with new tenement constructions. According to the 2005 annual TNSCB budget\(^7\), of the agency's total expenditure during 2005-06 on various affordable housing schemes, 55% will be spent on constructing new tenements and 15% on the demolition and reconstruction of dilapidated ones.

But despite the myriad proposals to build more tenements and reconstruct existing ones due to poor maintenance, the TNSCB does not have a maintenance strategy for its new constructions and reconstructions. *This research can shed some insight on how incentives and*

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\(^7\) Ibid
institutional arrangements for septic tank maintenance can be structured differently, so that future tenement septic tanks are well maintained and the TNSCB expenditure positively contributes to increasing the state’s affordable housing stock.

1.3.2 Relevance to decentralization discourse in developing countries

This research is set within India’s changing political landscape following the 1992 Constitutional Amendment to decentralize decision-making and service responsibilities to the urban local bodies (ULBs). Both of my case studies are located within the same small ULB in Erode district, called B.P.Agraharam; the good performer, PN, was constructed after the 1992 policy change and the poor performer, SN, was constructed before in 1988. The empirical research on decentralization in India (Kundu, 2002; Roy, 2006) and other developing countries (Ahmad et al, 2005) has focused on the failure of small, resource-constrained ULBs to provide and maintain services after decentralization. While these challenges of decentralization, of saddling small ULBs with service responsibilities they can’t cope with, are very real and were evident during my field visits to the B.P.Agraharam tenements8, this research differs from the current literature on decentralization in India in two ways: 1) it looks at small ULBs not as passive actors who are forced to adopt state and national level policies, but as proactive ones, who within the limited political space available, secure their interests in the shifting sands of India’s political landscape and 2) my research findings are contrary to current empirical research, where decentralization resulted in poor service delivery by small ULBs, because all three Erode tenements constructed after 1992 have well-maintained septic tanks, both

8 An example of service responsibilities being devolved from the state level to the local government, without equipping the local government with the operational capacity to carry out these responsibilities, is the de-sludging of septic tanks in the Erode tenements. The responsibility of septic tank maintenance is with the urban local body (ULB) of B.P.Agraharam. One of the septic tank maintenance tasks is de-sludging of the septic tanks, i.e. periodic removal of the sludge once in 1-5 years depending on the size and usage of the tank. De-sludging is carried out using a sludge removing vacuum truck. B.P.Agraharam is a very small resource-constricted municipality and it doesn’t own a sludge removing truck because it can’t afford one, and hence has to borrow the truck from its neighboring larger municipality of Erode. The bureaucratic process of borrowing a sludge removing truck from a neighboring municipality is a long and tedious one, and as a result, de-sludging of the septic tanks is one of the most difficult tasks for the ULB.
tenements constructed before 1992 have poorly maintained septic tanks. This research posits that the decentralization policy caused a paradigm shift in the nature of the relationship between citizens and the state, from a more patron-client one before decentralization (exemplified through the SN case) to a more "commercial" one (Wright, 1997) after decentralization (exemplified through the PN case), where citizens, as consumers of a service, pay the state in exchange for services rendered. This change in the relationship between the state and citizens and its effects on septic tank maintenance is an important finding of this research.

1.3.3 Wider relevance to the infrastructure maintenance discourse

This research addresses a key concern in the infrastructure discourse on maintenance of infrastructural services like water supply and sanitation. International organizations that fund infrastructure projects, like the World Bank, have been conducting extensive research on the different institutional arrangements for infrastructure maintenance because they recognize that billions of dollars spent on infrastructure reconstruction could have been saved through regular infrastructure maintenance (Khwaja, 2004). When, as in the case of the Erode tenements, infrastructure maintenance is devolved to the ULB and the local users, "there is an implicit assumption that the municipality will maintain services, though they cannot, or that the users will do it, though users are not consulted" (Evans, 1998). The fallacy of this assumption is evident from the numerous examples of "well-intentioned projects falling into disrepair and disuse...through neglect of maintenance" (Wright, 1997). This research addresses a critical question in the infrastructure maintenance discourse: "What are the factors at community, city and intermediate levels, which are likely to promote the successful operation and maintenance of services at the local level?"

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9 Recognizing the centrality of maintenance to the infrastructure discourse, the World Bank, UNDP and DFID co-sponsored a conference in Nepal in 1998, with this question as the central theme for the discussions.
1.4 *The tenement puzzles*

There are two conventional explanations in the infrastructure maintenance literature for the success or failure of infrastructure maintenance: 1) owners are more likely to maintain their infrastructural services than renters; and 2) when municipalities fail to respond to user complaints on infrastructure repairs/maintenance because of a lack of resources, users get dissatisfied with the service and stop paying. This "downward spiral in service quality, cost recovery and attention to maintenance, makes many schemes practically worthless only a short time after completion" (Wright, 1997).

Both of these conventional explanations for good/poor outcomes in infrastructure maintenance are challenged by my research findings.

1.4.1 *The Ownership Puzzle*

When the TNSCB decided, in 1990, to devolve certain tenement maintenance responsibilities to the ULB and the residents, it recognized that it would be naïve to expect tenement residents to voluntarily assume responsibility for tenement service maintenance and that it would have to set up appropriate incentive structures to encourage residents to maintain their tenement units and associated infrastructural services. The dominant idea in the asset maintenance literature is the positive incentive of ownership on maintenance. There is consensus in the empirical research that owners are more motivated to maintain their assets than renters because owners benefit from investing in maintenance through increase in asset values (Hoff and Sen, 2000; Galster, 1987) and their lower mobility motivates them to invest in their property and community (diPasquale and Glaeser, 1998, Malpezzi and Tewari, 1991). In compliance with this dominant idea, the TNSCB changed its tenement property rights policy from renting to lease-to-purchase, where tenement residents pay a monthly mortgage for a period of 20 years, at the end of which they will be granted ownership of the unit.
However, on looking at the composition of owners and renters in SN and PN, I was presented with a puzzle: PN, the well-maintained tenement, has a higher percentage of renters (49.4%) compared to SN (28.4%). In the tenements, the occupier of the tenement unit is responsible for maintenance, so it is surprising that PN, where almost half the units are occupied by renters, has good maintenance compared to SN. So, even though the change in tenement policy to lease-to-purchase was predicated on the ownership-as-incentive assumption, the findings in PN turn this assumption on its head. If ownership is not the reason for better maintenance of PN, what is?

1.4.2 The Property Tax Puzzle

The TNSCB’s 1990 policy devolved tenement maintenance to both the tenement residents and the ULB in which the tenement is located, with the assumption that tenement maintenance responsibilities will be shared between these two institutional actors. One of the main challenges with tenement maintenance is that the ULB finances the maintenance of services (including septic tanks) through revenues collected from property taxes. The SN residents default on their property taxes with the justification that since their tenement services are poorly maintained, they don’t perceive any benefits from paying property taxes. The ULB, on the other hand, justifies its poor maintenance of tenement services saying that since residents default on their property taxes, the ULB doesn’t have the revenues to maintain tenement services. A vicious cycle of defaulting on property taxes and poor maintenance of tenement services is thus set in motion. Since property taxes pay for the services consumed by the residents (like water supply and sanitation), the occupier of the tenement, irrespective of his/her status as owner or renter, is responsible for property tax payment. The surprising finding from my field research is that PN residents also default on their property tax payment; as of the 2006-07 property tax records of the ULB, only 16 tenement households were up-to-date with their property tax payment, i.e. only 9% of PN households had no property tax arrears. Despite the
poor performance of the PN residents in property tax payment, how are they more successful than the SN ones in receiving support from the ULB for septic tank maintenance?

1.5 Research findings

The findings of this research are organized into three chapters. Chapter 2 sets the geographical and institutional context for the research, and highlights the institutional challenges in the transfer of the tenement asset from one state agency, the TNSCB, to another, the ULB. Chapter 3 on "Why the ownership argument does not work for Erode tenements" addresses the tenement puzzle on ownership and looks at tenement ownership in the particular context of Erode to examine why this dominant ownership-as-incentive idea, which finds favor in most empirical research on asset maintenance, does not work for the Erode tenements. Chapter 4 on "Breaking away from the vicious cycle of property tax default-poor septic tank maintenance" outlines the combination of variables particular to PN, which helped the tenement residents break away from the vicious cycle of property tax default-poor septic tank maintenance and achieve successful septic tank maintenance. The findings in these chapters are briefly summarized below.

1.5.1 The Messy Process of Transferring an Asset from one Agency to Another

A critical institutional piece of this research is that two state actors, the TNSCB and the ULB, are responsible for tenement construction and maintenance, respectively. Empirical research has shown that it is advantageous to separate construction and maintenance responsibilities for an asset (Wade, 1988), as in the case of the Erode tenements. In the chapter on "Erode context", I show how the transfer of an asset from the construction to the maintenance agency is not as simple as it sounds, and as illustrated by the Erode tenements, it can be a rather messy process.
1.5.2 Cracking the Ownership Puzzle

When we say the tenement resident owns the tenements, what exactly do we mean: do the residents own the tenement unit, the land on which the tenement is located, the services in the public domain or a combination of some or all of these assets? Clarifying the ownership package is critical to understanding how the particular package will be an incentive/disincentive towards asset maintenance. The ownership package for the Erode tenements is a limited equity one, where the tenement owners own the tenement units, but the land will continue to be in the possession of the TNSCB. The rationale for the TNSCB retaining ownership of the land is to insulate the tenements from the vicissitudes of the real estate market and ensure that tenements remain an affordable housing stock for the urban poor, even in a heated property market. But, as this research reveals, the limited equity policy is not a strong incentive for septic tank maintenance in the particular context of Erode:

1) Insecurity due to poor construction quality of tenements: Due to the poor quality construction and lack of structural maintenance, many of the Tamil Nadu tenements are in such a poor condition that there is a threat of collapse. Under these circumstances, residents value their tenement units less because there is no guarantee that the building will stand for an extended period of time.

2) Geography of informality and the inconsistent process of slum notification: According to the Tamil Nadu state policy, certain slums (based on criteria for notification\(^1\)) will be notified and will be eligible for slum upgradation. Other slums will be unnotified and cleared, and the residents of these unnotified slums will be re-located to tenements. Residents of notified, upgraded slums own the land on which their homes are located; tenement residents do not own the land on which their tenements are located. Due to difference in ownership of land, slum

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\(^1\) According to the Tamil Nadu slum policy, all slums located on environmentally hazardous land and on land which is slated for future development by the state will be unnotified and cleared. Slums not located on such lands are eligible for slum upgradation.
residents are very reluctant to be re-located to tenements and value their tenement units much less than the alternative of a piece of land in a notified slum.

1.5.3 Cracking the Property Tax Puzzle

Though PN residents, like the SN ones, default on their property taxes, how did they succeed in breaking away from the vicious cycle of property tax default-poor septic tank maintenance and succeed in the good maintenance of their septic tanks?

The good performance of PN in septic tank maintenance is because the PN residents (both owners as well as renters) were able to organize themselves more effectively as a group to take over responsibility of some of the septic tank maintenance tasks and they were more successful than the SN residents in establishing vertical linkages with the ULB for external support in septic tank maintenance. This research finds that a combination of three variables contributed to PN's better organization and more successful access to the ULB: 1) sharing of maintenance responsibilities between ULB and residents depending on nature of task 2) organization of residents and 3) external support from ULB. The contribution of these variables to better septic tank maintenance in PN is summarized below.

1.5.3.1 Sharing of maintenance responsibilities between ULB and residents depending on nature of task

One of the main reasons for the successful break-away of PN from the vicious property tax cycle is because residents were not entirely dependent on the ULB for septic tank maintenance. The PN residents and the ULB had achieved a system of separating septic tank maintenance tasks between themselves, depending on the nature of the task. For tasks of a low level of technical complexity, the PN residents would do them themselves. For tasks of a medium to high level of technical complexity, the residents would expect the ULB to take responsibility for these tasks in exchange for the property taxes paid. For the most frequently
occurring septic tank maintenance task (i.e. unclogging of septic tank chambers), the residents pay an "informal tax"\textsuperscript{11} to the municipal sweeper of the ULB to get the work done. PN had thus achieved a clearly delineated and well-enforced system of formal property taxes, informal taxes and do-it-ourselves contracts for different kinds of septic tank maintenance tasks. Because of this system, the residents and the ULB had clear expectations from each other on the kinds of services to be delivered by the ULB in exchange for the payments made by the residents.

1.5.3.2 Organization of residents

PN residents have succeeded in septic tank maintenance because they took on some of the maintenance tasks themselves and were capable of bargaining effectively with the ULB in demanding for service provision and maintenance. Within the same municipality, how did the residents of one tenement (PN) successfully organize themselves, when those of another (SN) failed to do so? This research finds that two variables contributed to the successful organization of PN residents: 1) design of the septic tank system: location matters, and 2) rules, referees and rewards: linking septic tank maintenance to use of public taps.

Design of the septic tank system: Location matters

One of the variables that contributed towards motivating the PN residents in organizing themselves for septic tank maintenance is a very straightforward one: location of the septic tank chambers. Since the septic tank chambers in PN are located at the doorsteps of tenement units, all tenement residents (owners as well as renters) are motivated to keep the system clean, so...

\textsuperscript{11} The PN residents collectively contribute Rs.30/household every time they need the services of the municipal sweeper to get into the septic tank chambers and manually unclog it. This practice of manual scavenging by the Dalit municipal sweepers is prohibited by the Indian Constitution's "The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993", but PN residents illegally pay the municipal sweepers to do the work. I borrow Prud'homme's term (Prud'homme, 1992) of "informal taxes" for this transaction between the PN residents and the municipal sweepers because it is a better description of the social contract between the residents and the municipal sweepers than the more pejorative term "bribe". I will describe this transaction in more detail on page 61 in chapter 4.
that it doesn’t become a visual sore. In contrast, SN’s septic tank chambers are tucked away in the back alleys behind the tenement blocks, and residents can ignore the messy, ill-kempt septic tank system.

**Rules, referees and rewards: Linking septic tank maintenance to use of public taps**

Besides design of the septic tank systems, the good performance of PN in septic tank maintenance is also partially due to the creation of rules by the residents for septic tank maintenance and the effectiveness of residents in monitoring and enforcing these rules. PN residents successfully linked a non-excludable service (septic tank maintenance) to an excludable one (use of public taps) and strictly enforced residents’ compliance with the rule of not being allowed to use the public taps unless they contributed to septic tank maintenance.

To understand the process through which PN residents succeeded in linking septic tank maintenance to use of public taps, we have to understand the history of water services in both these tenements. Unlike SN, whose residents did not have to demand for water services, but received individual household water connections at the time of move-in, PN residents were not provided with water services from the ULB at the time of move-in. PN had to demand for water services for nearly five years and this process helped organize them as a pressure group for demanding services from the ULB. Instead of demanding for individual household water connections, PN residents demanded for public taps. Having influenced the location of the public taps, residents linked septic tank maintenance to the use of public taps.

Since the linking of septic tank maintenance to the use of public taps is a very effective rewards-and-sanctions method for ensuring compliance to septic tank maintenance, the obvious question is why SN residents did not adopt a similar practice? The answer is geographical location: due to low pressure in the municipal water lines in this particular area, SN public taps did not receive reliable municipal water supply and residents found alternative sources of more continuous and reliable water supply. So the public tap failed to function as an effective rewards-and-sanctions tool for enforcing septic tank maintenance.
1.5.3.3 **External support from the ULB: Bureaucracy more effective than political patronage**

However well organized tenement residents may be, there are certain septic tank maintenance tasks which are too technically complex to be taken over by residents. These tasks can be successfully performed only if residents receive external support from the ULB. Though both SN and PN residents default on their property taxes, how were the PN residents more successful than SN in getting support from the ULB for septic tank maintenance? This research finds that the difference in the channels through which the tenement residents accessed the ULB is critical in explaining the different outcomes between the two tenements.

In SN, the TNSCB provided all services (including water supply, electricity, roads and sanitation) to the tenement residents on a silver platter at the time of move-in and maintained these services in the spirit of a social welfare organization for three years, without expecting any payment from the residents. When the TNSCB handed over tenement maintenance responsibilities to the ULB in 1990, SN residents used the channel of political patronage (by applying pressure on their Ward Councilor) to access the ULB for support with septic tank maintenance. As evident from the poor state of SN’s septic tank system, this channel for maintenance was not effective partly due to the ineffectiveness of SN’s Ward Councilors and partly because the ULB bureaucracy, and not the politically elected council, is responsible for maintenance of services.

In contrast, the PN residents accessed the ULB through the channel of the bureaucracy, which proved to be a more effective route for having their septic tank maintenance demands met. Why did the PN residents go through the bureaucratic channel instead of the political one? This was triggered by the ULB’s act of resistance to the decentralization policy. In the case of B.P.Agraharam, since septic tank maintenance is financed through a General Fund, whose primary source of revenue is property taxes, the ULB refrained from levying property taxes on tenements for as long as it could, so that tenement residents cannot hold them responsible for
not providing and maintaining services. Four years after PN residents moved into their tenements, the District Collector, who is the district level officer that the ULB bureaucracy is accountable to, applied pressure on the ULB bureaucracy to increase its property tax collection. Under pressure from a higher authority, the front-line officials of the ULB bureaucracy (namely, the sanitary supervisor and bill collector) approached the PN residents for property taxes. More research has to be done on the two-year negotiation process between the PN residents and ULB, but when the ULB started collecting property taxes in 2004, the PN had established a clear system of formal and informal taxes to be paid to the ULB in exchange for services rendered by the ULB. For instance, when the sanitary supervisor or bill collector come to collect property taxes, PN residents refuse to pay taxes only if the ULB has not responded to certain maintenance tasks, like clogged and damaged underground drainage pipes. PN residents would never refuse to pay property taxes because their septic tank chambers are clogged, because for this particular task, they pay an "informal tax" to the municipal sweeper every time he gets the work done. Thus, PN residents’ relationship with the ULB bureaucracy is similar to a commercial transaction because the residents have a fixed and clearly defined system of formal and informal taxes in exchange for specific septic tank maintenance tasks done by the ULB. This is very different from the patron-client relationship that SN residents have with the ULB, where SN residents don’t pay property taxes because their expectation that the ULB should take responsibility for all septic tank maintenance tasks is not met.
1.6 Research Methodology

1.6.1 Case Studies

The TNSCB has constructed 5 tenements in Erode district since 1971.

Table 1.1: General Characteristics of Tenements in Erode District

<table>
<thead>
<tr>
<th>Name of Tenement</th>
<th>Year of Construction</th>
<th>Name of Urban Local Body in which Tenement is Located</th>
<th>Number of tenement units</th>
<th>Are the tenements' septic tanks well-maintained?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perumpallam Odai</td>
<td>1986-87</td>
<td>Erode Municipality</td>
<td>468</td>
<td>No</td>
</tr>
<tr>
<td>Sathya Nagar (SN)</td>
<td>1987-88</td>
<td>B.P.Agraharam</td>
<td>648</td>
<td>No</td>
</tr>
<tr>
<td>Narayanavalasu</td>
<td>1991-95</td>
<td>Veerapachatram</td>
<td>256</td>
<td>Yes</td>
</tr>
<tr>
<td>Bhavani Road Phase II</td>
<td>1998-00</td>
<td>Periasemur</td>
<td>312</td>
<td>Yes</td>
</tr>
<tr>
<td>Poompuhar Nagar (PN)</td>
<td>1997-98</td>
<td>B.P.Agraharam</td>
<td>180</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Of the five tenements in Erode district\(^\text{12}\), I decided to select Sathya Nagar (SN) and Poompuhar Nagar (PN) as my case studies, so as to keep constant the urban local body in which the tenements are located (i.e. B.P.Agraharam). SN has the reputation as being the "most notorious and worst maintained" tenement in the district and it provides a useful foil to PN, which is the most well maintained tenement in the district.

1.6.2 Institutional Actors in Septic Tank Maintenance

The institutional actors involved in septic tank maintenance are the Tamil Nadu Slum Clearance Board (TNSCB), the urban local body (ULB) of B.P.Agraharam and the tenement residents. Before the lease-to-purchase scheme was introduced in 1990, the TNSCB used to construct and maintain the tenements. After 1990, the changed TNSCB policy mandated a separation in the palette of maintenance responsibilities between the TNSCB, the ULB of B.P.Agraharam and the tenement residents. Below is a table listing the different services within

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\(^{12}\) For an explanation on the levels of government in India (state, district, municipality, etc.), refer to chapter 2 on "Erode Context".
tenements, with the institutional actors responsible for the provision and maintenance of each of these services.

Table 1.2: Palette of tenement service provision and maintenance responsibilities between the institutional actors, TNSCB, the ULB of B.P.Agraharam and tenement residents

<table>
<thead>
<tr>
<th>Tenement service</th>
<th>Institutional actor responsible for construction/provision of service</th>
<th>Institutional actor responsible for maintenance of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenement building</td>
<td>TNSCB</td>
<td>All non-structural tasks (like white washing): Residents</td>
</tr>
<tr>
<td>Water supply</td>
<td>ULB</td>
<td>ULB</td>
</tr>
<tr>
<td>Septic tanks</td>
<td>TNSCB</td>
<td>ULB</td>
</tr>
<tr>
<td>Street lights</td>
<td>ULB</td>
<td>ULB</td>
</tr>
<tr>
<td>Roads</td>
<td>ULB</td>
<td>ULB</td>
</tr>
</tbody>
</table>

1.6.3 Dependant variable: Septic tank maintenance

The dependent variable in my research is septic tank maintenance and the research focus is to understand the variables that explain the variation in septic tank maintenance between two tenements located within the same municipality.

From the table above, it is evident that all the services (water supply, street lights and roads) with the exception of septic tanks are provided and maintained by the ULB. The only exception in this palette of service provision and maintenance is septic tanks: septic tanks are constructed by the TNSCB, but have to be maintained, like all other services in the public domain, by the ULB. The ULB feels that the TNSCB should continue to maintain septic tanks since they were constructed by the TNSCB. The sanitation supervisor of the ULB said that his workers could not repair/maintain the septic tank system since they didn't even know the location of the underground sanitation pipes. The TNSCB, on the other hand, feels that septic tank maintenance (like all other services like water supply, street lights and roads) should lie
within the jurisdiction of the ULB. Due to this passing of the buck between the TNSCB and the ULB, septic tank maintenance is one of the most neglected aspects in the tenements.

1.6.4 Indicators of septic tank maintenance

Both SN and PN have the same septic tank system\textsuperscript{13}, which works as follows:

Sewage from individual toilets is conveyed through the drainage system to septic tank inspection chambers. These chambers are located one per block in both SN and PN. From these inspection chambers, the sewage flows to the main septic tanks. The sludge from the septic tanks has to be removed around once in ten years.

\textsuperscript{13} At the time of my field research, both tenements had the same septic tank system. However, during my field research in summer 2007, the TNSCB had started working on a new septic tank system for SN, the Decentralized Wastewater Treatment System (DEWATS). DEWATS is similar to septic tanks, except that the treated effluent will be clean enough to be discharged into water bodies (in the case of SN, into the canal running alongside the tenement). The TNSCB had received Rs.1.85 million from the state government as a grant to construct the DEWATS system in SN. SN was selected as the pilot project for this new sanitation experiment because it was had the reputation in the district as the "most notorious and poorly maintained" tenement. The TNSCB did not have any money for the maintenance of these systems. In order to create awareness on personal hygiene and maintenance of the DEWATS system, the TNSCB hired the Chennai branch of EXNORA, an international NGO, and two representatives from EXNORA would come to SN every Sunday evening to conduct sanitation workshops. The EXNORA representatives complained to me about the poor attendance by the SN residents to these workshops; from a tenement of 648 units, there were only 5 regular women who would show up for these workshops. Since the DEWATS system and EXNORA practice was only starting to be piloted in SN, my research will focus on the existing septic tank system of SN, which is the same as that of PN.
Figure 1.3: Diagram of septic tank layout in the poor performer, SN
Figure 1.4: Diagram of septic tank layout in the good performer, PN

- Tenement unit
- Entrance to tenement unit
- Location of toilet in tenement unit
- Drainage lines on building
  - Below grade drainage lines to septic tank chamber
  - Below grade drainage lines to main septic tank
  - Septic tank chamber
  - Main septic tank
On talking to the tenement residents, I found that the most frequently cited maintenance problem with the septic tank is the clogging of septic tank chambers. Tenement residents indiscriminately throw kitchen, sanitary and other inorganic waste into their toilets, with the result that the outlet pipes of the inspection chambers get clogged and prevent the flow of sewage into the septic tanks. Since there is no outlet for the sewage from the inspection chambers, it sometimes overflows out into the open; this is particularly common during the monsoon season. Other common problems were leakage of the drainage pipes on the building, clogging of underground septic tank, damage/breakage of underground septic tanks and also clogging of the main septic tank. So I decided to use the condition of these five common repairs, i.e. leaking drainage pipes on buildings, clogged underground drainage pipes, damaged underground drainage pipes, clogged septic tank chambers and clogged main septic tank, as indicators for septic tank maintenance.

Table 1.3: Septic Tank Characteristics of Case Study Tenements, PN and SN

<table>
<thead>
<tr>
<th>Septic tank characteristics</th>
<th>Good performer: Poompuhar Nagar (PN)</th>
<th>Poor performer: Sathya Nagar (SN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of tenement units</td>
<td>180</td>
<td>648</td>
</tr>
<tr>
<td>Number of septic tanks</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Number of units tenement units sharing a septic tank</td>
<td>180</td>
<td>216</td>
</tr>
<tr>
<td>Number of tenement blocks</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>Number of units in each block</td>
<td>30</td>
<td>24-26</td>
</tr>
<tr>
<td>Number of septic tank chambers</td>
<td>6 (1 per block)</td>
<td>26 (1 per block)</td>
</tr>
</tbody>
</table>
Table 1.4: Indicators for septic tank maintenance and the performance of SN and PN on the indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>SN Performance</th>
<th>PN Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaking drainage pipes on buildings</td>
<td>Remains unattended</td>
<td>Residents do the repair work themselves</td>
</tr>
<tr>
<td>Clogged underground drainage pipes</td>
<td>Remains unattended</td>
<td>Residents apply pressure on the sanitary supervisor, who asks his municipal sweepers to do the repair work.</td>
</tr>
<tr>
<td>Damaged underground drainage pipes</td>
<td>Remains unattended</td>
<td>Residents apply pressure on the Executive Officer (EO) through the sanitary supervisor. On approval from the EO, the sanitary supervisor asks his municipal sweepers to do the repair work.</td>
</tr>
<tr>
<td>Clogged septic tank chambers</td>
<td>Remains unattended</td>
<td>Residents &quot;informally&quot; pay the municipal sweeper to do the work.</td>
</tr>
<tr>
<td>Clogged septic tanks</td>
<td>Remains unattended</td>
<td>Residents apply pressure on the Executive Officer through the sanitary supervisor, but the septic tank has been clogged for the past year.</td>
</tr>
</tbody>
</table>

Note: The municipal sweeper, sanitary supervisor and the Executive Officer are members of the bureaucracy in the ULB, in increasing order of hierarchy: the municipal sweeper reports to the sanitary supervisor, who is accountable to the Executive Officer. The institutional actors in tenement maintenance are outlined in detail in Chapter 2.

Thus, PN performs better than SN on four of the five indicators of septic tank maintenance.

1.6.5 Fieldwork

This research is based on three months of field work, one week in February 2007, five weeks in summer 2007 and six weeks in December-January 2008.

During my summer 2007 field research, I visited all five tenements in Erode district. Most of my time in summer was spent in SN and PN, conversing and interacting with the tenement residents to understand the challenges they faced with septic tank maintenance and how they
did/did not succeed in resolving these maintenance problems. All my interviews and conversations with the tenement residents were conducted within the tenements.

My December-January field research was also primarily spent within the tenements, but I got a different perspective on the septic tank maintenance challenges from the ULB. Whereas in summer, I spent time talking directly to the tenement residents, in my December-January trip, I spent 3 weeks shadowing the bill collector and sanitary supervisor as they made their rounds of the tenements to collect property taxes. Accompanying these front-line bureaucrats every morning three days a week was helpful in observing the interactions between the residents and the ULB and understanding the challenges faced by the ULB in septic tank maintenance.

In all, I interviewed 52 people, including tenement residents, B.P.Agraharam's bureaucracy (municipal sweepers, sanitary supervisor, bill collector and Executive Officer) and elected council (Ward Councilors of SN and PN, and the Municipal Chairman of B.P.Agraharam), four TNSCB officials in B.P.Agraharam who implement the tenement policies, two TNSCB officials in Chennai who make the tenement policies, District Collector of Erode and two local journalists who have been tracking Erode’s tenement maintenance over the past twenty years.
Chapter 2: Erode Context

This research is framed within the context of India's 1992 decentralization policy. The poor performer in septic tank maintenance, Sathya Nagar (SN), was constructed in 1988, before this landmark change in the country's political landscape; the good performer, Poompuhar Nagar (PN) was constructed in 1998, after the decentralization change. This chapter starts with a summary of India's decentralization policy and the administrative structure of ULBs within this policy. I conclude the chapter with the institutional context for tenement maintenance by outlining the challenges in transferring the tenement asset from one institutional actor (TNSCB) to another (ULB).

2.1 Decentralization in India

2.1.1 74th Constitution Amendment Acts, India

In 1992, decentralization of decision-making to the urban local bodies (ULBs) in India was enshrined in the Indian Constitution through the 74th Amendment Act. Under this amendment, decision-making authority will be devolved from the State Government to the ULB, so that ULBs "perform effectively as vibrant democratic units of self-government". Of particular relevance to this research, the ULB's responsibilities will include "water supply for domestic, industrial and commercial purposes, sanitation conservancy and public amenities including street lighting".

2.1.2 Administrative Structure of Urban Local Bodies in India

Recognizing the difference in the levels of urbanization amongst urban local bodies (ULBs) in India, the framers of the Constitutional Amendment divided ULBs into three types, depending on their population size: Municipal Corporations, Municipal Councils and Town

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1 Source: http://indiacode.nic.in/coiweb/amend/amend74.htm
Panchayats. The population of a Municipal Corporation exceeds 1 million, that of a Municipal Council is between 500,000 to 1 million and Town Panchayats are areas in transition from rural to urban. Due to their advanced technical and financial resources, Municipal Corporations are directly accountable to the State Government. Municipal Councils and Town Panchayats, on the other hand, are accountable to the State Government via the District Collector.

The District is an important sub-national unit of administration. The state of Tamil Nadu is composed of 29 districts. The District Collector is in charge of the revenues of a particular district. Due to their smaller size, Municipal Councils and Town Panchayats are not directly accountable to the state; instead, they report to the District Collector.

Figure 2.1: Administrative Structure of Urban Local Bodies in India

2.1.3 Urban Local Body (ULB) of B.P. Agraharam

As per the 2001 Census of India, Erode district had 5 Municipal Councils, 59 Town Panchayats and 539 Revenue Villages\(^2\). One of these Municipal Councils is Erode (having the same name as the district). Erode Municipal Council is the largest ULB in the district and it is the district capital. It is an important transportation node for the district and is at the epicenter of the

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\(^2\) Source: http://www.erode.tn.nic.in/aboutdist.htm
region's textile, turmeric and leather exporting industries. B.P.Agraharam, with a population of 21458, is a Town Panchayat bordering Erode Municipal Council to the north\(^3\).

![Map of Erode district with ULBs of Erode and B.P.Agraharam](image)

Below is a comparison of the summary statistics of Erode Municipal Council, B.P.Agraharam Town Panchayat, Erode District and the state of Tamil Nadu.

Table 2.1: General characteristics of the ULBs of Erode and B.P.Agraharam and the state of Tamil Nadu

\(^3\) In January 2008, a resolution was passed by the State Government of Tamil Nadu to incorporate B.P.Agraharam, along with eight other surrounding Town and Village Panchayats, into Erode Municipality. This incorporation will take effect during the next state elections, in 2011, when all administrative functions will be taken over by the Erode Municipality office. Till 2011, the Panchayat Office of B.P.Agraharam will continue in its current capacity.
**2.1.4 Administrative Structure of B.P. Agraharam Town Panchayat**

With regards to service provision and maintenance within B.P. Agraharam, the ULB has two wings: the elected council comprising the Ward Councilors (WCs) and Municipal Chairman are in charge of new constructions (like installing public taps, building new water tank, etc.), whereas maintenance of services falls under the jurisdiction of the Executive Officer (EO).

Within the elected council, the WC is directly elected by residents of a particular Ward (a Ward is the smallest unit of local self-government in India). B.P. Agraharam has 18 wards; these 18 WCs elect the Municipal Chairman from amongst themselves. The Town Panchayat receives grants from the state government around once in 3 months; these are earmarked grants, which have to be spent on the construction of the particular service specified by the state government. The WCs and Municipal Chairman have to unanimously agree on the distribution of the grant amongst the Wards.

The EO, on the other hand, is in charge of revenue collection and maintenance/repair works. He/she is appointed by the state government. All maintenance works in the tenements (as well as in all the Wards) are financed through a General Fund, whose main source of revenue is property taxes\(^4\). The maintenance money spent on a particular Ward does not depend on the tax collection in that Ward; instead all taxes go into a common pool, the General Fund. In the case of septic tanks, when a particular WC gives a written notice to the EO, demanding maintenance assistance, the EO either sanctions his/her sanitation supervisor to do

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\(^4\) Besides property taxes, other sources of revenue for the General Fund are professional taxes, market taxes and license fees.
the maintenance/repair work or if the task is technically complex, contracts out the work to a private contractor.

Figure 2.3: Administrative Structure of Town Panchayat

In summary, the fundamental difference between the elected council and the EO is: The EO is responsible for the maintenance of services (water supply, sanitation, street lights and roads) and he/she has an upward route of accountability to the District Collector. All new constructions are under the jurisdiction of the elected council, which has a downward route of accountability to the people.

When the TNSCB was maintaining the tenements before 1990, the story was simple because the TNSCB was the only institutional actor responsible for tenement construction and maintenance. After 1990, the TNSCB continued with tenement construction but handed over maintenance responsibility to the ULB and tenement residents. The next section outlines the challenges in transferring the tenement asset from one institutional actor to another and sets the institutional context for the research.
2.2 Transfer of the Tenement Asset

Lam, in his classical piece on the comparison of maintenance of canal irrigation systems in India and South Korea finds that one of the key variables for India’s poor performance in irrigation systems management and Korea’s good performance is their organizational structure. In India, the centralized, state level agency responsible for construction also maintains the irrigation systems. In contrast, in South Korea, construction of the irrigation systems is carried out by a national level, centralized agency, but maintenance is devolved to a provincial level agency. The advantage of separating construction and maintenance responsibilities is to leverage the competitive advantage of different levels of government for different kinds of tasks. The centralized agency in charge of infrastructure construction has the expertise and economies of scale for the construction of these capitally intensive projects. The more local level agencies are closer to the users and depend on user charges for their revenue base, and hence the users can directly hold them accountable for their services.

The tenement policy is similar to the South Korean organizational structure in Lam's research: the TNSCB, a state level agency, constructs the tenements, but maintenance is carried out by the ULB. Though there are merits to separating the construction and maintenance responsibilities for assets, this research draws attention to the challenges in transferring an asset from one agency to another. The transfer of an asset, as I will explain using the example of the Erode tenements, is not as clean and simple as it sounds, but can be rather messy process.

Firstly, in the case of the Erode tenements, the entire tenement asset is not transferred to the ULB. As explained in the table on page 26, the palette of tenement maintenance responsibilities is shared by the TNSCB, ULB and the residents. The responsibility for structural maintenance will remain with the TNSCB, street lights and roads within the tenement
boundaries will be handed over to the ULB, and septic tank and water supply services will be the shared responsibility of the ULB and the tenement residents. Since all components of the asset are not maintained by the same agency, there can be challenges of co-ordination in the maintenance functions. For instance, during my field research in June 2007, the parapet walls of SN were crumbling and the TNSCB was repairing and reconstructing SN’s roof structure. The construction company hired and supervised by the TNSCB was not careful with the construction debris, and the area around the tenement buildings was strewn with crumbled pieces of concrete that had fallen from the roof. To make matters worse, the falling debris had also cracked the septic tank drainage pipes running down the sides of the tenement buildings. Since the ULB was responsible for the maintenance of the septic tank system, the TNSCB did not replace the broken drainage pipes. Also, the debris had fallen into the storm-water drains and choked them and the ULB had to deploy their municipal sweepers to clear up the drains. When I spoke to the sanitary supervisor and the bill collector, they were very upset with the TNSCB for not replacing the damaged drainage pipes and clearing the fallen debris themselves, and for burdening the scarce resources of the ULB through their careless handling of the debris.

Secondly, when an asset is transferred from the construction agency to a separate maintenance agency, there has to be coordination between the agencies in transferring all the knowledge regarding the asset from the construction to the maintenance agency. During one of my visits to PN, an underground septic tank drainage pipe was clogged and sewage was not flowing from the septic tank chamber to the main septic tank. The sanitary supervisor from the ULB comes to the tenements at least twice a week, and during his visit when I was there, some residents from PN applied pressure on him to send his municipal sweepers to unclog the pipe. The sanitary supervisor told me that, when possible, he will deploy his men to unblock the pipes. But, his main complaint was that since the TNSCB had constructed the septic tank system, his municipal sweepers are not even aware of the layout of the drainage pipes. While trying to unclog an underground drainage pipe a few months back, the municipal sweepers had
accidentally hit a pipe and damaged it. The sanitary supervisor said replacing the damaged pipe will cost money and he is waiting for approval from the Executive Officer (EO) to replace the pipe. He said he had asked the TNSCB official in the Erode office for the septic tank drawings almost 6 years back, but the official said the drawings were in the TNSCB district headquarters in Coimbatore, and the sanitary supervisor had still not received the drawings.
Chapter 3: Why the Ownership Argument Does Not Work for Erode Tenements

The change in TNSCB tenement ownership policy was premised on the assumption that ownership of the tenement asset will be an incentive for tenement maintenance by the residents. This idea, that links asset maintenance to asset ownership, has a rich intellectual history in the private property rights field. In the first part of the chapter, I outline some key milestones in this private property rights history, drawing primarily from the ideas of John Locke, Henry George and Hernando deSoto. I then situate the Erode tenements within this private property rights literature, to understand the rationales for the TNSCB's adoption of the limited equity ownership policy for the tenements. I conclude by outlining the reasons why, in the context of Erode, the limited equity ownership policy is not a strong incentive for tenement residents to maintain their tenement assets.

3.1 Idea of Private Property Rights

3.1.1 Locke and deSoto: Advocates of Private Land Ownership

The private property rights advocates, like Locke and deSoto, connected asset ownership to asset maintenance, with the argument that ownership confers on people the security to reap the benefits of their maintenance/improvement efforts; hence owners will be more inclined to maintain and improve their assets.

When Locke and deSoto make a case for private property ownership, they are specifically referring to property in the form of land. Private ownership of land has always been a contentious debate. Land is a natural resource, so how can man privately own a resource that he has not created himself? Locke, writing in the 17th century, argued that when man works on a piece of land out of his own volition, he improves the land through his labor. When man mixes his own labor with the land, he transforms the land from its natural state to a more productive use, and so he is entitled to the ownership of the land and all improvements made on the land.
through the exertion of his labor. deSoto’s arguments for extending legal property titles to squatters in developing countries trace Locke’s line of reasoning. deSoto compares the colonists’ settling in the American frontier and staking their claim over the land without legal titles to present day squatters in developing countries. According to deSoto, the United States government granted these colonial settlers legal titles to their land because these “noble pioneers” (deSoto, 2000) had actually done the country a public service by settling on the land and improving it through cultivation. The celebrated Homestead Act of 1862 granted all settlers 160 acres of free land if they were willing to settle on the land for five years and develop it. The underlying assumption in both Locke and deSoto’s reasoning is that for man to make improvements on property, he has to be assured of the security to enjoy these improvements. In the example of the Homestead Act, the assumption is that unless the settlers were guaranteed the security of reaping the fruits of their labor, there would be no incentive for them to exert their labor in improving the land.

3.1.2 Henry George and the Idea of Limited Equity Ownership

Henry George, a political economist in the 19th century, also believed that people will be inclined to improve the productivity of their land if they are guaranteed the security of reaping the benefits of their improvement. He disagreed with Locke, however, in the idea of private ownership of land. George was one of the earliest pioneers of the idea of limited equity ownership, where individuals own their housing unit, but the land remains under community or state ownership. George’s arguments against the “the injustice of private property in land” can be summed up in the following three points:

Security of improvements, and not private land ownership, as incentive for improvements: The advocates of private land ownership argue that if land is not privately owned, there will be no incentive for the people working on the land to maximize its productivity. George debunks this argument as a myth, and uses several examples to illustrate that private
ownership of land is not necessary to ensure the most productive use of land. One of his compelling examples is the construction of the Rockefeller Center, the Empire State Building and the World Trade Center, three of the most illustrious real estate projects in New York's construction history, on leased ground. The developers of these projects did not require the private ownership of land as an incentive to undertake these expensive ventures; all they needed was the assurance of a fixed ground rent for a certain number of years. George's arguments against the private ownership of land are summed up in these words: "give a man security that he may reap, and he will sow; assure him of the possession of the house he wants to build, and he will build it. It is for the sake of reaping that men sow; it is for the sake of possessing houses that men build. The ownership of land has nothing to do with it”.

Increase in land value not only due to the individual's labor: Countering Locke's idea that when man mixes his labor with the land, he is entitled to the ownership of the land, George argues that increases in land value are not the sole products of the individual's labor. Instead, land values increase due to a number of external factors that have nothing to do with the labor invested on the land. For instance, since land is a limited natural resource, it increases in value when its demand increases, due to reasons like exploding population growth or improved access to services and infrastructure. Thus, the landowners with initially large endowments in land will idly and unfairly benefit from these land rents, which are not the fruits of their labor on the land.

Who benefits from the land subsidy: One of the main rationales for limited equity ownership is subsidy retention. Using the example of the Homestead Act of 1862, one could argue that many individuals have labored on a piece of land at different times in its history. When the colonial settlers were conferred land ownership for the improvements they made to the land on the American frontier, they were privileged over the earlier Native Americans who had also worked the land. These colonial settlers also pre-empted later individuals who would improve the land through their labor sometime in the future. The same argument can be applied
to the granting of property titles to squatters in developing countries. When a squatter is conferred legal property titles at a particular instant of time, he/she is pre-empting future generations from availing of the affordable housing option he/she had. With limited equity ownership, the land subsidy is locked into the housing for perpetuity.

### 3.1.3 Asset Ownership and Maintenance in Current Discourse

The current discourse on asset maintenance echoes the Lockean logic of being entitled to enjoy the fruits of your labor through ownership of the asset. There is consensus in the empirical research on home ownership and asset maintenance that ownership has a positive effect on maintenance.

One of the most common arguments for home-ownership is that there is an incentive for homeowners to maintain their assets, since investments in maintenance can be capitalized in their asset values (Hoff and Sen, 2000; Galster, 1987). Another common assumption is that homeowners will have lived together in the same community for an extended period of time, thus increasing their social interactions and their stock of social capital. Also, since owners will stay in the same community for a long time, they will be disinclined to antagonize their neighbors by not contributing towards maintenance for fear of social exclusion from the community (Hoff and Sen, 2000; Malpezzi and Tewari, 1991).

Particularly for low-income residents of informal settlements, there is a common assumption that renters will be transient members of the community. Since many of them are rural migrants from surrounding areas, they will send their earnings back to their families in the villages and not invest them in maintenance of services. Also, since they are only renters, they see no potential gain from extending cash and labor contributions towards the maintenance of services. Unlike owners, they will be less invested in the community and in building and sustaining lasting social relationships with other community members due to their short duration of stay (Wegin-Schuringa and Kodo, 1997).
3.2 Erode Tenements in the Context of the Literature

3.2.1 Introduction to TNSCB Tenement Policy

The Tamil Nadu Slum Clearance Board (TNSCB) was set up in 1971 under the Tamil Nadu Slum Areas (Improvement and Clearance) Act, under the auspices of the then Chief Minister of the state, Dr.Kalaignar. Before 1971, all housing activities in the state of Tamil Nadu were under the jurisdiction of the Tamil Nadu Housing Board, but a decision was made by the Chief Minister to set up a separate organization, the TNSCB, to "clear all the slums in the state and to provide self-contained hygienic tenements". Initially, the activities of the TNSCB were restricted to the capital city of Chennai and it was proposed to clear all slums in Chennai within 5 years and disband the organization by 1976. However, in 1976, realizing that slums were proliferating not only in Chennai but also in other cities in Tamil Nadu, it was decided to extend TNSCB activities to other urban local bodies in the state.

The TNSCB has two classifications for slums: notified and unnotified slums. Unnotified slums are those which are located on objectionable lands, i.e. lands which are environmentally sensitive and/or hazardous or which have been earmarked for other development uses by the state. The residents of unnotified slums are re-located to storied tenements, constructed by the TNSCB. The notified slums, on the other hand, are eligible for in-situ improvement. Tenement construction is a major component of the TNSCB activities. Since inception to March 2003, the total expenditure by the TNSCB on tenements has been Rs.2958, 455,000 ($74,897,595), which is almost 48% of the total TNSCB expenditure. The tenement component would have increased in recent years because after the 2005 tsunami in Tamil Nadu, the TNSCB has launched a massive tenement construction program, with World Bank aid, in Chennai and other cities in the state.

The tenements constructed by the TNSCB are highly subsidized for the residents. The Superintending Engineer of TNSCB proudly told me that the TNSCB is a "service-oriented, welfare organization and our employees have to be infused with a sense of pride that they are
providing housing for the poor". This ideology of the TNSCB that housing for the poor is an act of service that should not be muddied with economic, profit-making motivations is evident from the TNSCB motto, "God we shall see in the smile of the poor". Here is a rough estimate of the rate of subsidy of the tenements.

Table 3.1: Estimate of rate of subsidy of tenements
Source: Interview with Assistant Executive Officer, TNSCB

<table>
<thead>
<tr>
<th>Cost of land</th>
<th>Cost of dwelling unit</th>
<th>Total cost of tenement unit</th>
<th>Sources of finance</th>
<th>Amount contributed by source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs. 0¹</td>
<td>Rs. 135,000</td>
<td>Rs. 135,000</td>
<td>Grant from State Government of Tamil Nadu</td>
<td>Rs. 40,500 (30% of tenement cost)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Loan from Housing and Urban Development Corporation (HUDCO), to be recovered from monthly mortgage payments of residents</td>
<td>Rs. 94,500 (70% of tenement cost)</td>
</tr>
</tbody>
</table>

1. All TNSCB tenements are constructed on government-owned land, so residents are subsidized on the cost of land.
2. Cost of dwelling unit includes construction of 1 tenement unit, septic tanks and 12.5% supervision charge for TNSCB.

So, firstly, tenement residents receive a land subsidy: they do not pay at all for the cost of land. Secondly, they receive a 30% subsidy on the cost of the tenement unit itself.

Since the TNSCB's organizational philosophy, to quote a TNSCB Executive Engineer, is to "construct storied tenements at subsidized rates", the TNSCB introduced the limited equity policy in the spirit of its service-oriented, not-for-profit motto. It also introduced the lease-to-purchase policy to encourage the tenement residents to take over the responsibility of tenement maintenance, so that the TNSCB could focus on its main mission of constructing more tenements.

3.2.2 Limited Equity Ownership Package for TNSCB Tenements

According to the TNSCB, the 1990 change in tenement policy from renting to lease-to-purchase would give tenement owners security of tenure, so that they would be more willing to
make improvements to their tenements and maintain them. Below is an excerpt from the
government order for the policy change to lease-to-purchase (lease-to-purchase is referred to
as hire-purchase in India and the original beneficiaries are referred to as allottees):

"As per the G.O.Ms.No.897 of Housing and Urban Development Department dated
3.8.90 tenements constructed by Tamil Nadu Slum Clearance Board which are allotted on rental
basis have been ordered to be converted into hire purchase basis. For the maintenance of
these hire purchase tenements, welfare associations¹ have to be formed...The project
envisaged on provision of ownership rights to the allottees in order to make them responsible
citizens and thereby ensure better maintenance of the tenements...Series of individual, group
and block meetings were conducted to make the people realize the need for ownership of their
houses and take up the maintenance of their environment. The scheme envisaged for
establishment of tenemental Welfare Associations with the exclusive membership of original
allottees as members and office bearers. The Welfare Associations ensure peaceful co-
existence, protection of housing rights to allottees and realization of proper maintenance of their
assets"².

This assumption that ownership will influence the behavior of residents and "make them
responsible citizens" who will willingly maintain their tenements is in compliance with the
dominant idea in the maintenance literature that asset ownership is an incentive for asset
maintenance.

The TNSCB tenements' ownership policy is also deeply influenced by the ideas of Henry
George. In the TNSCB tenements, the tenement unit is owned by the residents, but the land on

¹ Though TNSCB has a Community Development Officer, whose is responsible for creating welfare
associations within the tenements, none of the tenements that I visited have formal welfare associations.
PN has an informal residents' association, which was formed as a response to adverse external factors,
like a threat to the security of the tenement residents. It is interesting that though PN's welfare association
was disbanded within a month of formation due to internal friction amongst the members, a sub-group of
the same residents were able to organize themselves effectively when faced with an adverse threat to the
security of the tenements. The history of organizing amongst the PN residents is outlined in more detail
on pages 62-75 in Chapter 4.

² Source: http://www.gotn-tnscb.org.in/cdevslium.htm
which the tenements are located continues to be owned by the TNSCB. This limited equity policy in tenements is evident from the conversation between the Community Development Officer (CDO) and the Assistant Executive Engineer (AEE) of TNSCB during my interview with them. Surprisingly, the CDO was not aware of the procedure through which original beneficiaries could sell their tenement units. He told me that the tenement land is free only for the original beneficiaries, and during a second party sale, the registrar's office will value the tenement land at market value. The AEE refuted him, saying that the motto of the TNSCB is to "construct storied tenements at subsidiary rates and so, the land will always be free for all tenement transactions".

The AEE's statement that "land will be free for all tenement transactions" is important because this will ensure that the tenements continue to remain an affordable housing stock, even in a heating real estate market. This is in keeping with the TNSCB philosophy that housing for the poor should not be motivated by reasons of personal gain, speculation or profit, but instead should remain "service-oriented".

3.3 Why Limited Equity Ownership Does Not Work for Erode Tenements

Erode tenements are located in areas of rapidly increasing property values, so it would be expected that residents will value their tenements as an appreciating asset. Both SN and PN tenements are located on the main arterial Bhavani Road. There is a proposal by the state to upgrade Bhavani Road to a six-lane highway. Thus, the values of properties adjacent to Bhavani Road (including the tenements) are expected to sharply increase soon. Also, a resolution was passed in January 2008 to incorporate B.P.Agharam (along with eight other surrounding Town Panchayats) into the Erode Municipal Corporation. This incorporation will take effect during the next state elections, in 2011. In anticipation of the incorporation, property guideline values in B.P.Agharam have registered a 35% increase over 5 years, from 2003 to
2008. For instance, for Class 2 residential areas along Bhavani Road, the property guideline value has increased from Rs.222/SF to Rs.300/SF.\(^3\)

Despite the heating real estate market, why doesn’t the limited equity ownership policy incentivize the tenement residents to value their tenement units as an asset with appreciating value and invest in its maintenance?

3.3.1 *Insecurity due to Poor Construction Quality of Tenements*

Despite the advantageous location of the tenements in a heating real estate market, all the SN and PN residents interviewed were very skeptical in viewing their tenement units as an asset because of the poor construction quality of the tenements. In both SN and PN, the tenement structure shows visible cracks at the ground level, near the foundation. One PN resident was convinced that the construction quality was so bad that her tenement block was leaning to one side; but try as I could, I couldn’t perceive any slant. When I told SN and PN residents that I was surprised they didn’t value their tenement units, especially since property guideline values will definitely register an increase after the 2011 incorporation, the responses I got were: “The quality of construction is questionable and my unit may fall in the next three years”; “Land has value, but the unit doesn’t. How will I benefit when I don’t have a guarantee that the unit will even stand”; “We won’t gain from the land appreciation because durability of the structure comes down with time and the tenements are sure to decrease in value”.

This concern over poor construction quality was precipitated by the October 2007 collapse of tenements in the nearby city of Coimbatore, which claimed the lives of 13 residents. All the tenement residents that I spoke to were aware of this calamitous incident and were constantly referring to it to prove their point of poor quality of tenement construction.

\(^3\) Source: http://www.tnreginet.net/
3.3.2 Geography of Informality and the Inconsistent Process of Slum Notification

The limited equity policy is inconsistently applied to different kinds of slums. According to the Tamil Nadu slum policy, all slums located on environmentally hazardous land and on land which is slated for future development by the state will be unnotified and cleared. Slums not located on such lands notified and are eligible for slum upgradation. On upgradation, the residents will own their home as well as the land on which their home is located. The limited equity policy has a strong rationale in subsidy retention, but in the case of notified slums, the land subsidy will be captured by the current residents and will not be passed on to the next generation of the urban poor. In the case of unnotified slums, which are located on environmentally hazardous land or on land slated for future development by the government, the slums are cleared and residents are re-located to tenements. There is a gross inconsistency in the TNSCB’s slum policy because, depending on the location of their slums, residents can either benefit from land ownership through slum upgradation or be moved to tenements without land ownership. Thus, though the initial condition of all the slum residents is the same, some of
them (those in notified slums) benefit from a public land subsidy just because they squatted in the "right" place. The slum residents understand this difference; the TNSCB AEE said that "people will not prefer the tenements to the slums, they will move to the tenements only on compulsion".

Besides the inconsistent application of the limited equity policy on different kinds of slums, the unnotified slum residents also get a raw deal because of the random process of slum notification. To illustrate the random process of notification, I will use data from a previous research on notification of slums in Erode municipality. Below is a map of notified and unnotified slums in Erode municipality.

Figure 3.2: Map and general characteristics of notified and unnotified slums in Erode municipality

<table>
<thead>
<tr>
<th>Total population of slums in Erode</th>
<th>26,806</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of slums in Erode municipality</td>
<td>52</td>
</tr>
<tr>
<td>Number of notified slums</td>
<td>27</td>
</tr>
<tr>
<td>Population living in notified slums</td>
<td>11,518</td>
</tr>
<tr>
<td>Percentage of slum population living in notified slums</td>
<td>43%</td>
</tr>
<tr>
<td>Number of unnotified slums</td>
<td>25</td>
</tr>
<tr>
<td>Population living in unnotified slums</td>
<td>15,288</td>
</tr>
<tr>
<td>Percentage of slum population living in unnotified slums</td>
<td>57%</td>
</tr>
</tbody>
</table>
As evident from the images above, the notification process of slums seems random because certain slums located within the flood plains of the canal are unnotified while adjacent slums, which are also located within the canal flood plain, are unnotified. So, almost 57% of Erode municipality’s slum population living in unnotified slums will not benefit from public subsidy because of the random process of notification and the inconsistent application of the limited equity policy on slums, but the remaining 43% will.
Chapter 4: Breaking Away from the Vicious Cycle of Property Tax Default-Poor Septic Tank Maintenance

This chapter outlines the research findings on the combination of variables that make PN more successful in the maintenance of its septic tanks than SN. I start the chapter by outlining the fragile relationship between property tax payment by tenement residents and maintenance of services (including septic tanks) by the ULB. This relationship can easily spiral into a vicious cycle of property tax default-poor septic tank maintenance, which is the case of SN. I then examine the combination of variables that helped the PN residents to break away from this vicious cycle and achieve good maintenance of their septic tanks. These variables are: 1) sharing of maintenance responsibilities between ULB and residents depending on nature of task, 2) organization of tenement residents, due to the design of septic tank system and the connection to water provision, and 3) external support from the ULB, due to difference in the channels through which PN residents accessed the ULB (through the bureaucracy) compared to SN (through the political representatives).

4.1 Property Tax and Septic Tank Maintenance

4.1.1 Vicious cycle of property tax default-poor septic tank maintenance

Figure 4.1: Vicious cycle

[Diagram of the vicious cycle showing the relationship between residents defaulting on property taxes, ULB slack in maintenance due to revenue shortage, less money for ULB to spend on maintenance of services, residents unhappy with poor maintenance of services, and the cycle repeating]
The maintenance of tenement services, including septic tanks, by the ULB is an unfunded mandate. Though the TNSCB hands over responsibilities for maintenance of tenement services to the ULB, the ULB does not receive any financial assistance from either the TNSCB or the state government for its maintenance activities. The ULB finances the maintenance of tenement services from its General Fund; one of the main sources of revenue to the General Fund is property taxes. The relationship between property tax payment by the residents and maintenance of services by the ULB is a fragile one. In SN, some tenement residents initially started defaulting on their property tax payment for two reasons: 1) the residents felt the property tax rates were too high and unaffordable to them\(^1\) and 2) the ULB was not doing a good job of maintaining their services and the residents saw no benefit from paying their property taxes. The property tax bill collector of B.P.Agraharam said that when a few residents stopped paying, others also joined the bandwagon of default, saying "my neighbor doesn't pay, so why should I pay?" In response to the residents defaulting on their property tax payments, the ULB became slack in responding to the maintenance demands of tenement residents, with the justification that since residents are not paying their taxes, the ULB doesn't have the money to maintain their services. The unresponsiveness of the ULB in service maintenance then became another reason for property tax defaults, with the residents refusing to pay property taxes because the ULB is not maintaining their services.

\(^1\) The property tax rate for SN residents is Rs.150/annum per household, and for PN, Rs.122/annum per household. I do not have data for the annual income of the tenement residents, but residents told me that the poorest among them work as day laborers, which will fetch them an annual income of Rs.18,000. So, for the poorest tenement residents, the SN property tax is 0.8% of their income, and for PN residents, it is 0.7% of their income. So, the protest by the residents that their property taxes are too high and unaffordable does not seem legitimate. Though SN and PN are located in areas with comparable market values, the property tax paid by PN residents is lower than that of SN, and as I will explain later on pages 62-75, this is because of the better organization and superior bargaining power of the PN residents.
4.1.2 Disincentives for ULB to levy property taxes

In the Erode tenements, there is apathy by the ULBs to collect property taxes from the tenements. Property tax will be paid by residents in anticipation of better service delivery. In the case of tenements, the costs associated with maintenance of tenement services far exceed the revenue collected through property taxes. For instance, if we assume that all the tenement residents of PN pay their property taxes for a year, the property tax collection for PN will be Rs. 21,600. Based on interviews with the PN tenement residents on the frequency of repairs with the septic tank system, below is a table that outlines average expenditure on repairs/maintenance tasks for only drainage pipes within the septic tank system.

Table 4.1: Approximate annual cost of maintaining septic tank drainage pipes in PN

<table>
<thead>
<tr>
<th>Repair/maintenance task</th>
<th>Frequency per year</th>
<th>Remedy</th>
<th>Cost of remedy per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaking drainage pipes on buildings</td>
<td>~3</td>
<td>Caulking of pipe</td>
<td>Rs. 300</td>
</tr>
<tr>
<td>Broken/damaged drainage pipe</td>
<td>~2</td>
<td>Replace damaged pipe: buy and lay new 4&quot; diameter sewage pipe of 20' segment¹.</td>
<td>Rs. 6,000</td>
</tr>
</tbody>
</table>

The material cost of a 20' segment of 4" diameter PVC sewage pipe with PVC collars is Rs. 3000. Besides the cost of the pipe, one has to take into account the cost of labor for laying these pipes. The labor cost has not been included in these calculations.

Besides drainage pipes, the ULB has to also maintain the other parts of the septic tank system (like cleaning the septic tank chambers, de-sludging of the septic tank) and maintain other services like the water supply system and roads. If the material costs of drainage pipes alone require Rs. 6,300 in maintenance, which is around 30% of the total property taxes collected from PN, it is no surprise that property taxes only marginally cover the ULB's service maintenance expenditure.
4.1.3 Resistance by ULB to maintain tenement services

When responsibilities for service provision and maintenance are devolved to the ULB from the state government, small ULBs like B.P.Agraharam can resist this increased responsibility and work-load through not levying property taxes. It is a common practice for the ULBs within Erode district to stall the collection of property taxes from tenements for as long as possible, so that demands for service maintenance from tenements can be ignored under the justification that the tenements are not contributing to the revenues of the ULB. For instance, the ULBs of B.P.Agraharam and Veerapachatram started levying property taxes on their tenements only six years after residents moved into the tenements and the ULB of Perisemur has still not started levying property taxes since residents moved into the tenements in 2000. Property tax collection from tenements is resorted to when there is pressure from the District Collector on the Executive Officer (EO) to increase the revenue base of the ULB. Since the EO is accountable to the District Collector, and not to tenement residents, he/she feels more pressure to report higher revenue collection to the District Collector. Maintenance of tenement services will deplete the ULB’s revenue base, and so, according to the sanitary supervisor of B.P.Agraharam, the EO has turned down maintenance requests (like replacing damaged underground septic tank pipes) many times and the sanitary supervisor has had to consistently apply pressure on him to get him to approve the maintenance/repair work.
4.2 How PN Broke Away from the Vicious Cycle

Below is a comparison between SN and PN residents' default on their property taxes.

Table 4.2: Comparison of the rate of default in property taxes between SN and PN
Source: B.P.Agraharam Property Tax Records from the Executive Officer (EO)

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Percentage of households defaulting in year…</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SN</td>
<td>61%</td>
</tr>
<tr>
<td>PN</td>
<td>11%</td>
</tr>
</tbody>
</table>

Though property tax payment for PN is much higher than SN, PN does not have a 100% collection rate. However, it is a significant difference that 61% of SN residents started defaulting in the first year itself, compared to only 11% of PN residents. Also, in PN, there is no dramatic drop in property tax collection, but collection does gradually taper down with the years. In comparison, 85% of SN residents stop paying their property taxes after the second year\(^2\). 11% of PN residents have no arrears in property tax payment, compared to only 1% of SN residents\(^3\).

\(^2\) When I asked the bill collector of B.P.Agraharam for a possible explanation for the sudden drop in SN's property tax collection after the second year, he attributed this to the no-objection certificate (NOC) required by the residents from the TNSCB and ULB for electricity. Electricity in the tenements is provided directly by the Tamil Nadu Electricity Board. Most of the tenement units that I visited in Erode have a fridge, television (with cable connection) and grinder. The average monthly electricity bill for a family of four is around Rs.150/month, which residents duly pay because if they forfeit payment, their electricity will be cut off. Compare the electricity bill to property taxes for SN, which are only Rs.150/annum, but residents default on property taxes and not on their electricity bills. If electricity is cut off, food will spoil and also importantly, people won’t have access to television. Erode is at the heart of cinema mania belt in India and residents are eager to connect to cable television. To get electricity connection, the residents have to get a no-objection certificate (NOC) from the TNSCB and ULB saying that all their mortgages and property taxes have been paid to date. The bill collector said most residents get electricity connection within the first 2 years, which is one of the reasons why mortgage and property tax collection is high during the initial years and drop dramatically after.

\(^3\) It is interesting that only 1% of SN's residents have no property tax arrears. What is the motivation for 1% of the residents to be up-to-date in their property taxes, when everyone around them is defaulting? One explanation is that candidates will be eligible to compete for the Ward Councilor position only if they are up-to-date in their property tax and tenement mortgage payments. So, all the tenement residents who contested for this political position are up-to-date in their payments. But, in SN, only around 20 residents...
Though PN residents, similar to the SN ones, are also defaulting on their property taxes, there are two significant differences in the property tax defaults between the two tenements:

*Reason for residents' defaulting on property taxes:* SN residents are deeply entrenched in the vicious cycle of property tax default-poor tenement maintenance. All the SN residents interviewed said they were defaulting on property taxes because they were dissatisfied with the ULB’s performance in providing and maintaining their services. In contrast, when I asked the PN residents why they were defaulting on their property taxes, none of the residents said that they were disappointed with the ULB’s maintenance performance. All of them said they were trying to annul their arrears, but since the ULB had started levying property taxes six years after they moved in, it was difficult for them to pay the accumulated taxes at once and hence the default.

*Expectations from ULB in exchange for payment of property taxes:* A critical difference between SN and PN residents is that the former expect the ULB to be responsible for all the septic tank maintenance tasks; PN residents, on the other hand, only expect certain specific septic tank maintenance tasks to be done by the ULB. For other septic tank maintenance tasks, they either do them themselves or they pay informal taxes to the municipal sweepers for carrying out the work. This clear delineation of different kinds of payments for different kinds of septic tank maintenance tasks is one of the main reasons for the successful break-away of the PN residents from the vicious property tax-maintenance cycle.

I will now outline the three variables that explain the better performance of PN in septic tank maintenance than SN.

have contested for the post of Ward Councilor since 1988, so there’s still another 44 residents who are up-to-date on their property tax payments without having contested in the Ward Councilor elections. This could be an area for future research, to understand the motivation why a small percentage of the tenement residents continue to pay their taxes regularly, despite the high rate of default around them.
4.3 *Sharing of maintenance responsibilities between ULB and residents depending on nature of task*

One of the main reasons for the successful break-away of the PN residents from the vicious cycle of property tax default-poor septic tank maintenance is that the residents are not completely dependent on the ULB for their septic tank maintenance. Instead, they have a system of formal and informal taxes for different septic tank maintenance tasks, depending on the nature of the task.
Table 4.3: Table showing nature of maintenance task and channel through which maintenance is done

<table>
<thead>
<tr>
<th>Maintenance task</th>
<th>How is maintenance task financed?</th>
<th>Channel for demanding maintenance/repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaking drainage pipes on buildings</td>
<td>How much, per time?</td>
<td>Financed by whom?</td>
</tr>
<tr>
<td>Frequency</td>
<td>Level of technical complexity</td>
<td>How is maintenance task financed?</td>
</tr>
<tr>
<td>Low: requires buying of cement seal and caulking the leak</td>
<td>Rs.100</td>
<td>Residents</td>
</tr>
<tr>
<td>-3 times/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents do it themselves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clogged underground drainage pipes</td>
<td>Medium: requires pipes to be dug up and unclogged</td>
<td>By the municipal sweeper, under the order of the sanitary supervisor</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-8 times/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents apply pressure on the EO through sanitary supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damaged underground drainage pipes</td>
<td>Medium: requires pipes to be dug up and replaced</td>
<td>By ULB, through property taxes</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 times/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs.3000</td>
<td>By residents, through an &quot;informal tax&quot; to the municipal sweepers</td>
<td></td>
</tr>
<tr>
<td>Residents pay the municipal sweepers each time they want the septic tank chamber unclogged.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clogged septic tank chambers</td>
<td>Low, but it is a dirty task which will only be done illegally by the Dalit municipal sweepers</td>
<td>By ULB, through property taxes</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>~12 times/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs.300</td>
<td>Residents apply pressure on EO through sanitary supervisor, but the septic tank has been clogged for the past year.</td>
<td></td>
</tr>
<tr>
<td>Residents apply pressure on the municipal sweeper to do the repair work.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clogged septic tank</td>
<td>High: cannot be done manually and requires de-sludging vacuum trucks</td>
<td>By ULB, through property taxes</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>~1 in 2 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs.22,000</td>
<td>Residents apply pressure on EO through sanitary supervisor, but the septic tank has been clogged for the past year.</td>
<td></td>
</tr>
<tr>
<td>Residents apply pressure on the municipal sweeper to do the repair work.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. All the municipal sweepers in B.P. Agraharam are Dalits (the lowest rung of the Indian caste system) and they manually scavenge and clean the septic tank chambers. Manual scavenging of this sort has been banned by the Indian Constitution under the "The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993", but the municipal sweepers are poor and do it for the money. The officials in the ULB, including the sanitary supervisor and the bill collector, are aware of this practice, but they turn a blind eye to it because it relieves them of the responsibility of this maintenance task. Whenever the septic tank chamber is clogged, the residents of that block contribute Rs.10/unit (each block has 30 units); one resident from the block goes to find the municipal sweeper, pays him Rs.300 upfront and then the municipal sweeper comes to the tenement to unclog the septic tank chamber.

2. B.P. Agraharam, being a Town Panchayat, does not own a sludge removing truck. So whenever sludge has to be removed, residents have to lodge a written complaint with the EO, who then asks Erode municipality, which owns a truck, to do the work for B.P. Agraharam. This takes time, at least 2-3 days and sometimes even up to two weeks. So, besides the technical complexity of the task, this is also a more difficult task to accomplish because the ULB of B.P. Agraharam has to depend on another municipality for a de-sludging truck.

As evident from the table above, the PN residents do not expect the ULB to take responsibility for all their septic tank maintenance functions in exchange for their property taxes paid. Depending on the nature of the task, residents have different responses to the
maintenance challenge: they do it themselves, they pressurize the sanitary supervisor to get it done through the ULB in exchange for the property taxes paid, or they pay an "informal tax" to the municipal sweeper to get it done.

For the transaction between the PN residents and the municipal sweepers, I borrow Prud'homme's term of "informal tax" because this is a better description of this transaction than the more pejorative term "bribe". Prud'homme defines informal taxation as "the nonformal means utilized to finance the provision of public goods and services". When we look at the way public services are provided in developing countries, never is it such a clean, straight-forward process as citizens paying taxes to the government and the government reciprocating by providing public services. Instead, the reality is a much more complex picture, where residents receive services through a web of informal taxes, which run the gamut from extortions to more voluntary contributions, gifts and donations. The transaction between the PN residents and the municipal sweepers fits this description well: since the cleaning of septic tank chambers is a dirty job and it is the most frequently occurring septic tank maintenance task, there is very little motivation for the municipal sweeper to do the work within his salary. Instead, when PN residents collectively, and informally, mobilize financial resources to incentivize the municipal sweeper to do the work, this becomes an informal tax.4

Thus, one of the main reasons for the success of PN residents in breaking away from the vicious property tax cycle is that the residents do not rely entirely on the ULB to maintain their septic tanks through property taxes. Instead, they have a system of formal, informal and do-it-ourselves contracts for different kinds of septic tank maintenance tasks.

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4 Since the dependant variable for good performance in this research is septic tank maintenance, the informal taxation to the municipal sweepers to clean the septic tanks is recognized as one of the reasons contributing to good maintenance of the septic tanks. However, the municipal sweepers are of the Arunthathiyar subsect of the Dalit caste (within India’s caste system, the Dalits are at the bottom of the caste hierarchy, and within the Dalits, the Arunthathiyar sub-sect is considered the most backward and is traditionally associated with the practice of manual scavenging). The "informal taxes" to the municipal sweepers by the PN residents and the knowing disregard by the ULB of these activities perpetrates an ignominious practice of manual scavenging by a particularly marginalized sub-group of the Indian caste system. Since it is outside the scope of this research, I will not go into the manual scavenging discourse.
4.4 **Organization of residents**

But each of these responses by the PN residents requires an organized group of residents, who have the ability to monitor and enforce these septic tank maintenance rules amongst themselves. Monitoring and enforcing the rules is very important to prevent free-ridership and to ensure all users contribute towards septic tank maintenance. It also takes an organized group of residents to successfully negotiate with the ULB and agree on ways to share septic tank maintenance responsibilities between the residents and the ULB. So, unlike the SN residents, how did the PN residents succeed in taking over some of the septic tank maintenance responsibilities themselves and paying formal and informal taxes to the ULB to take over the others? I outline below two variables that contributed to better organization amongst PN residents: 1) design of the septic tank system: location matters, and 2) rules, referees and rewards: linking septic tank maintenance to use of public taps.
One of the most common repairs to the tenement septic tank system is the clogging of the septic tank chambers. In PN, since the septic tank chambers are located at the center of the tenement block, the residents of the block make a concerted effort to get the chamber unclogged and clean the area, because the dirty pool of water is at their front door-step. One woman resident at PN did voice a concern that if the chambers overflowed, something had to be done immediately, otherwise "how will we enter our homes, how will our children play?" In SN, on the other hand, the septic tank inspection chambers are located not near the front doorstep of the tenements, but instead, in the alley between tenement blocks. Since the chambers are not in the direct vision or circulation path of the residents, they will be less inclined to get them cleaned than the PN residents.
Besides the visual and circulation sores caused by overflowing septic tank chambers, PN residents are also more proactive in keeping the chambers clean because of their proximity to their water supply. In one PN block (see image to the right above), the septic tank chamber was adjacent to the public tap. During the monsoon season, the wastewater from the septic tank chamber overflowed onto the ground. Due to the slough of dirty water surrounding the public tap, the residents could not get to the public tap to collect water, and they got the septic tank chamber cleaned within the day by paying the municipal sweeper. So, PN residents can access their water supply only if they keep their septic tank chambers clean and this is a strong incentive for septic tank maintenance.

Figure 4.3: Location of septic tank chambers in SN

In SN, as evident from the cross-section above, the septic tank chambers and open drainage channels are at a safe distance from the public taps. Thus, residents don’t have to
clean the septic tank chambers in order to access their water supply and have less of a motivation to keep the septic tank chambers clean.

Figure 4.4: Location of drainage pipes in PN (left) and SN (right)

Besides the location of the septic tank chambers, another important spatial factor is the location of drainage pipes on buildings. In SN, the drainage pipes are located in the back alleys and if they crack or are damaged, the sewage from the toilets falls onto the ground. But since tenement residents never use the back alleys, they can ignore the mess. However, in PN, the drainage pipes are located in the stairwell that residents use to access their units, so if the pipes are leaking or damaged, residents have to tend to it immediately, otherwise they’ll have dirty sewage falling on them from the broken pipes as they’re accessing their units.
4.4.2 Rules, referees and rewards: Linking septic tank maintenance to use of public taps

One of the main reasons for the success of PN residents in septic tank maintenance is that, unlike SN, PN residents cleverly linked the maintenance of a non-excludable service, like septic tanks, to an excludable one, like use of public taps. Thus, if the resident of a tenement block does not contribute towards septic tank maintenance, the residents of that block will not allow the non-contributing resident to use the public tap for water.

I borrow the phrase "rules, referees and rewards" from Wright's research on "improving the sustainability of urban sanitation in developing countries". Wright's recommendation for successful sanitation infrastructure maintenance is to create rules for maintenance and have referees who will monitor and enforce these rules through a rewards-and-sanctions system (Wright, 1997). In fact, Wright includes an example of the Water Development District Project in the Philippines, where sewer tariffs are included in the water bills, so that when users don't pay their sewer tariffs, the local water companies cut off water supply to these customers. Whereas this is an example of an external referee (the local water company) enforcing sewer tariff payment by using water supply as a rewards-and-sanctions tool, it is very similar to the PN case of linking septic tank maintenance to use of public taps. The importance of creating rules and enforcing them has been extensively documented in the literature on management of common pool resources. Empirical research done on the management of irrigation systems shows that when rules are made internally by the users, they can be more effectively enforced than when they are imposed on the users from the outside (Ostrom, 1990; Tang, 1992; Wade, 1994). In this context, the PN case is exemplary because the rules for septic tank maintenance are created and enforced by the residents themselves. But the common pool resource scholars

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5 The phrase "common pool resources" has been popularized by Ostrom through her work on the management of natural resources that are commonly shared and used by many individuals, like fisheries, groundwater basins and irrigation systems.
agree that monitoring, which is critical to the successful maintenance of commonly shared services, is not easy and the right mix of incentives have to be created for effective monitoring.

In the case of the tenement septic tanks, we know that PN’s strategy of linking a non-excludable service to an excludable one cannot be taken for granted because SN, also located in the same municipality, failed to do this. PN’s successful monitoring of septic tank maintenance raises some questions: how did PN residents succeed in linking septic tank maintenance to use of public taps? Since linking septic tank maintenance to use of public taps is a clever way of preventing free-ridership in septic tank maintenance, why didn’t the SN residents also adopt a similar strategy in the maintenance of their septic tanks?

The central actor in the rules, referees and rewards recommendation is the referees: in the case of PN, the tenement residents who enforce these rules of septic tank maintenance. Monitoring by the residents pre-supposes an organized group which can effectively enforce the rules of maintenance. So, in the case of PN, who exactly enforces the rules of septic tank maintenance? Besides enforcing septic tank maintenance, the capacity to organize amongst the PN residents helps them take over some of the septic tank maintenance responsibilities themselves, and also to bargain and negotiate more effectively with the ULB than the SN residents. This superior bargaining capacity of the PN residents is evident from the following example. Both PN and SN are located along Bhavani Road, the main arterial highway passing through B.P.Agraharam. The guideline value for all property along Bhavani Road is Rs.248/SF, so the property taxes for both SN and PN should be the same. But surprisingly, the property tax per tenement unit for PN is lower (Rs.122/annum) than for SN (Rs. 150/annum). When property taxes were first levied on SN residents in 1988, each tenement unit was charged Rs.323/annum. The residents revolted that this was a very high charge that was unaffordable to them. The current WC said that he and his predecessors had been negotiating with the ULB to reduce the property tax value and in 2005, the ULB dropped it to Rs.150/annum per tenement unit. The PN residents, on the other hand, started negotiating with the ULB on the property tax
value in 2002 and agreed on the rate of Rs.122/annum per tenement unit. A comparison of the difference in property tax rates for two tenements located in comparable locations within the same ULB is a good indicator of the organizing capability of the residents’ and their effectiveness in bargaining with the ULB.

So, how did PN residents succeed in organizing themselves? How did they succeed in enforcing septic tank maintenance? And why didn’t SN learn from their neighbors’ success story and adopt a similar enforcement strategy? To answer these questions, a brief history of the tenements’ water supply services is necessary.

4.4.2.1 Brief history of water supply services in the poor performer, SN

Figure 4.5: History of water supply services in SN

1. Individual household water connections: No image available because all individual household water connections in tenements have been removed.

2. Shared public taps

3. Continuous water from leaking water pipe

1. **Individual household water connection**

Before the lease-to-purchase scheme was introduced, all tenements had individual household water connections; this was the case in SN. Water from bore-wells was pumped up
to overhead water tanks; each SN block of 36 tenement units had 3 overhead water tanks, divided into compartments for each tenement unit, so that each unit had individual access to bore-well water.

The economy of B.P.Agraharam is dominated by leather exporting industries. The leather tanneries directly release the dyeing effluent into the canals and water bodies, with the result that the groundwater in B.P.Agraharam is extremely contaminated. Besides the contamination by dyeing chemicals, the groundwater in B.P.Agraharam is very brackish. Due to these reasons, SN residents could not use the water from the bore-wells for drinking purposes, but instead used this water only for bathing, washing clothes and other external purposes. For drinking purposes, they continued to depend on the public taps on the road that they had used earlier as slum dwellers. Another major concern with the water was that it constantly leaked from the overhead tanks onto ceilings and walls of the tenements units. Due to the contamination and high salt content of the water, it started to corrode the tenement structure.

In 1990, the TNSCB, which was earlier responsible for the maintenance of all services in the tenements, decided to hand over maintenance responsibilities to the tenement residents and the ULB. Only structural maintenance of tenement remained in the TNSCB portfolio. Along with the lease-to-purchase scheme, the TNSCB also decided to change the water supply policy from individual household water connections to ground-level shared connections. The TNSCB wanted ground-level water connections as this would eliminate the problem of corrosion of the tenement structure due to water leakage from overhead tanks. Accordingly, they changed their water policy to ground-level plastic tanks, which would be supplied by municipal water.

One would expect the tenement residents to revolt against a change in water policy that deprives them of individual household water connections. But in the case of B.P.Agraharam, the residents feared that their tenements would collapse due to corrosion from water leakage, and they welcomed the change to ground-level water supply.
2. Shared public taps

When the TNSCB stopped the individual household water connections, the Ward Councilor, who was a SN resident, got public taps installed for the residents, one public tap per 2 tenement blocks. The next Ward Councilor, who was elected into power in 1996, also provided an additional set of public taps, so that each tenement block had one public tap. SN residents never demanded for their public taps, they were provided the taps voluntarily by the WCs. Both the WCs who provided the taps proudly refer to the taps as their contributions to SN during their time as WCs.

3. Continuous water from a leaking water pipe

But, SN is located in an area with acute water shortage. Whereas PN residents received water in the public taps for 2 hours daily, SN residents sometimes had to go for an entire week with no water in the taps. So, though SN residents had 1 public tap per block, the water supply to the taps was unreliable. SN occupies two Wards, 8 and 9. Though Ward 8 received some water, Ward 9, due its location furthest away from the main trunk pipe, stopped receiving water completely from the ULB. Ward 9 residents started coming to the Ward 8 blocks to draw water from the public taps. The residents of Ward 8, due to the acute water shortage, would not allow "outsiders", i.e. non-residents of the block, from drawing water from the taps, with the result that Ward 9 residents were left without any reliable water supply.

A main water line, supplying water to the neighboring Town Panchayat of Periasemur, runs adjacent to the SN tenements. In late 2007, the air release vent in the main trunk pipe to Periasemur started leaking. With water continuously gushing out of the release vent, SN residents started using the water for their daily needs. Women would fill buckets of water from this damaged air release vent. The SN residents installed a tap at this point of leakage, so that they now get water 24x7 from this tap.
4.4.2.2 Brief history of water supply services in the good performer, PN

Figure 4.6: History of water supply services in PN

1. Shared ground-level plastic tanks

PN, unlike SN, never had overhead water tanks and individual household water connections. Like all tenements constructed after 1990, ground-level plastic tanks were provided by the TNSCB. Two banks of 4 maintenance-free polyethylene tanks, of capacity 2000 liters each, were provided in PN. One bank was located to the east of the tenements and the other to the west. The TNSCB expected the ULB to fill these tanks with municipal water supply. The plastic storage tanks shifted the onus of water supply from the TNSCB to the ULB. With individual household water connections, if the water leaked and corroded the tenement structure, the TNSCB was responsible for structural maintenance. Now, with the ground-level plastic tanks, all responsibility for supplying water and filling the tanks to capacity had to be assumed by the ULB.

However, the plastic tanks have been in disuse in all the tenements in B.P.Agraharam because the ULB maintains that the municipal water supply does not have sufficient pressure to fill the tanks. As a result, the tanks have been empty since their installation.
2. **Shared public taps**

With the empty plastic tanks, residents of PN had to rely on the public taps lining the road for their water needs. For four years after the tenements were constructed, till 2002, the residents did not pay any taxes to the ULB; in fact, they said they were not aware of the requirement to pay taxes. When I asked the bill collector why he had waited for 4 years before informing the residents about the requirement of paying property taxes, he blamed the delay on the TNSCB, saying that the TNSCB had been very slack in transferring the tenements to the ULB; when the ULB had finally received control over the tenements in 2002, they approached the residents for taxes. However, the Assistant Engineer of the TNSCB in B.P.Agraharam said that the TNSCB had been prompt in transferring the tenements over to the ULB, and the ULB had refrained from levying taxes because of the meager revenue contributions to the ULB’s coffer from the tenements. In 2002, the bill collector (the official in charge of tax collection) of B.P.Agraharam came to the tenements to inform the residents that they would have to start paying property taxes. Residents were up in arms with the news; they told the bill collector that they would pay property taxes only if they received water services from the ULB. According to the PN residents, on demanding services in exchange for paying property taxes, the bill collector backed off and did not come to the tenements for a year. The residents were aware that it was only a matter of time before the EO would receive pressure from the District Collector and the bill collector would be back to collect property taxes. So, after the bill collector’s visit, the residents started going to the ULB often to demand for water supply. Not only did the residents want water supply, they were also insistent that the ULB install 1 public tap per tenement block for water. The public taps were a better solution for the residents because one public tap per block was more accessible (less walking distance) to all the residents than the plastic tanks, which were located at opposite ends of the tenement. Also, with the public taps located at the entrance to the tenement block, it was easier for residents to monitor the taps to make sure that the taps are closed when not in use and water is not wasted. Also, the public tap became a
convenient means by which block residents could collectively enforce certain kinds of behavior. For instance, if a block resident did not contribute towards the repair/maintenance of the septic tank chambers, the non-contributing resident would not be allowed to use the public tap. In 2003, public taps were installed in PN (1 tap per block) and from 2004, the ULB started collecting taxes from the tenement residents.

Thus, in PN, by influencing the location of the public taps, the residents successfully linked septic tank maintenance to use of the public taps, thus eliminating the problem of free-riders. The process of demanding water services also helped the residents in organizing themselves, and this capacity to organize was helpful in taking over some of the septic tank maintenance responsibilities themselves and for demanding septic tank maintenance support from the ULB.

4.4.2.3 History of organizing amongst PN residents

But, amongst the PN residents, the organization of residents did not start with demanding for water services; PN has a longer history of organizing and the starting point of this history is the time residents moved into the tenement in 1998.

Residents from an unnotified slum lining the highway in B.P.Agraharam were re-located to the PN tenements. 64% of the tenement units were given to these re-located slum residents, the remaining 36% of the tenement units was reserved for 'katchi members' (lower level political cadres) as political patronage. Since the beginning, there was distrust between these two groups of people. One woman who has been living in PN since 1998 said the katchi residents were a "bad influence" within the tenements. Rowdies, who were friends of the katchi people, started entering the tenements in the evening and harassing the women. 20 of the tenement residents, who were erstwhile slum dwellers, got together and formed an informal "security group" to address this social concern. The men in this security group used to sleep at the tenement entrance during the night, to keep the rowdies out. When the threat of security
passed, the group was disbanded, but when residents had to demand for water services in 2002, the core group that went regularly to the ULB to demand for water were the 13 women from the informal "security group". Thus, these circumstances forced the residents to organize themselves. It is interesting to note that when the TNSCB, in 1990, handed over control of tenement maintenance to the residents and the ULB, the TNSCB asked residents of SN, PN and the other tenements to form "welfare associations" to take care of tenement maintenance. SN residents did not even attempt to form these associations. In PN, an election was held by the TNSCB as soon as residents moved in to form a welfare association, but the association was disbanded within a month due to internal fighting amongst the members. The same PN residents, though, succeeded in forming groups when they were faced by external threats, like lack of security and no water.

PN residents, since the beginning, have made rules for the maintenance and cleanliness of the tenements. Though their informal residents' associations were formed not for the purpose of maintenance, these associations nonetheless made rules for the up-keep of the tenements. The women in the informal security group made several rules for the general cleanliness of the tenements, including no sticking of cinema/political posters on the tenement walls, no washing/hanging of clothes the courtyard areas of the tenement blocks (the residents had designated a separate strip of land in the rear of the tenements for drying of clothes), no combing of hair by the women outside their homes as this will dirty the surroundings with loose strands of hair, etc. Similarly, when the residents started linking septic tank maintenance to use of public taps, the core group that monitors and enforces this norm is the women from the earlier informal security group. The effectiveness of the PN residents in not only maintaining their septic tanks, but also up-keeping their general tenement appearance is evident by contrasting the clean, unblemished walls of PN with the poster-ridden ones of SN.
4.4.2.4 Geography and the effect of availability of water on septic tank maintenance

Since linking septic tank maintenance to use of public taps is a clever way of enforcing residents’ contribution towards septic tank maintenance, the obvious question is why SN residents did not use the same method to enforce maintenance. The answer is the unreliability of municipal water services to the public taps in SN. SN occupies the whole of two Wards: 8 and 9. Ward 9 did not receive any municipal water to the public taps and Ward 8’s water supply was erratic, due to less water pressure in the pipes by the time they reached SN. Hence, SN residents were less dependent on their block public taps and this reduced the effectiveness of using the public taps as a rewarding/sanctioning tool for contribution to septic tank maintenance. Also, with the installation of the public tap at the leaking Periasemur main water line, residents started depending entirely on this public tap for their needs. It was a common sight during my visits to SN to see women residents, in their sari blouses and petticoats, bending under the gushing water and bathing themselves and their children.
Thus, the SN residents creatively solved their water problem by installing a public tap at the leaking water line, but this creative solution to address the challenge of water undermined their effectiveness as a pressure group in solving their other challenge of septic tank maintenance.

Figure 4.8: Image of leaking water line, which became an alternative and more reliable source of water in SN

4.5 External support from the ULB: Bureaucracy more effective than political patronage

Certain septic tank maintenance tasks are too complex for the residents to accomplish themselves and external support is needed from the ULB to get these tasks done. This research has two surprise findings in the way in which PN residents received support from the ULB: 1) SN, in which the elected representatives, Ward Councilors, have always been tenement residents, performs worse in septic tank maintenance than PN, where all previous WCs have
lived outside the tenements, and 2) the channel of the bureaucracy was more effective in receiving ULB support for septic tank maintenance than that of electoral politics.

The conventional wisdom is that when the elected political representative lives within the same neighborhood, he/she will be more responsive to the demands of the citizens. Empirical research supports this conventional assumption: Lam, in his study on the management of irrigation associations in Taiwan (Lam, 1996), finds that when irrigation association officials are residents of the local community, they respond more efficiently to the needs of the community since "their daily interactions with local people in the community can provide them with information on different issues concerning irrigation as well as the community" and the "local community could put them under much social pressure or even social ostracism" if they don't perform. Lam calls this relationship between government officials and residents "social embeddedness", where public officials can be residents of a community, thus blurring the boundaries between state and citizens. Since the SN Ward Councilors are in a "socially embedded" relationship with the tenement residents, it is surprising that they are unresponsive and ineffective in getting septic tank maintenance done. On the other hand, all the Ward Councilors of PN till 2006 have been living outside the tenements and according to the residents on the 2001-2006 Ward Councilor: "the only time we saw him was when he come to PN in 2001 to campaign for votes before the elections".

Since the WCs of PN have been not tenement residents, this was one reason for the PN residents to attempt accessing the ULB through the bureaucracy, instead of the elected political representatives. This research finds that PN residents are more successful in septic tank maintenance because of their bureaucratic connection to the ULB. This is an unexpected finding, given that much empirical research on public service delivery for the urban poor in

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6 Lam's study focuses on why the irrigation system is more effectively operated and maintained in Taiwan compared to South Asian countries like India and Nepal. Taiwan's irrigation associations are parastatal agencies responsible for the operation and maintenance of the irrigation systems and they are supervised by higher levels of government.
developing countries (Jha et al, 2005; Harris, 2005) finds that political patronage is more effective in giving the urban poor a voice in demanding services than the bureaucracy. Political patronage can be defined as an "informal contractual relationship between persons of unequal status and power, which imposes reciprocal obligations of a different kind on each of the parties" (Silverman, 1965 quoted by Piattoni, 1996). In a patron-client relationship, patrons (elected representatives) control access to certain scarce resources and they allocate these resources to their clients (citizens in their political constituency) in exchange for their clients' electoral support. Thus, a patron-client relationship is based on personal reciprocity, where the patron reciprocates the electoral support extended to him/her by his/her clients with particularistic favors to the clients. Though some scholars have criticized political patronage as corrupt and feckless (Carothers, 2002, Putnam, 1993), others (Grindle, 2004; Piattoni, 1996) have encouraged a critical re-evaluation of political patronage as a more realistic and effective channel for the urban poor in demanding services from the state. The empirical research in India (Jha et al, 2005; Harris, 2005) corroborates Grindle and Piattoni's ideas, that electoral politics is an effective channel through which the urban poor can interact with and influence the state. Jha et al, in their research on the ways in which residents of Delhi slums access formal government, found that most of their respondents interact with elected officials (informal leaders who are affiliated to political parties and even Members of Parliament) because "politicians pay careful attention to slum dwellers so they can be assured source of votes". Their research also finds that informal leaders are "crucial intermediaries between slum dwellers and bureaucrats, their role perhaps magnified by the lack of incentives bureaucrats face in dealing with the poor". Harris, in his study on three Indian cities, Bangalore, Delhi and Coimbatore (Harris, 2005), also finds that party politics is the most common channel for the urban poor in expressing their needs for urban services (in his study, urban services include water supply, sanitation and roads).

So, if bureaucrats lack incentives to respond to the service needs of the urban poor, how did the PN residents succeed in gaining access to the ULB through the bureaucracy? My finding
is that this is linked to timing of the start of property taxes in the tenements and the difference in channels through which the two tenements received their water services.

4.5.1 Difference in Timing of Start of Property Taxes

Figure 4.9: Timeline of property taxes and service delivery in SN and PN

Sathya Nagar

- 1988: Residents move into tenement. TNSCB provides individual household water connections and maintains services. No property taxes levied on residents.
- 1990: Septic tank maintenance transferred to ULB and residents. ULB starts levying property taxes.
- 1996: ULB provides public taps on pressure from Ward Councilor. No municipal water supply to taps.
- 2004: ULB provides more public taps on pressure from current Ward Councilor. Again, no municipal water supply to taps.
- 2007: Residents install tap at leaking main water line for continuous, reliable water service.

Poompuhar Nagar

- 1998: Residents move into tenement. No water services. No property taxes.
- 2002: ULB asks residents to start paying property taxes. Residents demand water services in exchange for taxes.
- 2003: ULB provides public taps with reliable municipal water supply.
- 2004: Residents start paying property taxes.

When we look at the timing of the start of property taxes in SN and the provision of water services, SN residents had individual household water connections since 1988 and the tenements were maintained free of charge for the residents by the TNSCB. With the 1990 change in tenement maintenance policy and the subsequent 1992 national decentralization
policy, the ULB started levying property taxes on residents to finance the maintenance of tenement services\(^7\). But residents had had their services maintained by the TNSCB for no charge, they refused to pay property taxes with arguments like: "We never asked to be moved from our huts to this tenement. We were forced to move to this tenement, so we won’t pay the mortgage or property taxes?" and "Why should we pay for maintenance? It is the government’s responsibility to take care of our tenements”.

In PN, the ULB refrained from imposing property taxes for almost four years after residents moved into the tenements. In these four years, residents organized themselves to take over some of the septic tank maintenance responsibilities, but for other tasks, like unclogging of septic tank chambers, they started paying an informal tax to the municipal sweepers to get the work done. This practice of paying municipal sweepers for unclogging of septic tank chambers is not unique to PN; in fact, all three tenements in Erode district constructed after the 1992 decentralization policy follow this practice. This practice is noticeably missing from the two Erode tenements constructed before 1992. In 2002, the ULB came under pressure from the District Collector to increase property tax collection from the tenements. Though more research has to be done on the two-year negotiation process that ensued between the PN residents and the front-line officials of the ULB (namely, the sanitary supervisor and bill collector), based on the protracted time period for negotiation and the clear division of septic tank maintenance responsibilities between the PN residents and the ULB, I hypothesize that the PN residents and the front-line ULB officials reached an understanding that in exchange for property taxes from residents, the ULB will be responsible for some of the septic tank maintenance tasks (like unclogging underground drainage pipes and replacing damaged drainage pipes). For other septic tank maintenance tasks, residents would do them themselves.

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\(^7\) I do not have data as to why the ULB started levying property taxes in SN in 1992, instead of stalling property tax collection the way they did in PN. My hypothesis is that it took them a few years to understand the challenges of coping with tenement maintenance through property tax revenues and to come up with a strategy of not imposing property taxes for as long as possible to resist this tenement maintenance responsibility.
and also continue with the practice of paying the informal tax to the municipal sweeper the unclogging of septic tank chambers.

4.5.2 Different channels for receiving water services

Figure 4.10: Channel for receiving water services in SN

SN initially had individual household water connections, but subsequent to the TNSCB's change in water policy, the public taps were provided in SN by the WCs. SN residents never asked for these taps. Both the previous Ward Councilors, for the terms 1996-2001 and 2001-2006, proudly told me that their contribution as WCs had been to install public taps for SN. Since both these WCs were tenement residents during the time of their term, they were accountable to their voters/neighbors and felt the pressure to do something for their tenement, and public taps were the answer.
On the other hand, in PN, all the WCs, till 2006, had lived outside the tenements. The PN residents told me that the previous WC (during the term 2001-2006) lived 2 kilometers away from PN and the only time he visited the tenements was to ask for votes before his 2001 campaign. So, when the PN residents were approached by the bill collector in 2002 for property tax collection, the residents did not go to their WC for help. Instead, they told the bill collector that they would pay their property taxes only if they were provided water services. Thus, the PN residents got their public taps through the route of the bureaucracy, and not the

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8 The political landscape of Ward Councilor elections in SN and PN is different in part because of the size of the tenements. SN occupies the whole area of two Wards, 8 and 9. Since SN has almost 90% Scheduled Caste (SC) residents, it is an SC reserved area, i.e. the WC of SN has to be a SC. Also, it is very difficult for outsiders (people who are not tenement residents) to become Ward Councilors. One of the SN residents said that a Congress candidate from an adjacent Ward had spent almost Rs.80,000 for his campaign to be a WC for the SN Ward, but he had lost. The resident said it is difficult for outsiders to win the trust of local residents and residents have the feeling of "why should we vote for outsiders". The WCs of SN are very unresponsive when it comes to maintenance of SN services. Residents openly complain about the ineffectiveness of the WCs in responding to their maintenance demands. On the other hand, PN occupies a part of Ward 2. There are 788 franchised residents in Ward 2; 368 live in PN, 370 of them live in the Gownders area (Gownders are caste Hindus, above the SCs but below the Brahmins in the caste hierarchy) and 50 of them (predominantly SCs) live in slums adjacent to PN. In both the 1991 and 1996 elections, the Ward Councilors were from the Gownders area. 2006 was the first year in which a resident of PN stood for Ward Councilor elections and he won by a narrow margin of 8 votes.
Ward Councilor. This helped them establish a relationship with the front-line officials of the bureaucracy and PN residents use this bureaucratic linkage when they need municipal support for certain septic tank maintenance functions.

4.5.3 Advantages of bureaucratic channel for septic tank maintenance

For septic tank maintenance, the bureaucratic channel is more effective than political patronage for the following reasons:

*Fair and clear division of responsibilities between ULB and residents:* In SN, residents expect the ULB to take over all septic tank maintenance responsibilities, with the attitude that it is the state's responsibility to maintain their services. The ULB, on its part, accuses the SN residents of being "lazy", and expecting too much from the ULB without themselves contributing in any way towards tenement maintenance. In PN, there is a very clear division of maintenance responsibilities between the ULB and residents. Since the cleaning of the septic tank chambers is the most frequent maintenance task, and it is "a dirty job", residents contribute an informal payment of Rs.300 to the municipal sweeper every time he does the work. On its part, the ULB is responsive to its specified septic tank maintenance tasks. When the Executive Officer is reluctant to authorize some of these tasks (like the replacement of damaged underground drainage pipes), the sanitary supervisor and bill collector apply pressure on him to do so in exchange for the property tax paid by the residents. Thus, both institutional actors (PN residents and front-line ULB officials) do not feel that the other is taking advantage of them.

*Sustainability:* With the clear division of maintenance tasks through do-it-ourselves, formal property taxes and informal taxes to the municipal sweepers, the PN residents and the bureaucracy have reached a social contract, which is more likely to be sustained than a patron-client relationship. In SN, septic tank maintenance is poor because residents access the ULB through the Ward Councilor (WC) and the WC is ineffective. Thus, the political patronage route
is susceptible to the vicissitudes of the 5-year electoral cycle because of its dependence on elected politicians.

*Accountability*: Though political patronage is an informal reciprocal contract, it has less accountability than the bureaucratic channel. In the example of the Erode tenements, it is difficult for "clients" to make "patrons" deliver on their promises after elections. In the words of an older PN resident about the previous WC: "He used to come knocking on my door everyday before the elections, asking for my blessings. I have not seen him since the day he won the elections". In the case of the bureaucracy, though, it is easier for the PN residents to hold them accountable. The front-line officials (the sanitary supervisor and bill collector) play a critical role as conduits between the PN residents and the Executive Officer (EO). The front-line officials face pressure from the EO to collect property taxes from the residents and at the same time, they face pressure from the residents to respond to certain maintenance tasks in exchange for the property taxes. Since pressure from the EO to increase property tax revenues is a long-term one, compared to the short-term interests of a campaigning Ward Councilor, it is easier for residents to hold the ULB accountable through property taxes paid. Similarly, in the case of the informal tax paid to the municipal sweepers, there is a clear expectation from the residents on the deliverables from the sweepers in exchange for the payment made. If the municipal sweepers don't do the work, then residents will stop paying them in the future.
Chapter 5: Looking forward: Shaping India’s New Discourse on Service Delivery for the Urban Poor

This research started with the question: within the same municipality, why are residents of some tenements more willing to contribute towards septic tank maintenance than others? Why is the same municipality more willing to extend maintenance support to the residents of one tenement compared to the other? In short, though located in same municipality, what are the institutional arrangements and incentive structures that make PN more successful in septic tank maintenance than SN?

This research is framed within the new institutional context of the 1990 change in TNSCB property rights system (from renting to lease-to-purchase of tenements) and the 1992 national-level decentralization policy in India. On decentralization, the responsibility for maintenance of tenement services (including septic tanks) was devolved from the state level agency, TNSCB, to the local actors, the ULB and the tenement residents. The ULB of B.P.Agraharam started financing septic tank maintenance primarily through property taxes. A common scenario in the Erode tenements is that residents do not pay property taxes because they feel the ULB is not responsive to their service demands. The ULB does not respond to residents’ service demands because they are defaulting on their property taxes. Within this context, I was presented with a puzzle: both SN and PN residents default on their property taxes; SN is caught in this vicious property tax cycle, but PN has succeeded in snapping out of the cycle? I re-cap in this chapter the three reasons that contributed to the successful maintenance of PN septic tanks, despite the fact that these residents have arrears in their property tax payments: 1) sharing of maintenance responsibilities between ULB and residents depending on nature of task, 2) organization of residents and 3) external support from ULB. I have described in detail the effects of these variables on septic tank maintenance septic tank maintenance in the previous chapter. In this chapter, I use these findings as a springboard to raise some questions for future research, which have implications beyond the sector of
sanitation, beyond the housing typology of tenements and beyond the geographical context of Erode. I argue that since these questions are extrapolations of the ways in which services are actually delivered to the urban poor on the ground, finding answers to them will be critical to understanding how service delivery can be improved in the new, rapidly urbanizing and decentralized institutional settings in developing countries.

I will summarize each of the research findings below and link these findings to larger questions on how service delivery for the urban poor can be improved in developing countries.

5.1.1 Sharing of maintenance responsibilities between ULB and residents depending on nature of task

One of the reasons for the successful break-away of the PN residents from the vicious property tax cycle is because the residents and the ULB have a clearly delineated and well-enforced system of sharing septic tank maintenance responsibilities between themselves. The residents and the ULB have a social contract that residents will pay formal property taxes and informal taxes to different actors within the ULB in exchange for very specific septic tank maintenance functions, and residents will take on the responsibility for other septic tank maintenance tasks themselves. When the TNSCB devolved tenement service maintenance responsibilities to the local actors in 1990, it assumed that the ULB and the tenement residents would share maintenance responsibilities between themselves. But as this research shows, though PN achieved this desired outcome, the process leading to the outcome was not a simple, straight-forward one because both local actors, the ULB and the tenement residents, face disincentives in taking on these increased service maintenance responsibilities. In PN, the act of resistance by the ULB, of not levying property taxes and thus disengaging itself from the responsibility of providing and maintenance tenement services (namely water supply and
sanitation), triggered a series of events that eventually led to the successful division of septic tank maintenance responsibilities between the ULB and the residents.

5.1.2 New governance structures for the urban poor

This research finding on the sharing of septic tank maintenance responsibilities between the ULB and the tenement residents raises an important question on governance structures for the urban poor. With the rapid urbanization of developing countries, we see large areas within the city occupied, formally and informally, by the urban poor. Using insights from the complex Erode tenement process that led to the division of septic tank maintenance responsibilities between the ULB and PN residents, how can policy makers, planners and researchers re-articulate governance structures for the rapidly increasing large areas of the urban poor within cities in developing countries? As evident from the septic tank maintenance case, residents can take on some responsibilities themselves, but they will depend on the state for others. What are the processes, legal frameworks and institutional incentives that can lead to a clearly delineated and well enforced system of sharing service and decision-making responsibilities between the urban poor and the state?

5.2.1 Organization of tenement residents

The sharing of responsibilities between the state and the citizens for the provision and maintenance of services depends on a large extent on the organizational capacity of the citizens. In PN, the residents had succeeded in organizing themselves to take over some of the septic tank maintenance responsibilities; their superior organization also helped them in negotiating more effectively with the ULB when demanding service provision and maintenance. This research finds that two variables contributed to the successful organization of PN residents: 1) design of the septic tank infrastructure, and 2) effective monitoring and
enforcement of septic tank maintenance rules due to linking of septic tank maintenance to use of public taps. The research finding on the importance of design and the spatial location of sanitation infrastructure is an important one, because this variable is often ignored and overlooked in the collective action and common pool resource scholarship. Though the TNSCB changed its property rights system (by changing the tenement policy from renting to lease-to-purchase), this research shows how other variables, like the spatial location of the septic tank system, motivated PN residents, both owners as well as renters, to contribute towards septic tank maintenance. Besides design of the septic tank system, another important variable for the successful maintenance of septic tanks in PN is the linking of septic tank maintenance to use of public taps. I will address this variable under the larger question: should services for the urban poor be provided a la carte or in a bundle?

**5.2.2 Provision of services to the urban poor: A la carte or bundled?**

PN residents very cleverly linked a non-excludable service, like septic tank maintenance, to an excludable one, like use of public taps, so that they can effectively monitor and enforce other residents' compliance to the septic tank maintenance rules and prevent free-ridership. This system of bundling services (in the PN case, bundling of water supply and sanitation) may be a more effective strategy for the ULB to enforce payments for service provision and maintenance, rather than providing these services a la carte. This system is particularly important for recovering the costs of providing and maintaining sanitation infrastructure, since sanitation is a low priority for the urban poor (Wright, 1997). The practice of bundling services has been formally adopted by public utilities in Philippines\(^1\) and Columbia\(^2\). In Philippines, the local water companies combine the sewer tariff with the water bill, so that if residents default on

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\(^2\) Source: http://www.eeppm.com/epmcom/index2.htm
their sewer tariffs, the water company can cut off their water supply. In Medellin, the Public Enterprises of Medellin (EPPM) is a public utility company that provides water supply, sanitation and electricity services as a combined package to the urban poor. Whereas this bundling of services effectively solves the cost-recovery problem, it raises the concern of affordability: what if the poorest residents can't afford the entire service package? The advantage with the a la carte service delivery is that it gives residents the choice to prioritize services they want and can afford to pay for.

In the context of the Erode tenements, the option of bundling services leads to the question: why didn't the ULB of B.P.Agraharam combine the water supply and sanitation bills into a single payment, so that if residents default on sanitation bills, the ULB can cut off their water supply. Also, as evident from the Erode tenement cases, Erode is located in a cinema-mania belt and tenement residents, as avid movie watchers, value electricity and cable connection much more than sanitation. Since electricity is provided by a state level agency, the Tamil Nadu Electricity Board (TNEB), why didn't the ULB try to coordinate with the TNEB to cut off electricity to tenement units that default on their property taxes? To answer these questions, we have to go back to the initial act of resistance to decentralization by the ULB of not levying property taxes, so that they can disengage themselves from the responsibility of providing and maintaining tenement services. Since the ULB very marginally recovers its costs of maintaining tenement services through property taxes, it shirks from levying these taxes, and not surprisingly, faces no incentives to increase property tax collection for septic tank maintenance by coordinating sanitation with other services like water supply and electricity. This finding points to the limitations of using property taxes, with insignificant cost recovery, to finance sanitation maintenance and raises an important question: how should the property tax system be re-defined so that the ULB is motivated to provide and maintain services for the urban poor, and also has incentives to innovate with alternative forms of service delivery (like finding the right bundle of services that will work most effectively for a particular place)?
5.3.1 External support from ULB

The third important finding is that PN established successful vertical linkages with the ULB through the route of the bureaucracy, instead of going through political patronage. Also, because of the series of events that were triggered off by the ULB's act of resistance of not levying property taxes, the relationship between the PN residents and the ULB became more like a commercial transaction. Unlike the patron-client relationship that SN residents share with the ULB, which is subject to particularism, unsustainability and ambiguity in service delivery expectations and outcomes, PN residents get their service demands met through the more sustained, equitable and accountable channel of the bureaucracy. I use this finding on the changing nature of the state-citizen relationship that I saw in PN and the other two tenements constructed after decentralization to explore the larger social implications of this change, particularly on the most vulnerable and poorest citizens.

5.3.2 Reconciling the "welfare state" and the "commercial state"

When residents get their service demands met through the bureaucracy, there are certain advantages because the bureaucrats, particularly the front-line ones as shown in the PN case, will be motivated to establish long-term relationships with the citizens and will be concerned about the long-term implications of their policies. The WCs and other political representatives will be more short-sighted in their promises and services to their constituencies. But, within the urban poor, Erode's tenement residents do not constitute the poorest amongst the poor. For the poorest citizens, political patronage is still a powerful channel to have their voices heard and getting their service demands met. When service provision and maintenance is depoliticized by insulating it from politics, there is a fear that this process of de-politicization will disempower and alienate the poorest citizens from the decision-making process. Also, within PN, residents do not depend on the bureaucracy for all their demands. They access the ULB through the bureaucratic channel for service provision and maintenance, but for other demands
like protesting against eviction for not paying their mortgages, they still rely on the political channel. So, in the new governance structures for the urban poor, how can we re-structure the combination of bureaucracy and politics, since both these channels have their comparative advantages in meeting the service needs of the poor.

Besides accessing the ULB through the bureaucracy, PN residents succeeded in septic tank maintenance because, akin to a commercial transaction, they had very specific and unambiguous expectations from different actors within the ULB for different kinds of payments made to them. There are many advantages in applying these commercial principles to the transactions between the state and citizens: 1) clear benchmarks can be set for service performance, 2) residents are in a better position to hold the state accountable, and 3) tariff structures are set in such a way that costs can be recovered and there is an incentive for the service provider to deliver and maintain services. But, within this changing role of the state-citizen relationship from a patron-client one to a more commercial one, what are the social implications for the poorest residents? What about that stratum of the urban poor who do not have the financial resources to hold the ULB accountable by paying formal and informal taxes? Is there a threat that the state will be absolved of its social obligations of providing the most basic needs and services to its poorest citizens?

This research points to the fact that through we see dichotomies emerging (bureaucracy vs. politics, welfare state vs. commercial state), the changes taking place in cities in developing countries call for governance structures which can reconcile these dichotomies. The new governance structures for the urban poor will require the bureaucratic as well as the political channel and the application of commercial as well as welfare principles. So, the challenge for researchers, policy makers and planners is how we can structure this combination between the dichotomies for more effective provision and maintenance of services to the urban poor?
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