



## TOWARDS A MORE EQUAL CITY

# Ahmedabad: Town Planning Schemes for Equitable Development—Glass Half Full or Half Empty?

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### EXECUTIVE SUMMARY

#### Highlights

- ▶ Ahmedabad City has managed its urban expansion through a structured process known as a town planning scheme (TPS) to ensure that land use planning is integrated with service provision in the city's expanding peripheries.
- ▶ The TPS is a process of pooling and readjusting lands followed by appropriating parts for public purposes. It became more widely used after a 1999 amendment to Gujarat State's Town Planning and Urban Development Act. It features negotiations between the local planning authority and landowners.
- ▶ The TPS has enabled more equitable allocation of urban land, allowing Ahmedabad to obtain land for public purposes such as low-income housing, open spaces, roads, underlying utility infrastructure, and social amenities. This has had transformative outcomes, including allowing the construction of 33,000 dwelling units under the Basic Services for the Urban Poor of the Jawaharlal Nehru National Urban Renewal Mission.



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- ▶ Although the notion of equity is embedded in this process, it is also limited by the state's ability to prioritize public needs over private land rights, negotiate with original landowners, and be flexible about accommodating the existing informal sector.
- ▶ While the TPS is a progressive step over eminent domain, it does not include the participation of all stakeholders, namely tenants and informal occupants, in the negotiation process.
- ▶ The TPS has faced challenges including time delays, lack of financing, and opposition from farmers in locations distant from the urbanizing periphery.
- ▶ Despite these limitations, the TPS provides a tool for better planned and serviced urban development. It has allowed Ahmedabad to overcome key barriers that many Indian planning authorities face in obtaining lands for roads and other amenities and to avoid the haphazard, unserviced urban expansion that characterizes most Indian cities.

## Summary

**Significant rural to urban migration in Indian cities is exacerbating existing challenges of unplanned urbanization, informal housing, and the provision of basic services, particularly to low-income populations. Addressing these challenges requires the availability of public land, which is difficult in India's privately owned land regime.** Gujarat's town planning scheme (TPS), implemented in Ahmedabad City, has been transformative in that it has contributed to the generation of land for public purposes. This mechanism was put in place through the Bombay Town Planning Act of 1915, when Ahmedabad was under British rule, but was more widely and effectively used after the 1999 amendment to the present legislation, the Gujarat Town Planning and Urban Development (GTPUD) Act of 1976.

**The TPS is a land pooling and readjustment mechanism that allows the city to appropriate land from private landowners for public purposes, such as roads, open spaces, low-income housing, underlying utility infrastructure, and other health, education, and community services.** Private landowners benefit in two ways: via compensation payment for land acquired (after deducting the costs of infrastructure, referred to as betterment charges) and the rise in land prices after the planning authority invests in trunk infrastructure. Landowners receive a reduced area of their original land after the appropriations, and the appropriated lands are then

reserved for various public purposes. This is a quicker way to appropriate land than the process currently stipulated through the 2013 Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, a national act that is applicable to both rural and urban areas. The RFCTLARR Act is considered time consuming to implement, yet it provides for a more fair and transparent process developed with farmers' participation, a framework that did not previously exist.

**This paper reviews the evidence on whether the TPS mechanism has enabled transformative change with equitable outcomes in Ahmedabad City—and if so, how.** It is based on a review of existing research; analysis of government-produced data; in-depth, semi-structured interviews with key informants from government, civil society, academia, and the private sector; and field visits to three TPS sites. It also draws heavily from the lead author's longstanding experience conducting critical research on a wide range of planning issues in Ahmedabad. The paper identifies important triggers of transformative change in the city; examines the roles of key enabling and inhibiting factors in terms of urban governance, finance, and planning; and discusses challenges that remain.

**The TPS process enlists the participation of landowners through local-level negotiations. Furthermore, it is flexible in terms of accommodating existing informal settlements.** Through the 1999 amendment to the GTPUD Act, the TPS process empowered the city planning authority to immediately appropriate lands for roads, thus paving the way for better managed urban development. It has also made lands available for social housing within the city and for other public amenities such as health and educational infrastructure. Finally, it introduced the ability to leverage the increased land value to finance infrastructure and services through the sale of the part of lands appropriated. The notion of equity is embedded in this process but is also limited by the state's ability to appropriate and allocate lands for public purposes (thereby prioritizing public needs over private land rights), undertake such appropriations by negotiating with the original landowners, and be flexible about accommodating the existing informal sector. It does not include the participation of all stakeholders, namely tenants and informal occupants, in the negotiation process.

**While the TPS mechanism has been successful in generating urban land for core trunk infrastructure, roads, and social housing in Ahmedabad City, it has faced some limitations.** The TPS has encountered manageable challenges,

which include time delays due to lack of coordination among the concerned local agencies and the centralization of approval processes at the state level. It has also faced unassailable challenges, which include a lack of financing with which to construct public amenities on reserved land (which stems from city governments' lack of taxation powers), and opposition to the TPS by farmers in greenfield sites, whose lands do not appreciate in value because there is not much potential for urbanization in the near future.

**We conclude that despite these challenges, the TPS has played a crucial role in the more equitable distribution of urban land in multiple ways.** It has enabled planned urban extensions in the city's peripheral areas; enabled the construction of numerous social housing units when national funds were available for this purpose; increased street density in the city, which has helped improve accessibility, reduce average trip lengths, and reduce road congestion; enabled negotiated and non-coercive land appropriation by the planning authority for public purposes; and accommodated informal settlements in the planning process. The TPS's transformative potential in Indian cities is limited by the challenges of balancing public-purpose land use with private land ownership and the need to accommodate large segments of the population that cannot afford formal lands.

## About This Paper

**This case study is part of the larger World Resources Report (WRR) *Towards a More Equal City*, which views sustainability as composed of three interrelated issues: equity, the economy, and the environment.** The WRR uses equitable access to core urban services as an entry point for examining whether meeting the needs of the under-served can improve the other two dimensions of sustainability. The city case studies examine transformative urban change defined as that which affects multiple sectors and institutional practices, continues across more than one political administration, and is sustained for more than ten years, resulting in more equitable access to core services and a more equal city overall. The goal of the WRR case studies is to inform urban change agents—including policymakers at all levels of government, civil society organizations, the private sector, and citizens—about how transformative change happens, the various forms it takes, and how they can support transformation towards more equal cities.

### Box 1 | Abbreviations

AMC	Ahmedabad Municipal Corporation
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AUDA	Ahmedabad Urban Development Authority
BJP	Bharatiya Janata Party
BRTS	Bus Rapid Transit System
BSUP	Basic Services for the Urban Poor
CM	Chief Minister
GTPUD	Gujarat Town Planning and Urban Development
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
PMAY	Pradhan Mantri Awas Yojana (Housing for All)
RFCTLARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement
SNP	Slum Networking Program
TPO	town planning officer
TPS	town planning scheme
TPVD	Town Planning and Valuation Department
UPA	United Progressive Alliance
WRR	World Resources Report

Figure 1 | **Ahmedabad at a glance**



Type of jurisdiction <sup>a</sup>		<b>Urban agglomeration</b>
Population in: <sup>b</sup>	1951 <sup>a</sup>	<b>0.9 million</b>
	2001 <sup>b</sup>	<b>4.9 million</b>
	2011 <sup>c</sup>	<b>6.4 million</b>
Total land area (in sq km, 2013) <sup>c</sup>		<b>450</b>
GDP per capita, Ahmedabad		<b>N/A</b>
Human Development Index, Ahmedabad		<b>N/A</b>
Human Development Index, India (2016) <sup>d</sup>		<b>0.62</b>
Gini coefficient, Ahmedabad		<b>N/A</b>
Population living below the poverty line (% 2011)		<b>N/A</b>

Population living in informal dwellings (% 2011) <sup>e</sup>	<b>13.1</b>
Access to electricity (% households, 2011) <sup>f</sup>	<b>98.6</b>
Access to piped water on premises (% households, 2011) <sup>g</sup>	<b>86.6</b>
Coverage of flush toilets (% households, 2011) <sup>h</sup>	<b>92.6</b>
Trips by mode (% , 2008): <sup>i</sup>	
Walking and cycling	<b>45</b>
Private cars and two-wheelers	<b>34</b>
Informal transport	<b>11</b>
Public transport (bus and metro)	<b>10</b>
Average trip length (km, 2008) <sup>j</sup>	<b>4</b>
Average prices of urban services (2017):	
Electricity (per kWh) <sup>k</sup>	<b>\$0.06</b>
Water and sewage treatment (per m <sup>3</sup> ) <sup>l</sup>	<b>30% of property tax</b>
Public transport ride (BRTS, AMTS) <sup>m</sup>	<b>\$0.06–0.41</b>
Informal transport ride (auto-rickshaw, per km) <sup>n</sup>	<b>\$0.15</b>
Average price of gasoline (price per liter, 2017) <sup>o</sup>	<b>\$1.05</b>
Primary decision-making level for cities:	
<b>State Government of Gujarat</b>	
Type of city leader, term years, and term limits:	
<b>Municipal Commissioner, 3 years, limit of 2 terms</b>	

Notes: All prices are reported in US\$ using market exchange rates for the source's corresponding year.

Source: a–b. Census of India, 2011; c. AUDA, n.d.; d. UNDP, 2016; e. AMC, 2014; f–h. Census of India, 2011; i–j. Based on personal communications with the Centre for Excellence in Urban Transport, CEPT University, Ahmedabad, October 2017; k. Torrent Power Limited, 2016; l. AMC, 2018; m. Ahmedabad BRTS, 2017; n. AMTS, 2017; o. CheckPetroPrice.com, 2017.

## 1. AHMEDABAD'S ATTEMPTS AT PLANNING FOR URBAN GROWTH

In India, ongoing urban growth is expected to exacerbate the existing challenges of unplanned urbanization, informal housing, and access to basic services, particularly for low-income populations. Addressing these challenges requires the availability of public lands, which is extremely challenging in privately owned land regimes. Due to a growing population and lack of appropriate planning, cities' peripheral areas—also called urban extension areas—sprawl in an unplanned manner, without access roads. This makes it extremely challenging to lay trunk infrastructure, reduces the amount of public land available for social amenities and green spaces, and leads to a lack of financing for infrastructure investments. The scarcity of public land makes provision of social housing difficult, even if national funds are made available for doing so. The widely used legislation for this

purpose was the former Land Acquisition Act of 1894, which Parliament amended in 2013 to the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act. Although this new legislation is more equitable, transparent, and fair to landowners (the farmers on the urban periphery), its implementation is very time consuming<sup>1</sup> due to the mandatory inclusion of social impact assessments and stakeholder consultations. Despite these challenges, Ahmedabad provides reasons for optimism and has been cited by some as a model for urban development in India.<sup>2</sup> The TPS represents an innovative land management tool that can help the city address some of these challenges.

Ahmedabad, located in the state of Gujarat, is the seventh largest metropolis in India. Its population in 2011 was 5.8 million in the Ahmedabad Municipal Corporation (AMC) area and 6.4 million in its urban agglomeration area (see Figure 1), which includes the



AMC and its outgrowth as defined by the registrar of population census.<sup>3</sup> The AMC's boundaries were extended in 2010 to 450 square kilometers (sq km) from 190 sq km.<sup>4</sup> The Ahmedabad Urban Agglomeration (AUA)<sup>5</sup> includes 4 towns and 103 villages (besides the AMC), leading to a multitude of local governments (both rural and urban) and fragmented governance. The AMC is the local government and has an elected body responsible for providing services, while spatial planning is undertaken by the Ahmedabad Urban Development Authority (AUDA), which is set up under the Gujarat Town Planning and Urban Development (GTPUD) Act of 1976. AUDA is a parastatal; that is, it is under the direct control of the state government and is a technical entity not directly answerable to the electorate or even the elected wing of the AMC.<sup>6</sup> The AUDA was created to deal with planned development of agglomeration areas, in coordination with multiple local government institutions. Subsequently, it was charged with the spatial development of both the AUDA and the AMC areas.

Regarding informal settlements, Ahmedabad has a history of unique partnership-based approaches to slum redevelopment that has involved proactively extending basic services in slums, offering them de facto land tenure by providing services and levying property taxes.<sup>7</sup> The city also constructed about 33,000 dwelling units under the social housing program known as Basic Services for the Urban Poor (BSUP), funded through the Jawaharlal Nehru National Urban Renewal Mission (JNNURM); as a result, it ranks fifth in social housing supply among Indian cities.<sup>8</sup> Well-located, well-distributed social housing construction throughout the city has been enabled by the lands made available through the TPS mechanism. In the context of housing, an important fact is the city's communal politics and the segregation of residential areas along religious lines. This has led to the development of a large and informal Muslim neighborhood on the city's periphery. The Danilimda TPS is one such locality (see Box 2 for details about three case study TPSs).

The implementation of development projects such as social housing and India's largest Bus Rapid Transit System (BRTS) has been made easier due to the availability of land. This has also resulted in a complete road network, which, with its clear hierarchy of streets, benefits the city in terms of increased accessibility, and can be directly linked to the application of TPS. In this paper, we first introduce the TPS mechanism and discuss its transformative changes and enabling conditions. We then explore the specific triggers for applying the mechanism. The TPS mechanism is limited by broader urban governance challenges; these inhibiting conditions are discussed in the paper's penultimate section. This case study presents the process of city transforma-

tion and its uneven development process that is characterized by taking one step forward and one step backward; achieving equitable outcomes at some times, regression at others.

This case study asks the primary question, "Has the TPS mechanism enabled transformative change with equitable outcomes in Ahmedabad City? And if so, how?"

Additional questions addressed include:

- i) What is the TPS mechanism of land management and how has it been institutionalized and used in Ahmedabad?
- ii) What were the enabling conditions and triggers of this transformative mechanism?
- iii) What are the inhibiting conditions that limit the utilization of this mechanism?
- iv) How can TPS be applied to achieve more equitable outcomes?

## Box 2 | Brief Description of Three TPSs Selected for On-site Investigation

We selected three TPSs located in different areas of Ahmedabad for fieldwork and closer study (see Figure 2). Vejalpur TPS, located in west Ahmedabad, has high-end commercial and residential developments. It was selected because it used the TPS mechanism to connect the city's second ring road to its third ring road, which allowed it to achieve 27.3 percent of its land under roads.

Vastral TPS, located on the city's eastern periphery, was selected because the Sardar Patel Ring Road passes through it.

The Danilimda TPS contains part of a large informal settlement called the Bombay Hotel that developed in response to communal violence in 2002 and the city's segmentation along religious lines. It was selected to assess how the TPS mechanism interacted with existing informality.

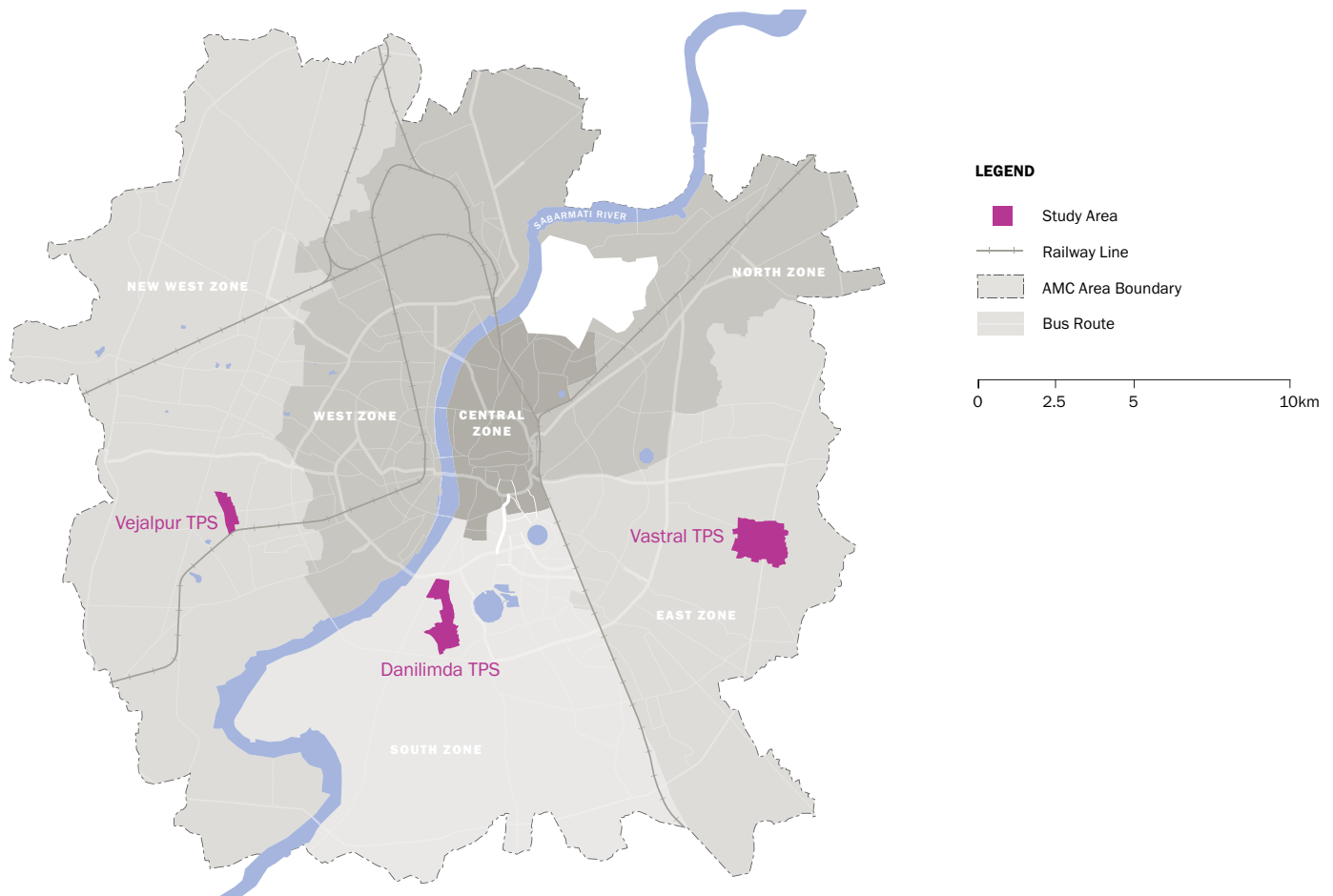
*Source:* Authors' analysis on TPS data available from the AMC's respective zonal offices, 2017.

This case study draws on multiple sources, beginning with published papers on the city (many of which have been authored or co-authored by Darshini Mahadevia, the lead author of this case study) and on the TPS mechanism. The original data used for this case study include land reservations in each individual TPS, obtained from the Town Planning and Valuation Department's (TPVD) website; the location of social housing projects, from the AMC's housing department; and the status of the TPS in the city, from the TPVD office. We also conducted in-depth open-ended interviews with urban planning officials from the AUDA and AMC, consultants who prepare TPSs, and academics, politicians, bureaucrats, and representatives from civil society and the private sector. These interviews yielded information on a wide range of topics, including how this mechanism worked under different conditions, the need for the 1999 amendment to the GTPUD Act, reasons for delays, and limitations of the mechanism. To the Town Planning Officers (TPOs) interviewed, we posed specific questions regarding how they dealt with existing

construction (including informal settlements) while finalizing the TPSs, and typical reasons for implementation delays. We also undertook an on-site investigation of three TPSs (see Box 2) to assess whether the lands reserved for various public purposes have actually been deployed as intended.

This paper is part of the World Resources Report (WRR), *Towards a More Equal City*, which examines whether equitable access to core urban public services can achieve a more economically productive and environmentally sustainable city. The first set of research papers examines this question from the perspective of a core urban service, like housing, energy, water, sanitation, and transportation. A second set of papers examines this question from the perspective of a pressing thematic issue, such as the informal economy and urban expansion. This paper is part of a third set, a series of city-level case studies that examine how and why cities transform (or do not transform) to become more equal.

Figure 2 | **Location of case study TPSs in Ahmedabad**



Source: AMC, 2018.

The WRR defines transformative urban change as that which affects multiple sectors and institutional practices, continues across more than one political administration, and is sustained for more than 10 years.<sup>9</sup> Experience suggests that when cities solve a seminal problem that impacts many people's lives, it creates momentum for change that has the potential to positively affect other spheres, creating a broader, virtuous cycle.<sup>10</sup> A seminal problem is one that is sufficiently large and complex that its negative effects are felt by large segments of the urban population. Each case study examines how attempted approaches to addressing these problems may have triggered broader cross-sectoral, institutional, citywide transformation. The case studies examine how transformative urban change may or may not have happened. It is important to note that the case studies are not “best practices.” Every case of transformative urban change has progressive and regressive elements, and every city experiences difficulties, conflicts, setbacks, and false starts. This case study explores these questions with respect to the TPS in Ahmedabad.

## 2. THE TOWN PLANNING SCHEME AS A MECHANISM FOR URBAN LAND MANAGEMENT

As a mechanism for transformative change, the TPS must be understood in the context of the difficulties inherent in obtaining lands for urbanization in India. The tool not only facilitates land pooling and readjustment but also involves a complex three-stage process of implementation that features negotiations embedded in local politics.

### A tool for making land available for urbanization

The most prominent legal tool for making land available for development was the 1894 Land Acquisition Act. This act was comprehensively revised in 2013 to give more voice to landowners, largely farmers, who did not have any remit under the 1894 act, which heavily favored the state. The new law, the RFCTLARR Act of 2013, doubled compensation to private landowners from what the prevailing land index<sup>11</sup> (or *jantri* rate) was for land.<sup>12</sup> However, the mandatory inclusion of social impact assessments and stakeholder consultations makes land acquisition by public authorities expensive and time consuming.<sup>13</sup> Empowered by the Indian Constitution to legislate on land, several states and cities have begun to explore more market-friendly and socially equitable methods to access land for public purposes. The TPS

mechanism of Gujarat—the land-pooling and readjustment mechanism—is among the nation's oldest for appropriating private lands for public purposes, and has undergone multiple amendments to get to its present form.

### The TPS mechanism

The TPS is a physical planning exercise carried out as a statutory activity under the GTPUD Act of 1976. TPSs were first applied in India by the British in the then-state of Bombay (now bifurcated into Maharashtra and Gujarat) under the Bombay Town Planning Act of 1915,<sup>14</sup> and the first such scheme was prepared for an area in Ahmedabad in the same year.<sup>15</sup> In the last two decades, it has been applied in Gujarat in many different contexts: for development in cities such as Ahmedabad, Surat, and others; for reconstructing Bhuj town following the earthquake of 2001;<sup>16</sup> and for developing a completely greenfield site, the proposed Dholera Special Investment Region, where 567 sq km is available for development.

The TPS works in Ahmedabad in conjunction with the Development Plan, which is a long-term (10-year) plan that identifies growth areas and plans city-level infrastructure. The Development Plan is prepared for the entire AUDA area (of which the AMC is a part) and which is divided into 480 TPS areas.

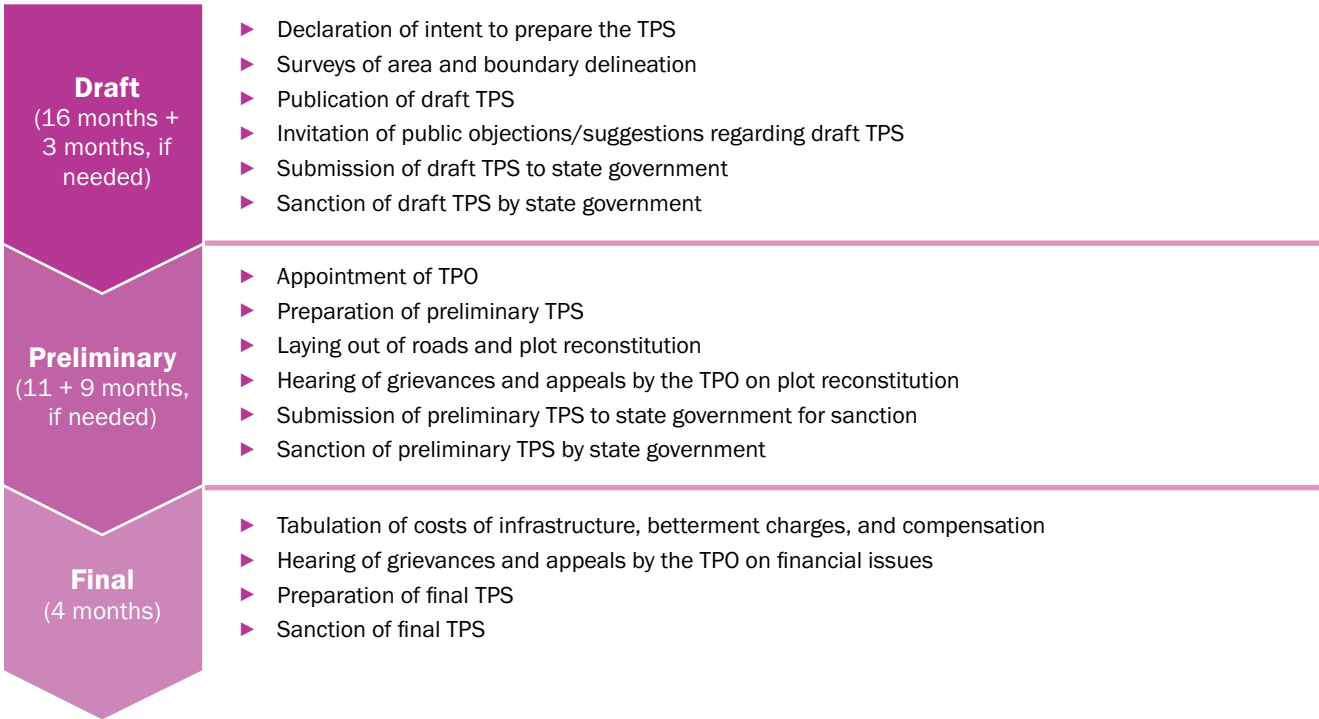
The TPS is a land-pooling and readjustment mechanism that was formerly applied to an area of 100–200 hectares (ha), but in recent years has been applied to up to 1,500 ha, where plot-by-plot readjustment (called “reconstitution” in the GTPUD Act) of boundaries creates land for a road network and underlying utility infrastructure.<sup>17</sup> In the process, the planning authority appropriates and earmarks (reserves) a certain proportion of an owner's land for public purposes such as roads, amenities, and low-income housing; the remaining land is returned to the owner. The cost of infrastructure investments on land—such as constructing roads and laying trunk infrastructure—is charged through what are called “betterment charges” when the TPS is finalized. This amount is adjusted against the compensation to be paid to the landowner for appropriating the land. The construction is undertaken on the returned plot after obtaining necessary approvals from the planning authority regarding land use and Development Control Regulations. Even with a reduced plot area, the landowner benefits from the escalated land value that results from the construction of access roads and trunk infrastructure.

The proposed appropriations under the GTPUD Act can be as follows: up to 10 percent for the socially and economically weaker sections’ housing, which we call “social housing”; up to 15 percent for roads; up to 5 percent each for parks, playgrounds, and other open spaces; and up to 5 percent for social infrastructure. The term “up to” indicates that if appropriation is not feasible, then the lands appropriated may not total to 35 percent as indicated by law, and following from there, these services may not be provided. The 1999 amendment to the GTPUD Act suggested an additional component for appropriation: 15 percent for the commercial sale of lands. The argument was that funds were required to lay infrastructure, especially road and trunk infrastructure. In particular, because the AUDA is not an elected body and thus does not have the power to tax, a revenue source is required; this is unlike the AMC, which has its own revenue sources and receives grant devolution from the state government. The proceeds from land sales are to be used only for capital expenses and infrastructural facilities in the area covered by the TPS. However, this is not so in practice, and proceeds from TPS land sales are used for capital investments throughout the city.

### The TPS process

The TPS process, discussed here to illustrate the negotiation process, comprises three stages (see Figure 3). The first is the **draft stage**, which can extend up to one year and is the first attempt to reconstitute plots after establishing the road network. This is done by the planning department of the AUDA or the AMC, in whichever jurisdiction the TPS is in, using available land ownership data from the state government’s revenue department and field surveys of existing structures using electronic devices such as total station.<sup>18</sup> Also at this stage, the location of land parcels for other public purposes are identified and marked on the plan. This draft TPS is made available in the public domain, first by announcing it in the newspapers and then by making these documents available in the planning authority’s (either the AUDA or the AMC) office for a month to receive objections and suggestions from landowners. Once the draft TPS is approved by the state government’s Urban Development and Housing Department, a TPO from the TPVD is appointed to take the negotiation process forward. The TPO is responsible for negotiating the reconstitution of land parcels and then dealing with the financial aspects detailed later. As per the 1999 amendment, the planning authority takes possession of road spaces soon after

Figure 3 | The TPS process and timeline



Source: Authors’ analysis based on information from TPVD office, Gandhinagar, 2017, and the GTPUD Act, 1976.



the draft TPS is approved so as to allow trunk infrastructure to be laid in the future. Hence, this draft stage is very important.

The second stage is the **preliminary stage**, wherein the TPO, who is a quasi-judicial officer and a key person in the TPS implementation process, gives a legal hearing to the plot owners and finalizes the plot reconstitution. This might also mean shifting some landowners' plots from one location to another (called *udafo* in the local language, which means "flying of plot"), which some landowners find objectionable. All such objections from the landowners are heard and then negotiated. As one TPO we interviewed said, "We are given powers to take decisions and we do so based on what we consider reasonable. In case there are multiple claims on the same location, we call all stakeholders and hear them and then adjudicate. We see to it that we cause minimum displacement of plots in the process."<sup>19</sup>

In the TPSs where there are existing developments on plots earmarked as reserved, the TPO can decide not to demolish them, but rather remove their reservations.<sup>20</sup> For example, in the Danilimda TPS, the reservations for all the social amenities were removed (as discussed later) to accommodate existing informal developments.<sup>21</sup> In this way, the TPO is able to make case-by-case decisions.

After the preliminary scheme is sent to the state government for approval, the last stage is the **final scheme**, when the TPO carries out final negotiations with the landowners regarding financial issues. On the one hand, the owner is compensated for appropriated lands; on the other, he or she must pay the betterment charges for infrastructure investments made by the planning authority. The compensation is linked to the "land index" (*jantri* rate). The betterment charges are decided based on the infrastructure investments made (or those that will be made). The total cost of all infrastructure—such as roads and trunk infrastructure—is estimated and apportioned to each final plot based on the area. The TPO settles the difference between the compensation and betterment charges, and accordingly tells the plot owner(s) whether they must pay charges or are entitled to compensation.

Due to the provision to hold negotiations at different stages, the TPS mechanism has been hailed for its participatory nature: "It is a democratic, equitable, inclusive, transparent, non-disruptive and non-coercive process."<sup>22</sup> However, this statement is applicable only to the landowners.

### 3. ENABLING EQUITABLE LAND ALLOCATION THROUGH TOWN PLANNING SCHEMES

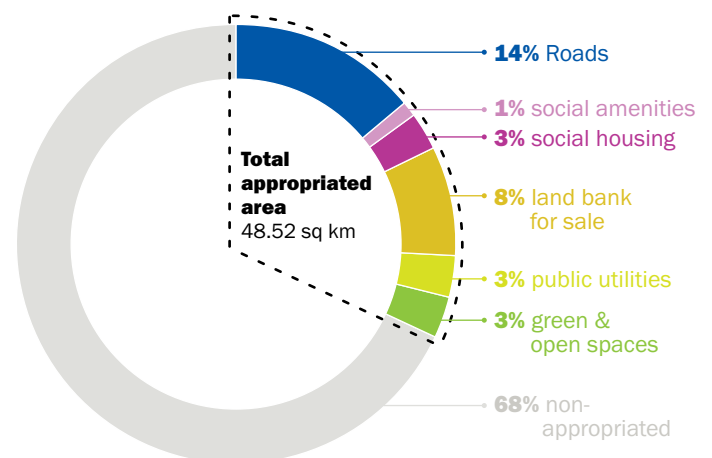
The TPS in Ahmedabad City has led to more equitable distribution of urban land. It has made lands available within the city for important public purposes, including green spaces and social amenities, social housing (instead of being concentrated on low-priced lands on the city's periphery), roads (thereby ensuring a complete network with clear hierarchy of roads), and future sales (to raise finance for infrastructure investments).

#### Lands for public purposes

Ballaney (2013) compiled data about TPSs in 2010 covering an area of 154 sq km of Ahmedabad City (including the AUDA and AMC areas).<sup>23</sup> A total of 49 sq km of land was appropriated for all public purposes, accounting for 31 percent of the TPS area.<sup>24</sup> Private owners retained 68 percent of the TPS area (see Figure 4).<sup>25</sup>

More recent data from 2017 (see Table 1) show the extent of land reservations in the final TPS disaggregated by public authority.<sup>26</sup> Evidently, the amount of land reserved for various purposes is far

Figure 4 | Overall appropriation of land designated through TPSs in Ahmedabad City, 2010



Source: Ballaney, 2013: 117.

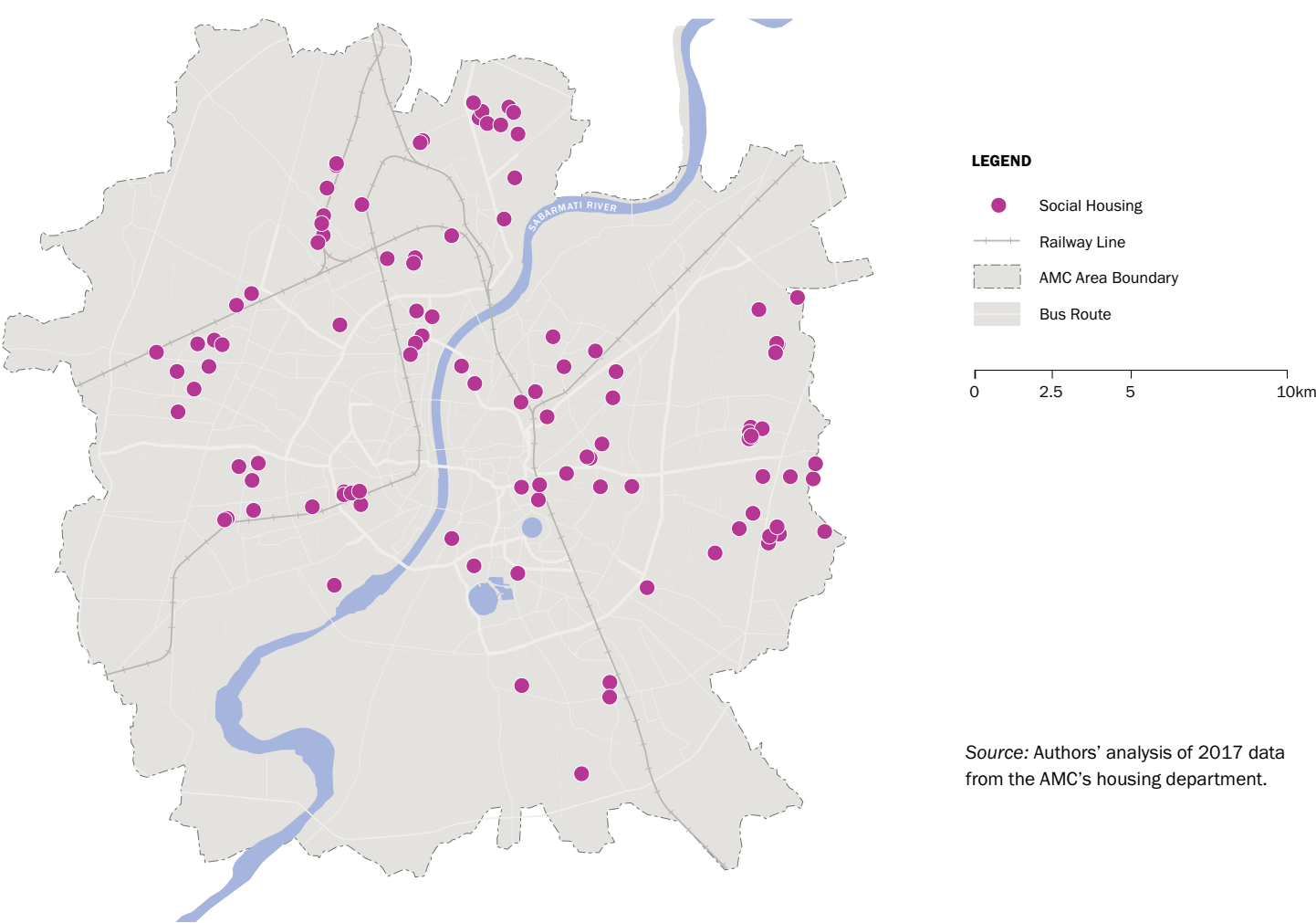
less than that stated in the legislation. This is because, as discussed earlier, the lands could not be appropriated due to land-owners' objections and/or the existence of structures on reserved lands in the TPS. However, because the AUDA's TPSs are largely in peripheral locations, in full or partial greenfield sites, it has been more successful in using the TPS mechanism to reserve lands for various public purposes (14.1 percent reserved for all purposes, except roads) than the AMC (7.6 percent reserved for all uses, except roads). The AMC's TPSs are in more developed locations, where land appropriation for public purposes has proved more difficult. Nonetheless, the reserved lands for social housing, green and open spaces, and social amenities were reduced to 6.9 percent in 2017 (see Table 1)<sup>27</sup> compared to 9.6 percent in 2010 (see Figure 4), excluding land bank for sale and roads.

Table 1 | **Land Reserved for Public Purposes in Ahmedabad, 2017 (%)**

PURPOSE	AMC	AUDA	AMC AND AUDA LAND, COMBINED
Social housing	1.2	3.1	2.0
Green and open spaces	1.4	2.1	1.7
Social amenities and utilities	3.3	3.2	3.2
Sub-total of above	5.9	8.4	6.9
Public land bank for sale	1.8	5.7	3.4
Total reserved for the above	7.6	14.1	10.3

Note: Data is from 147 TPSs. Numbers above show proportions of the total land owned by that agency.  
Source: Government of Gujarat, 2016.

Figure 5 | **Location of social housing schemes within the AMC area, 2017**



## Land for social housing

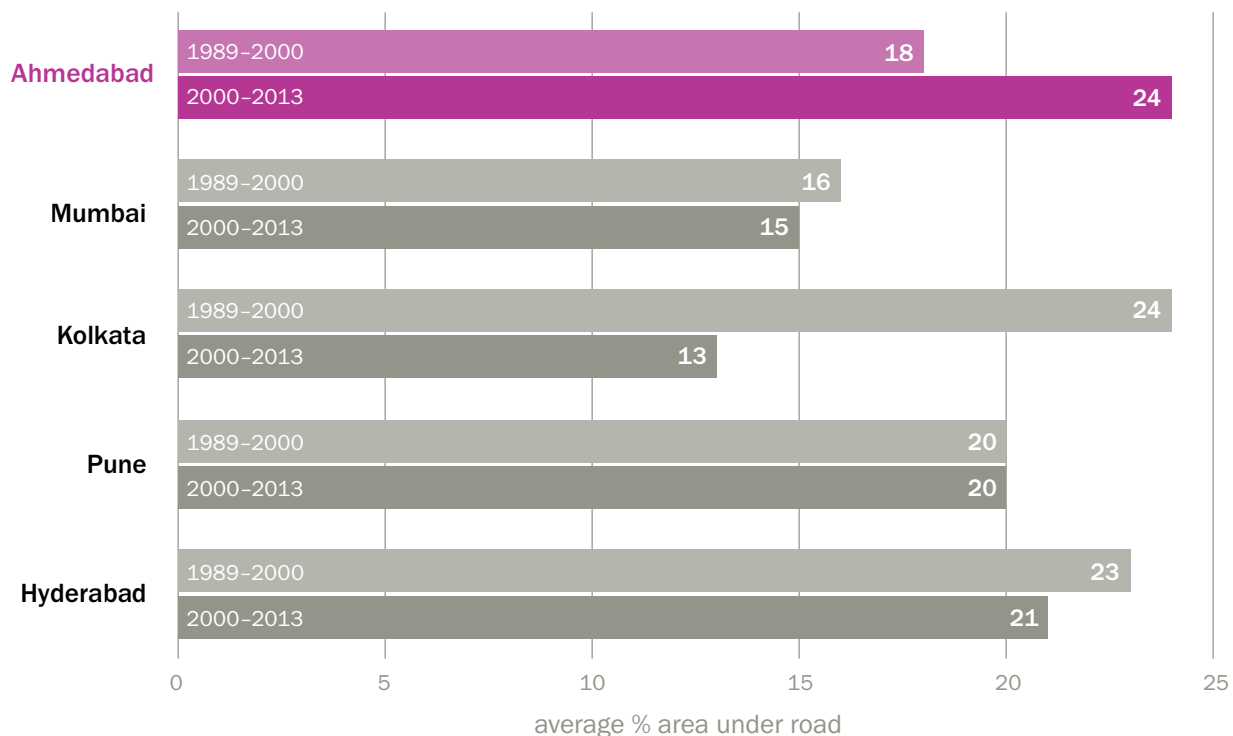
Lands made available through Ahmedabad's TPS mechanism allowed for the construction of about 80,000 dwelling units under various social housing schemes.<sup>28</sup> Of these, 33,000 were constructed under the BSUP program between 2007 and 2012, causing Ahmedabad to rank fifth among Indian cities in terms of the number of BSUP dwelling units constructed. These social housing units have been used to resettle people who were evicted from city-level infrastructure and beautification projects. BSUP housing has been particularly used for existing slum households, whose number has been estimated at about 140,000.<sup>29</sup> These schemes are well distributed spatially in both AUDA and AMC areas (see Figure 5) instead of being concentrated in the city's periphery, as is common in many parts of the world.<sup>30</sup>

## Higher road density

Thanks to the TPS mechanism, Ahmedabad has an excellent road network compared to other Indian cities, with adequate ring and radial roads, river crossings, and a well-defined road

hierarchy. The well-defined and comprehensive network, along with the city's mixed land use development, ensures average trip lengths in Ahmedabad continue to be 7–8 kilometers<sup>31</sup>—relatively short for a city of more than 5 million people. Comparably sized cities, such as Bengaluru, Hyderabad, and Pune, have significantly longer trip lengths.<sup>32</sup> A comparison with four other cities (Mumbai, Kolkata, Pune, and Hyderabad; see Figure 6) reveals that the proportion of area under roads declined in period 2 compared to period 1; this is not the case in Ahmedabad, which has experienced an increase. This is clear evidence of the impact the TPS mechanism has on road density. The decline in road density does not mean there has been no increase in total road areas. From period 1 to period 2, the total road area in the five cities increased at 4.2 percent (Ahmedabad), 3.1 percent (Mumbai), -1.2 percent (Kolkata), 7.6 percent (Pune), and 3.1 percent (Hyderabad) per year.<sup>33</sup> Our case study TPSs—namely, Vejalpur and Vastral—have 27.3 percent and 23.7 percent of their respective areas under roads, closer to the city average shown in Figure 6.

Figure 6 | **Change in average percentage of land covered by roads in Ahmedabad and four other Indian cities (1989–2013)**



Source: Atlas of Urban Expansion, 2016.

## Selling lands for infrastructure financing

One crucial component of the TPS is to create a public land bank to commercially sell land to raise funds for infrastructure and services. It is not mandatory, but a provision in the 1999 amendment to the GTPUD Act makes this option possible. In 2010, about 8 percent of lands were appropriated for this purpose (see Figure 4), which came down to 3.4 percent in 2017. The AUDA had a higher proportion of land for sale (5.7 percent) than the AMC (1.8 percent) in 2017 (see Table 1), primarily because the former still has many large greenfield sites.<sup>34</sup> These lands remain with the planning authority as a “land bank” and are used as collateral for loans. The AUDA used this approach to borrow from the national Housing and Urban Development Corporation to construct infrastructure, since 2002–03.<sup>35</sup> Appropriating lands for sale, according to Surendra Patel, the former chairperson of the AUDA,<sup>36</sup> is akin to paying a betterment charge “in kind.” The AUDA’s Senior Planner said in a 2017 interview, “We have an adequate land bank now.”<sup>37</sup>

## 4. ARE TOWN PLANNING SCHEMES TRANSFORMING AHMEDABAD?

The TPS has acted as a mechanism for transformative change to some extent. The first trigger for this change was the 1999 amendment to the GTPUD Act, which permitted immediate possession of areas demarcated as roads in the draft TPS to enable planned development, and introduced appropriation of lands for sale to raise financing for infrastructure. The second trigger was the infusion of funding through the JNNURM that enabled social housing to be constructed on lands reserved for this purpose. The TPS’s successful role in Ahmedabad’s transformation is also due on the one hand to a built-in negotiation process and on the other to accommodating informality, given that informal settlement dwellers represent a sizeable electorate.

### Key triggers

The transformative change made possible through the TPS mechanism was triggered by one key amendment to the GTPUD Act (see Figure 10) that states, “After the draft scheme was sanctioned by the state government, all lands required by the appropriating authority for the purposes of provision of roads, drainage and sewerage, lighting and water supply (the last three associated with the roads) to vest absolutely in the appropriate authority free from all encumbrances.”<sup>38</sup> The amendment allowed the planning authority to immediately take possession of lands for roads, following negotiations. In contrast to other negotiations, this provision supported the larger purpose of hav-

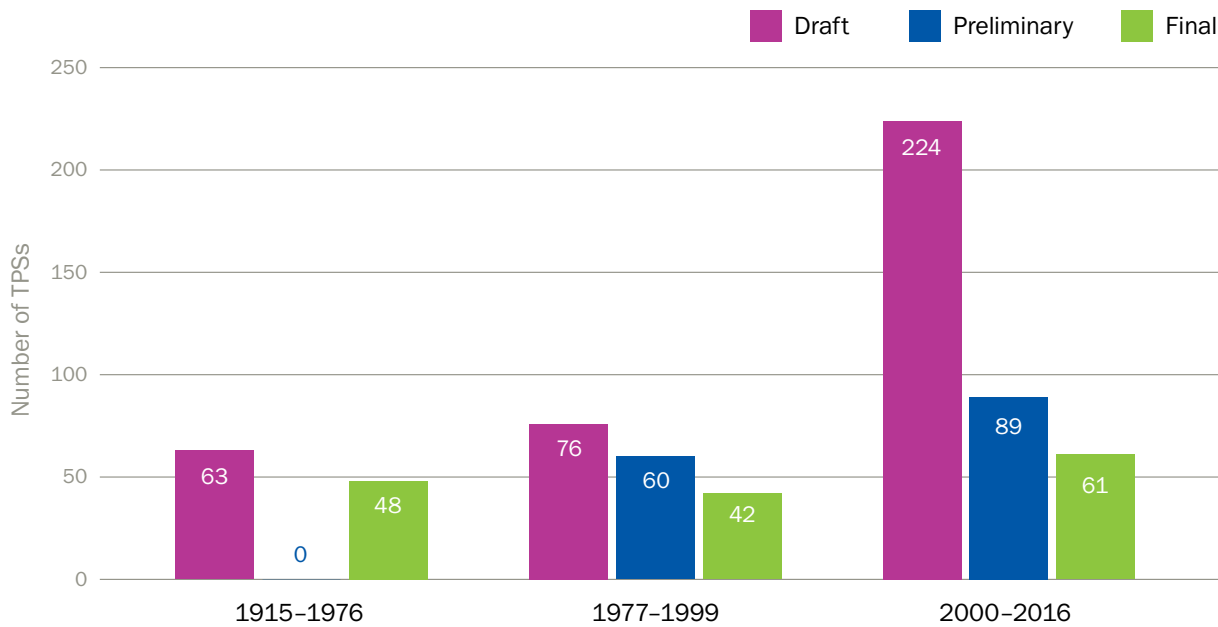
ing equitable access to each plot, and along with it the construction of trunk infrastructure. Prior to this amendment, even if the TPS was prepared, the lands earmarked as under roads remained with the private landowner until the land parcel came up for development permission; the planning authority could only appropriate it at that stage. If all the land parcels along the road did not come up for development at the same time, there was discontinuity in the road network, which inhibited access.

These changes were at the behest of the AUDA’s then-chairperson, a leading politician of the ruling political party at the time and a builder by profession. He told us, “Politicians have an important role in bringing about change.”<sup>39</sup> He made the point that such reforms could not have been introduced by bureaucrats and highlighted the benefits of democracy. After conferring with the Chief Minister of the state, he was able to quickly pass the amendment. The mechanism also worked because, as the former AUDA chairperson said, “In Gujarat, no one opposes appropriation of land to be used for public purposes,”<sup>40</sup> implying that there is consensus among political parties on the efficacy of the mechanism to provide goods such as roads and lands for public purposes, as well as among private landowners and developers, because of the increased land values created by public infrastructure investments.<sup>41</sup> While this statement appears apolitical, the embedded politics reflect a consensus among landowners about a win-win solution for themselves. This also worked because the private landowners alluded to here are perhaps land developers<sup>42</sup> and not farmers who, as we discuss later, have opposed the TPS mechanism.

Another trigger—not for the TPS mechanism but for the overall transformative agenda—was the grant finance available from the national government for social housing and public transport under the JNNURM. These available finances could be deployed because the city had land to offer for the construction of these public amenities.

This 1999 amendment to the GTPUD Act resulted in an enhanced pace of TPS preparation and finalization (see Figure 7). During the 1976–1999 period (23 years), only 24 draft TPSs were prepared; however, during the 2000–2016 period (16 years), 224 draft TPSs were prepared—nine times as many.<sup>43</sup> The amendment assured the planning authorities (the AMC and AUDA) that road spaces would be available and that the haphazard development experienced in some peri-urban areas could be avoided.<sup>44</sup> The amendment concerning appropriation of lands for sale and the creation of a public land bank further incentivized the AMC and AUDA to prepare TPSs; this was especially the case for the AUDA, which has jurisdiction over the peri-urban areas. By 2017,



Figure 7 | **TPSs' progress from draft to final phase (1915–2016)**

Source: Authors' analysis based on TPS data from the TPVD, 2017.

90 percent of the AUDA's area was covered by TPSs.<sup>45</sup> This also indicates the high capacity of Ahmedabad's planning authority to prepare TPSs.

## Finance as an enabling condition

The GTPUD Act amendment that allowed appropriating lands for commercial sale made it possible to generate financing through the TPS mechanism, while the availability of finance from the national government enabled appropriated lands to be used for the purposes stated in the TPSs. The construction of numerous social housing units, as illustrated earlier, is a clear outcome of this enabling condition.

## Successful negotiations

Appropriating private land for public purposes has the potential to create conflict. However, the embedded mechanism that requires the TPO to negotiate with landowners (as explained earlier during the discussion of the TPS process) has helped reduce such conflicts. A good example of how the TPS's negotiation potential was used is the construction of the 76-km-long Sardar Patel Ring Road around Ahmedabad, built between 2002 and 2006.<sup>46</sup> Lands were taken from farmers through direct land acquisition (13 km of the road) and through the TPS mechanism

(63 km of the road).<sup>47</sup> In all, the road route traveled through 47 TPSs involving more than 91 sq km.<sup>48</sup> The ring road accounts for 5 percent of the total TPS area.<sup>49</sup> For each parcel of land, the then-chairperson of the AUDA negotiated with the landowners, and said of the experience:

"I met all the landowners personally in their homes and not in AUDA, in the evening when they had time to discuss. I explained [to] them the benefits of a road, stating if there is development then your development will also take place. If you say no, I will go away, but, after two years you will anyway have to part with the land as the law requires that you have to surrender legislated proportion to AUDA."<sup>50</sup>

However, this remains a single example of such large-scale negotiations for laying an arterial road network. Such a firm approach is embedded in the concept of "eminent domain" and hence to some extent can be construed as authoritarian. At the same time, this action was in service of a larger public good: laying an arterial road that would enhance accessibility in the city. The key issue of equity in private land regimes is the planning authority's ability to procure lands for public goods such as roads and basic social and physical infrastructure. The former AUDA chairperson's ability to negotiate with the private landowners needs to be understood in this light.

## Accommodating preexisting development

Another important issue around which TPS negotiations take place is that of existing developments on draft TPS sites, including informal developments. When such developments already exist, the TPSs do not demolish them. Two TPOs we interviewed stated, “Even if there are informal developments on some private plots, it is a matter between the landowner and the inhabitants; we do not interfere. This applies to informal developments”<sup>51</sup> as well. One of them said, “We do not disturb the existing occupants.”<sup>52</sup> If the informal developments were on lands reserved for social amenities or social housing, the TPOs recommend canceling the reservations; or, the planning authority could take possession of the land parcel and reserve it for social housing.<sup>53</sup> However, if informal encroachments existed on land owned by the planning authority, the authority may consider removing them and providing alternative accommodations. This flexibility has helped minimize conflicts with the residents of the informal sector. Informal developments may be spared from removal, but this does not automatically mean that facilities in such developments will be provided, or even that residents’ land tenure will be legalized.

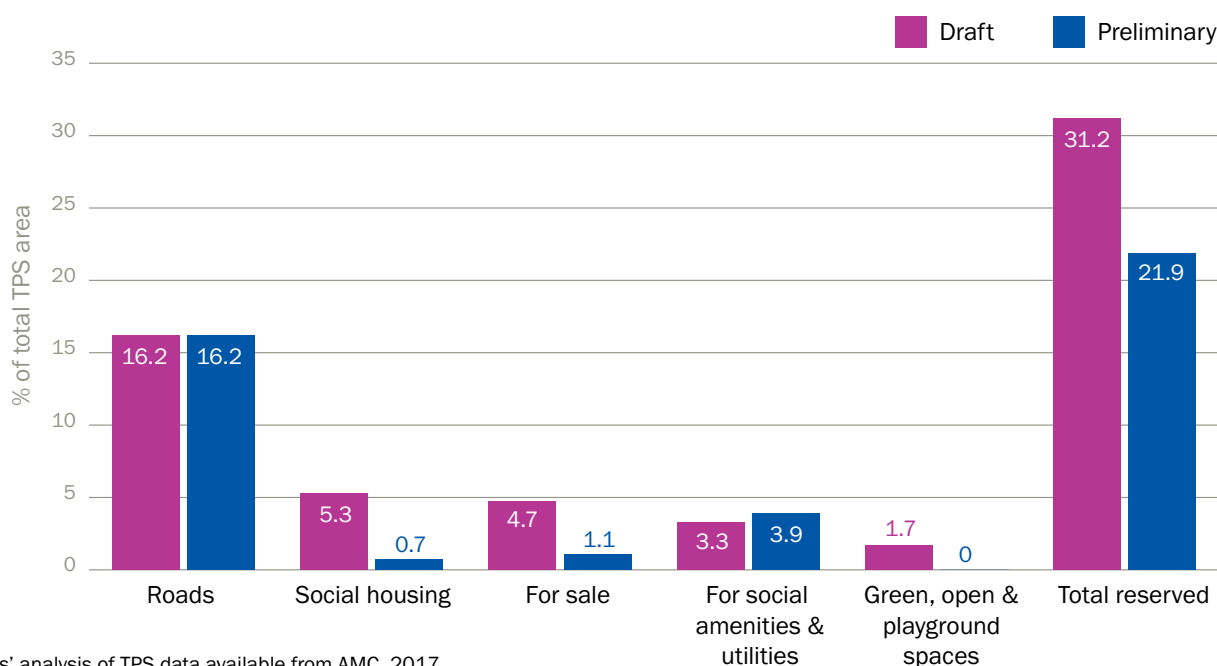
A good example of such accommodative implementation is the TPS of the Danilimda area. The proportion of land reserved for various purposes was reduced to 21.9 percent from 31.2 percent

(see Figure 8) to adjust existing developments, which happen to be informal settlements. The Danilimda TPS is part of a very large informal settlement called the Bombay Hotel area,<sup>54</sup> which experienced rapid extensive development before and during draft TPS preparation. When the preliminary TPS was being framed in 2013, the residents protested, fearing demolition. The TPO revised the draft TPS and removed most of the reservations, as shown in Figure 8. One of the road’s alignments was also changed to accommodate existing developments, which ended the protests.<sup>55</sup> Subsequently, despite its informal character, the AMC has extended the area’s water supply and sewerage network. However, the green and open space requirements, as well as road widths, have been compromised. In such situations, the decision favored reducing demolitions instead of provisioning certain amenities at normative levels. Any planning mechanism has to be sensitive to such difficult choices and make decisions that work best at that point in time.

## A practical approach to service provision

In the Danilimda TPS, which is a large informal development, the land reservations were removed and hence public lands were unavailable for basic utilities. However, the AMC took a practical approach. It purchased required lands from other government departments, such as the Police Commissionerate, which is

Figure 8 | **Changes in land reservations in the Danilimda TPS, Ahmedabad (% of total TPS area)**



Source: Authors’ analysis of TPS data available from AMC, 2017.

under the home department of the state government for the tubewell station,<sup>56</sup> and from the district collector for the water pumping station.<sup>57</sup> The AMC purchased these lands at 25 percent of the *jantri* rates. The AMC's engineer told us, "We have to provide water to all people on humanitarian grounds. If we look at everything from the legalistic point of view, we cannot do any welfare work in the AMC."<sup>58</sup>

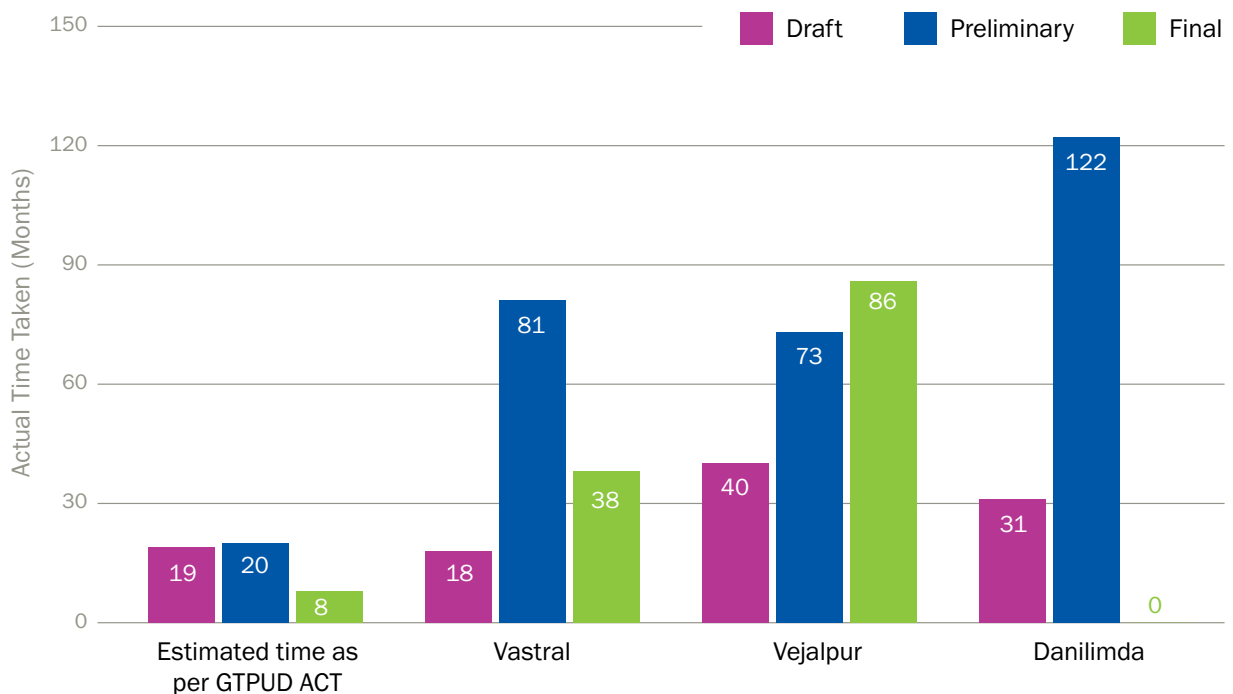
## 5. LIMITATIONS OF THE TOWN PLANNING SCHEME AND INHIBITING CONDITIONS

The TPS mechanism has limitations that largely relate to its planning, management, and governance. Time delays include preparing and implementing a TPS, the inability to obtain public lands given the informal nature of development (common in Indian cities), and the issue of lands that are not utilized for some of the public purposes stated, largely due to a lack of financing. Governance failures that inhibit the process include the need for centralized approvals and the involvement of multiple agencies, the lack of broad participation, and farmers' resistance to surrendering their lands in the greenfield sites.

### Time delays

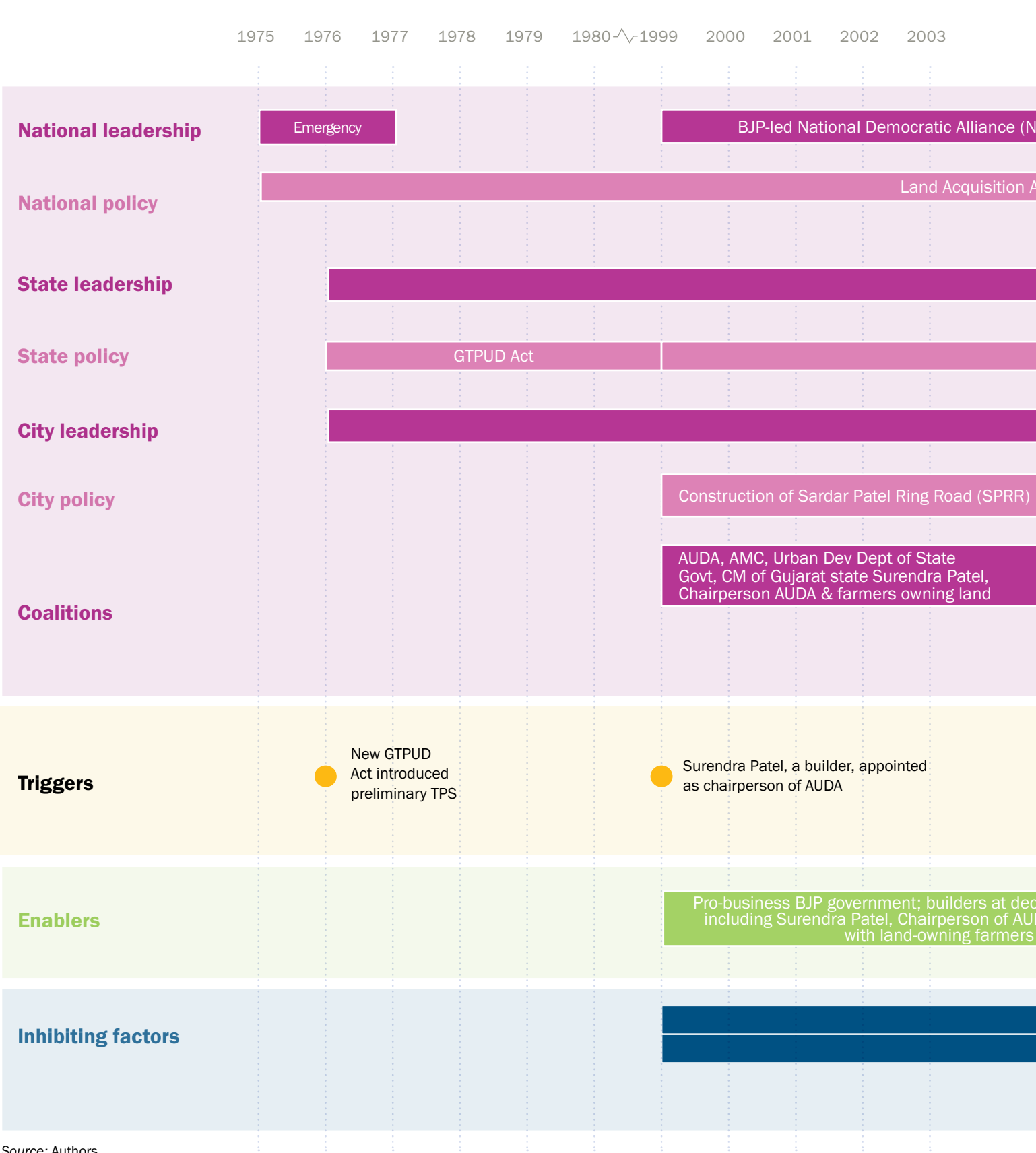
In practice, there have been significant time delays due to lack of TPVD staff, and not enough TPOs have been appointed. The TPOs therefore have been forced to divide their attention between multiple TPSs; three TPOs we interviewed during September and October 2017 had between 12 and 25 TPSs.<sup>59</sup> Thus, the time taken to finalize the preliminary stage of a TPS is far longer than stipulated. Figure 7 indicates that while 224 draft TPS were prepared during the 2000–16 period, only 89 reached preliminary TPS stage and only 61 reached the final stage; that is, only 40 percent of TPSs in this period were implemented.<sup>60</sup> Of the three randomly selected TPSs, we find that it took 11 years and 15 years, respectively, to finalize the Vastral and Vejalpur TPSs, while the Danilimda TPS has spent 13 years in the draft and preparation stages and has not yet reached the final stage (see Figure 9).<sup>61</sup> Time delays have led to physical developments, either through obtaining formal or informal permissions, which then makes it difficult to appropriate lands for public purposes and renders the mechanism partially unfruitful.

Figure 9 | Timelines for three randomly selected TPSs



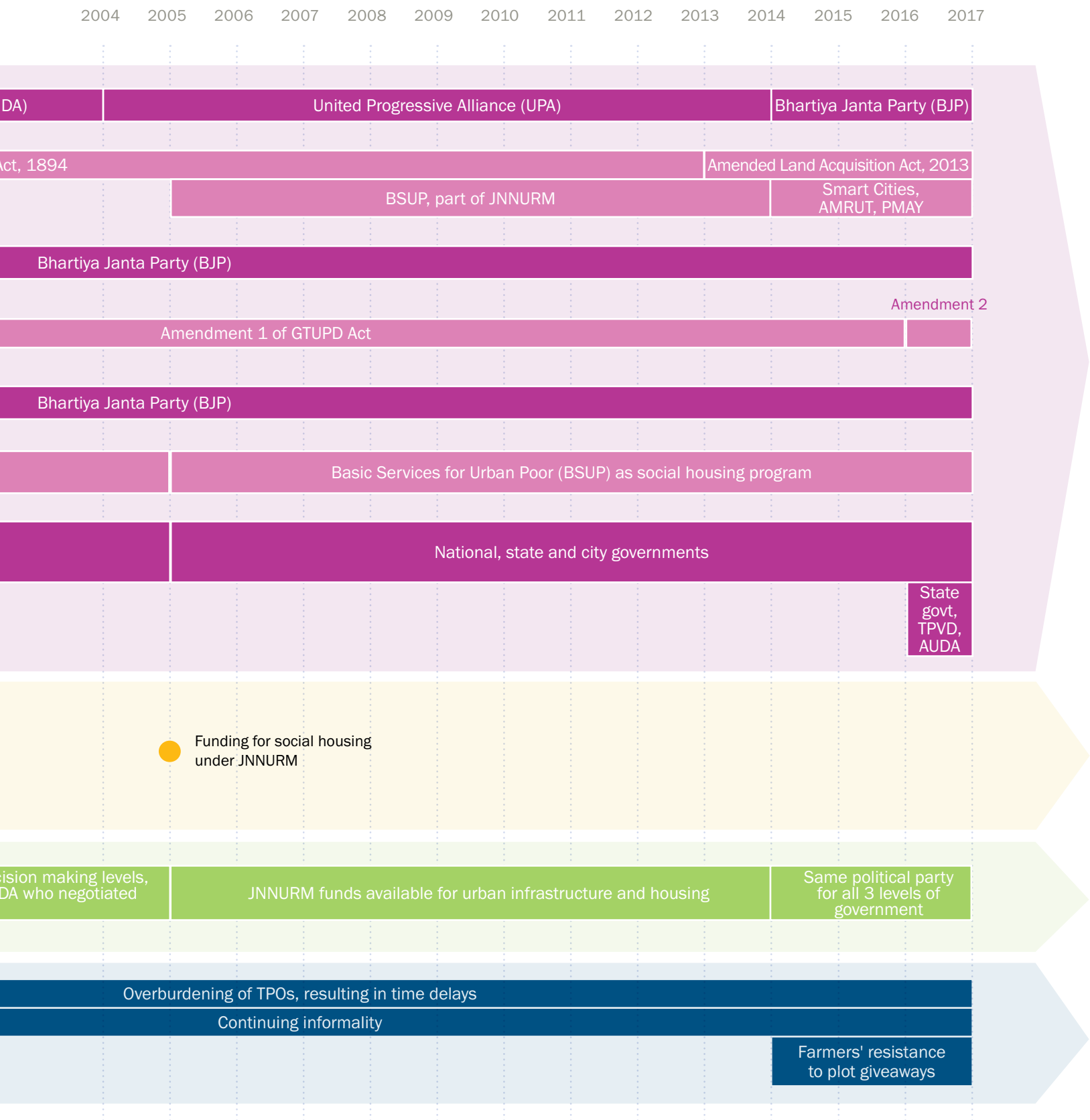
Source: Authors' analysis of TPS data from the TPVD office, Gandhinagar, 2017.

Figure 10 | Timeline of the Town Planning Scheme in Ahmedabad



Source: Authors.





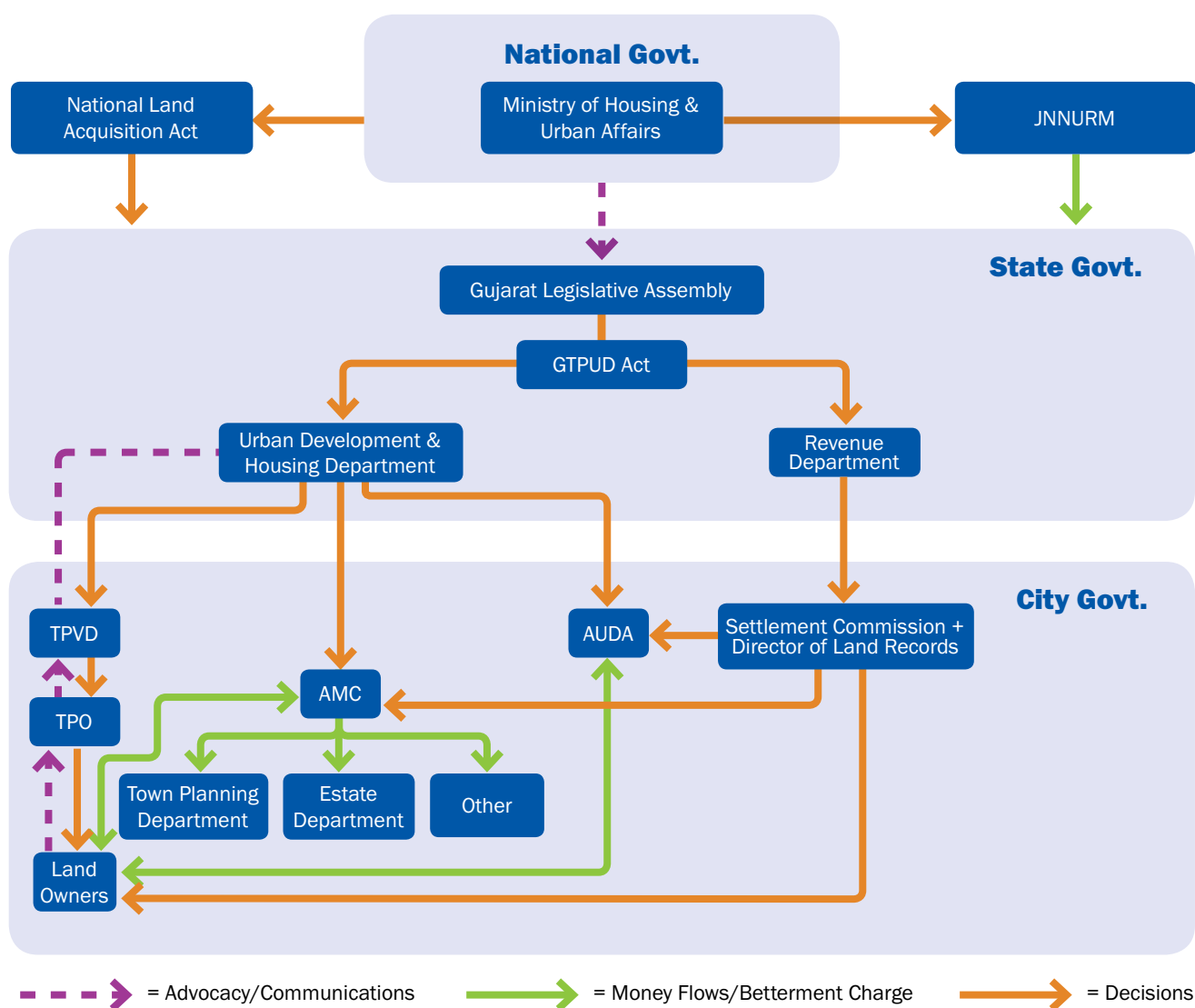
## Inability to obtain lands for public purposes in informal situations

As previously mentioned, in Danilimda, the TPO minimized the need for demolition. This TPS will not have reservations for social amenities. In fact, in all the TPSs in the eastern periphery of the city, where large areas are under informal settlements with high density, it has not been possible to appropriate land for public purposes except to take away lands for roads. Said one TPO, “All the TPSs in this belt are problematic as they already have dense development and we cannot appropriate any lands now.”<sup>62</sup>

## Amenities not developed on reserved plots

Reserving land does not guarantee that the plot will be used for the purpose stated. Funds are required to develop the amenities on the reserved plots. The funds for constructing the amenity—say, a school or health center—are from the AMC budget. Outside the AMC, (i.e., in AUDA areas), other local governments fund the amenities if their budgets have the provision to do so. Water supply, sanitation, and housing are constructed using funds either from land sales or national-level programs, as mentioned. Also, laying infrastructure often takes a long time. For example, in one TPS in north Ahmedabad (Hansol TPS), roads had not been built by January 2010 even though the TPS was finalized in September 2004.<sup>63</sup>

Figure 11 | Landscape of public sector agents in Ahmedabad



## Centralized process and multiple agency involvement

The draft, preliminary, and final TPSs are all approved by the Minister of the Urban Development and Housing Department of the state government (see Figure 11). This is another reason for delays in TPS finalization. One expert said, “In the current situation no one wants to take responsibility and hence the buck stops at the level of the Minister.”<sup>64</sup> According to a town planning expert and a developer, the process has been further centralized by the 2017 amendment to the GTPUD Act: The TPOs’ powers to change plot location and land uses after the state government sanctions the draft TPS have been curtailed by a 2017 amendment to the GTPUD Act.<sup>65</sup> The reason for the amendment, according to government planners, is allegations of corruption in such discretionary decision-making,<sup>66</sup> an allegation also stated in the academic literature.<sup>67</sup>

## Lack of broad participation

The claim that the TPS mechanism is participatory has also been contested.<sup>68</sup> Only landowners are consulted, not the existing occupants of the land, whether they are tenants or people who informally occupy these lands. Thus, the claim about this process being participatory and democratic is limited to landowners and not the other stakeholders.

## Farmers’ resistance to TPSs in greenfield sites

Farmers with lands outside of the urban extension areas have resisted the TPS mechanism. For example, farmers protested the TPS of Ghuma Village, which was subsequently challenged in Gujarat State High Court.<sup>69</sup> Similarly, the farmers of 68 villages of Ahmedabad and Gandhinagar districts have demanded withdrawal of a notification declaring their village lands (a total area of 625 sq km) to be part of the AUDA.<sup>70</sup> If village lands were part of the AUDA, the preparation of TPSs would lead to 40–50 percent of their lands being appropriated. Worse, because these villages are away from the city’s periphery, actual development would likely not occur for many years. The farmers argued that they would be left without any means of livelihood if the TPS process were implemented.<sup>71</sup> Thus, the transformative potential of the TPS is limited to the immediate periphery of Ahmedabad City, whereas the AUDA, in its ambitious pursuit of planned development in its whole region, has proceeded to prepare TPSs in its entire 1,866 sq km area.<sup>72</sup> The potential benefits of TPSs in such a vast region are unclear.

## CONCLUSIONS

Obtaining land for planned urbanization hinges on whether land is available to the public planning authority that is responsible for providing roads and other core infrastructure and services, such as trunk water and sewerage lines, public amenities such as green spaces, and education and health facilities. Equitable urbanization necessitates the redistribution of urban land by ensuring its availability for social housing. Different approaches to generating land for urban development in the peri-urban areas—also called urban extension areas—have been tried in different locations in India, with mixed success.<sup>73</sup> Land for urbanization is not readily available because of the need to appropriate it from farmers whose livelihoods depend on the land. The TPS mechanism in Ahmedabad is widely considered as relatively more successful in these endeavors because it produces more equitable outcomes. The TPSs have been prepared for all of AUDA’s developable area,<sup>74</sup> which makes up 42.8 percent of the AUDA area of 1,866 sq km, while the remaining 57.2 percent is the agricultural zone.<sup>75</sup>

Ahmedabad has effectively implemented the TPS mechanism because the city has been able to appropriate lands from private landowners and allocate them for public and equity purposes; this process has been helped by undertaking negotiations with landowners to readjust plot boundaries and accommodating existing informal settlements. For example, when the Danilimda TPS was being finalized at the preliminary stage (i.e., after the draft scheme was prepared and the TPO had pursued hearings with landowners and site inspection), major differences emerged between the draft plan and the reality on the ground. We have heard from the TPOs, as well as one AMC engineer that in finalizing one of the TPSs for the Bombay Hotel area, the understanding was “not to demolish housing of the poor; but to [adopt a] humanitarian approach.”<sup>76</sup> The TPS thus allows for substantive planning but remains a flexible and accommodating tool that is in tune with the concepts of accommodative policymaking<sup>77</sup> and “flexible planning.”<sup>78</sup>

The question, then, is why Ahmedabad has been successful when this mechanism, although available in other states such as Maharashtra, has not had similar outcomes. Ahmedabad is known for early philanthropic capitalism, an example of which is when the city’s industrialists invited Mahatma Gandhi to start the nationalist independence movement from the city.<sup>79</sup> It has also been the center of negotiated pro-poor urban development projects such as the Slum Networking Program (SNP). The city is also home to India’s longest BRTS, which is an attempt

to improve public transit for all, though with limited success (as neither the rich nor the poor used the system).<sup>80</sup> Although the city has a long history of communal violence,<sup>81</sup> the large informal settlements in the Bombay Hotel area, which have a significant Muslim population, have gained visibility and hence political importance, leading to a negotiated accommodation.<sup>82</sup> So, the canvas of urban planning is neither black (demolishing the informal settlement) nor white (not touching the informal settlement), but somewhere in the middle, in sync with the ethos of the city.

The TPS mechanism alone would not have contributed to the city’s transformation. Financing from the national government has also contributed to the development of social amenities. Furthermore, the city’s desire to extend basic services to the entire population, including the informal settlements and also those displaced due to communal riots, has prevented a mechanical application of the TPS. If the TPS mechanism is strictly implemented, it can also result in the eviction of those who live in informally constructed dwellings. This is not to say that no evictions have occurred in Ahmedabad City; however, a significant proportion of those evicted have been resettled.<sup>83</sup> Nonetheless, the TPS mechanism has played an important role in the city’s transformation, particularly when it has been used judiciously and flexibly.

This case study also shows that no planning intervention, even with the best available land management tools, can ensure equitable outcomes under all conditions. Despite the benefits of the TPS mechanism, it has fallen short of addressing the structural inequalities in the city in terms of segmentation along class, caste, and religious lines. It has not always provided infrastructure and amenities in areas with large informal settlements. Nor has it completely averted the process of pushing low-income groups out to cheaper land parcels on the urban periphery. The TPS mechanism is perhaps not meant to fully address limitations imposed on planned urbanization due to existing structural inequalities. This mechanism has also not worked in complete greenfield sites, nor has it worked in fully developed (dense brownfield) sites. It has worked well in greenfield urban extension areas—i.e., areas in the city’s immediate periphery that see appreciation in land values in the short term. Ahmedabad’s transformative change thus has its limitations. The TPS mechanism, like the city’s development path, has both inclusive as well as exclusive aspects, allowing stakeholders to negotiate solutions that are middle of the road and perhaps more achievable.

Through this work, we find that the TPS mechanism can be made more equitable and effective by gathering robust land ownership data, conducting detailed surveys of existing locations before preparing draft plans, and streamlining approval processes to reduce delays in implementation. Ahmedabad’s experience with this mechanism offers important lessons for other Indian cities striving to acquire land for impending urban growth in a practical and equitable manner, albeit with the caution that equitable outcomes are triggered by multiple development processes and not just one mechanism.

## APPENDIX A. DESCRIPTION OF INTERVIEWEES

INTERVIEW NUMBER	DATE	POSITION/TITLE
1	August 11, 2017	Deputy Town Planner, AUDA
2	August 28, 2017	Managing Director, Savvy Infrastructures Ltd.
3	August 27, 2017	Founder Director & Group Chairman, Sun Builders Pvt. Ltd.
4	August 25, 2017	Associate Director—Planning, HCP Design, Planning and Management Pvt. Ltd.
5	August 23, 2017	Town Planner (Saurashtra-Katchch Region), TPVD Gujarat
6	August 23, 2017	Chief City Planner, AMC
7	September 29, 2017	Ex-Chairman, AUDA
8	October 10, 2017	TPO, TPVD Gujarat
9	September 25, 2017	TPO, TPVD Gujarat
10	October 11, 2017	TPO, TPVD Gujarat
11	August 23, 2017	Estate Officer, AMC
12	October 16, 2017	Engineer, South Zone, AMC



## ENDNOTES

1. Nair, 2016.
2. Sankhe et al., 2010; Tiwari et al., 2016.
3. Census of India, 2011.
4. AUDA, n.d.
5. The AUA is defined by the Registrar General of Census, while the AMC boundary is decided by the Urban Development and Urban Housing Department of the Government of Gujarat.
6. The local governments in Gujarat state have two notional wings, one that consists of elected councilors and the other composed of state government appointees. The Municipal Commissioner heads the latter, and the mayor heads the former. However, the Municipal Commissioner retains budgeting and policymaking powers.
7. Mahadevia, 2011.
8. Data from BSUP, extracted from the Government of India (2016).
9. Beard et al., 2016.
10. Beard et al., 2016.
11. The price is determined by the state government as the expected base price for any land sale for the purpose of calculating stamp duty. These are published by the state government's revenue department.
12. Mathews et al., 2018.
13. CII and KPMG, 2014.
14. Gujarat was part of Bombay state until 1960; hence, Ahmedabad followed Bombay state legislation. Gujarat state was formed in 1960, and then the state enacted its own legislation in 1976 known as the Gujarat Town Planning and Urban Development Act.
15. Ballaney, 2008: 10.
16. Ballaney, 2013: 5.
17. Ballaney, 2008: 10.
18. A total station is an electronic theodolite used for surveying and building construction; it measures distance, slope, and dimension.
19. Interview 8.
20. Interviews 9 and 10.
21. Interview 10.
22. Ballaney, 2008.
23. The document does not state the total TPSs included in the compilation. Looking at Table 5.1.3 (Ballaney, 2013: 108), we can surmise that the data is for 94 TPSs, 66 sanctioned final TPSs, 7 final TPSs prepared, 8 TPSs at sanctioned preliminary stage, and 13 TPSs at preliminary stage.
24. Ballaney, 2013: 117.
25. Ballaney, 2013: 117.
26. The data in Table 1 is an aggregation of the data from the 147 TPSs and covers an area of 192 sq km. This data is available on the TPVD website (Government of Gujarat, 2016). This data set did not contain area under roads. The data is of actualization of reservations—that is, the lands that could be reserved for various public purposes.
27. Government of Gujarat, 2016.
28. Data collected from the AMC's housing department in 2017.
29. AMC, 2014; Government of Gujarat, 2017.
30. King et al., 2017.
31. John, 2018.
32. Pai, 2008.
33. Data from Atlas of Urban Expansion (2016).
34. Government of Gujarat, 2016.
35. Mahadevia and Brar, 2008.
36. Surendra Patel was AUDA chairperson 1996–1997 and 1998–2005.
37. Interviews 1 and 6.
38. *Gujarat Government Gazette—Extraordinary*, 1999.
39. Interview 7.
40. The former chairperson of AUDA alluded to a lack of opposition to TPS as consensus among all political parties in the state on this mechanism. However, at the same time, it must be known that Gujarat has had single-party rule since 1995 with very weak political opposition.
41. Interview 7.
42. Claimed so by Deuskar, 2011.
43. Authors' analysis based on original data from the TPVD, 2017.
44. Ballaney, 2013.
45. Interview 1.
46. Ballaney, 2013: 120.
47. Ballaney, 2013: 121.
48. Ballaney, 2013: 121.
49. Ballaney, 2013.
50. Interview 7.
51. Interviews 8 and 9.
52. Interview 8.
53. As per a private developer undertaking social housing under the current national housing program known as Prime Minister's Awas Yojana (PMAY)—Urban.
54. For a description and historical development of Danilimda, see Desai et al., 2016.
55. For a description and historical development of Danilimda, see Desai et al., 2016.
56. Tubewells as deep as 200 meters are dug to extract groundwater for local supply. A tubewell station is where the pumpset to extract water is installed.
57. Districts are an administrative unit below state and are the third tier of administration. Districts are headed by a collector, who is an officer of the Indian Administrative Services (IAS) selected through a national level examination.
58. Interview 12.
59. Interviews 8, 9, and 10.
60. Authors' analysis based on original data from the TPVD, 2017.
61. Authors' analysis of TPS data from the TPVD office, Gandhinagar, 2017.
62. Interview 10.
63. Deuskar, 2011.
64. Interview 4.
65. Interviews 3 and 4.
66. Interview 1.
67. Sanyal and Deuskar, 2012.

68. Deuskar, 2011.
69. The High Court is the highest judicial body of an Indian state. Above it is the Supreme Court of India and below it are the lower order courts; Deuskar, 2011.
70. Counterview, 2017.
71. Counterview, 2017.
72. AUDA, n.d.: 10.
73. Mathews et al., 2018.
74. Interview 1.
75. AUDA, n.d.: 18.
76. Interview 12.
77. Mahadevia, 2011.
78. Gururani, 2013.
79. Sopdek, 2011.
80. Mahadevia et al., 2013.
81. Varshney, 2002.
82. Desai et al., 2016.
83. Mahadevia, 2014: 11.

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