

An alternative smart paradigm

Towards integrating informality in the smart city model in an Indian context

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Board of Examiners Delegate: Ir. Herman de Wolff

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MSc Urbanism
Delft University of Technology



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Problem Premise - Smart City and Informality

Approach definition

Case Study

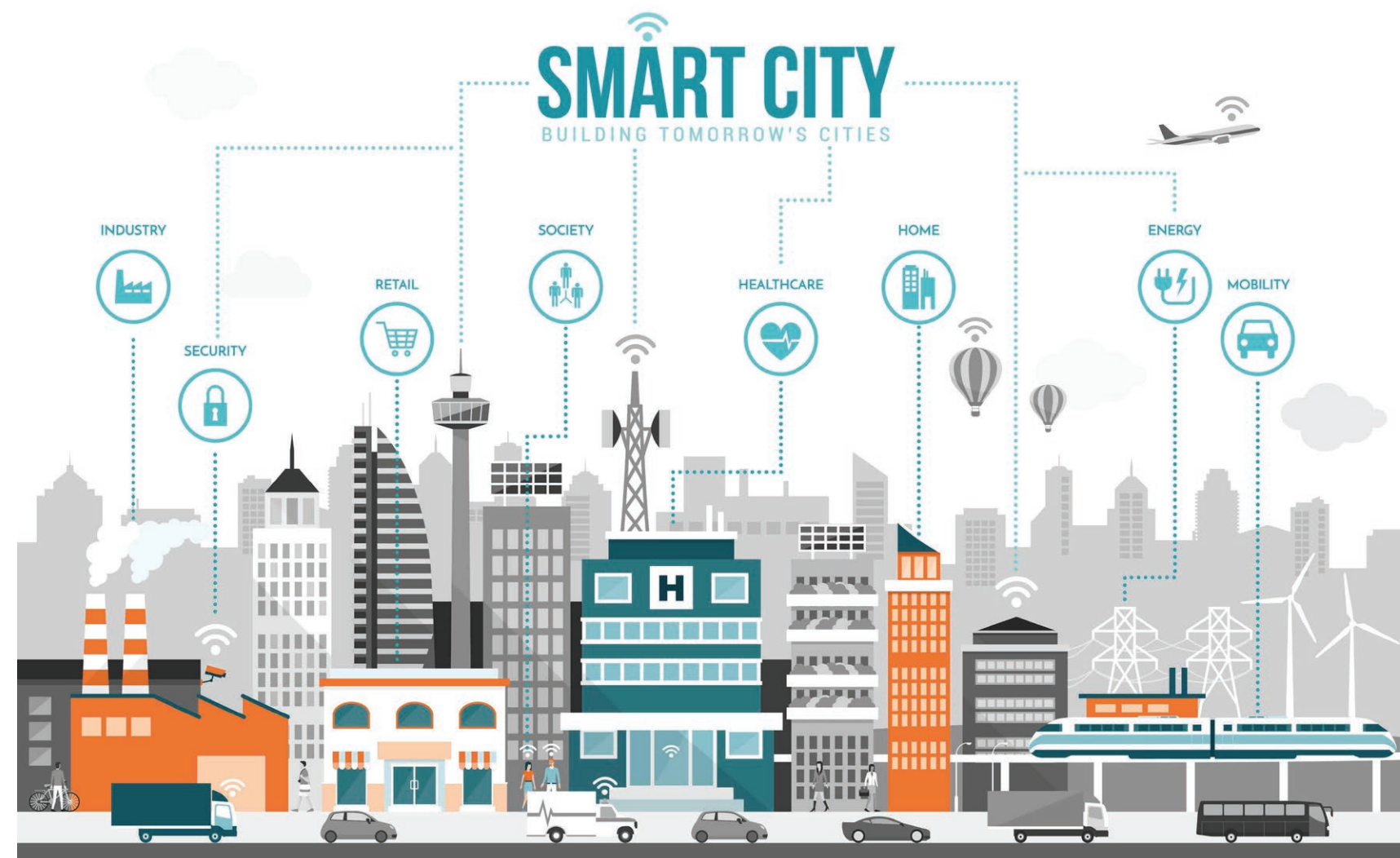
Strategic Framework

Conclusion and Recommendation

Smart City

Definition: *A smart city is a place where traditional networks and services are made more efficient with the use of digital solutions for the benefit of its inhabitants and business.*

Source: European Commission



Source: <https://www.arcweb.com/industries/smart-cities>

Smart City Mission in India



Source: Maps of India

Why? Growing ambition and an economic agenda

 The Economic Times

India to be a \$30 trillion economy by 2050: Gautam Adani

India's demographic dividend which will carry it well beyond 2050, will put us on track to becoming a \$28-30 trillion-dollar economy by 2050...

5 days ago



Smart City Mission in India



Source: Maps of India

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5 days ago




What? Building infrastructure

FE The Financial Express

India's first Integrated Smart City launched in Tamil Nadu with over 150 world-class amenities

On Wednesday, a real estate developer- G Square, launched Tamil Nadu's first Integrated Smart City in Coimbatore spread across 120.7 acres.

4 weeks ago



Smart City Mission in India



Source: Maps of India

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4 weeks ago



How? Centralized development model

BS Business Standard

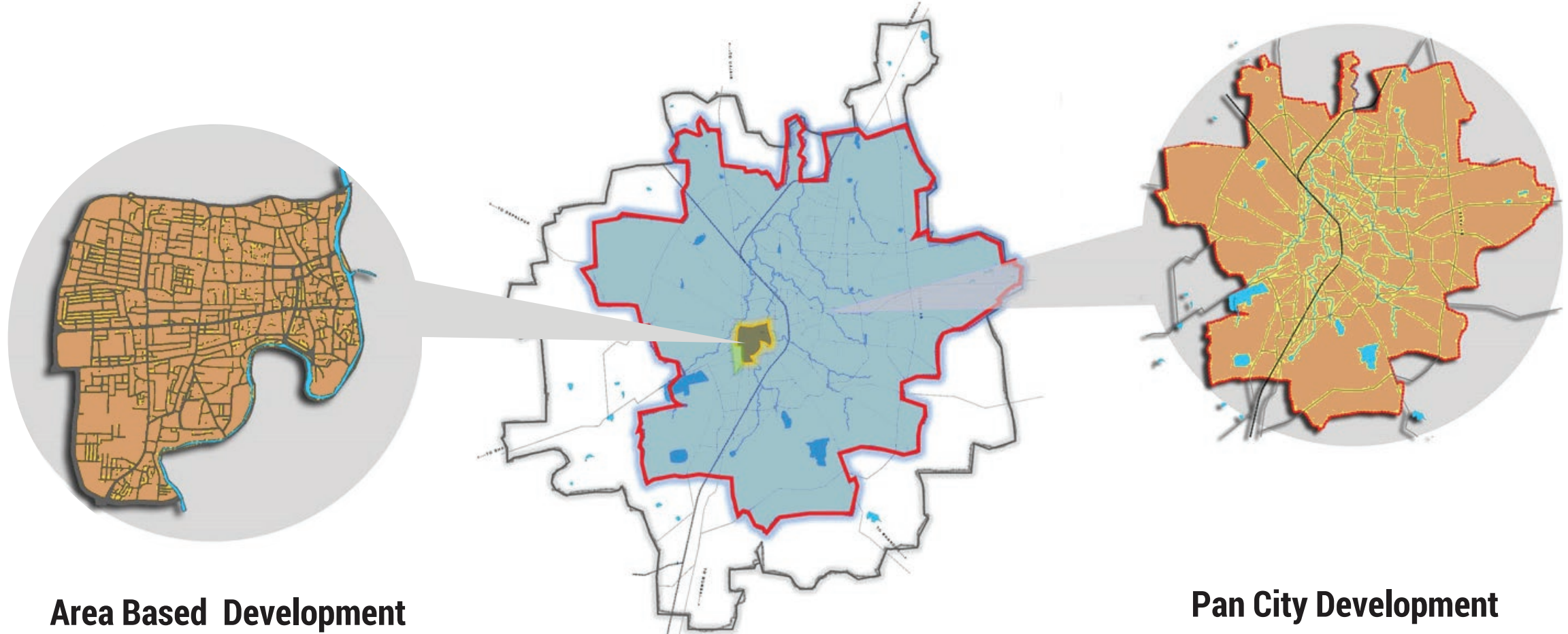
All 100 smart cities to get integrated command-control centre by Aug 15

Since the launch of the Mission, a total of Rs 27,234 crores have been released by the Government of India to 100 cities under the Mission.

1 week ago



Smart City: Features



Source: <http://www.imcindore.org>

Funding	Area Allocation
80%	5%



Redevelopment



Retrofitting



Greenfield

Focused solutions

Funding	Area Allocation
20%	95%



E-Governance



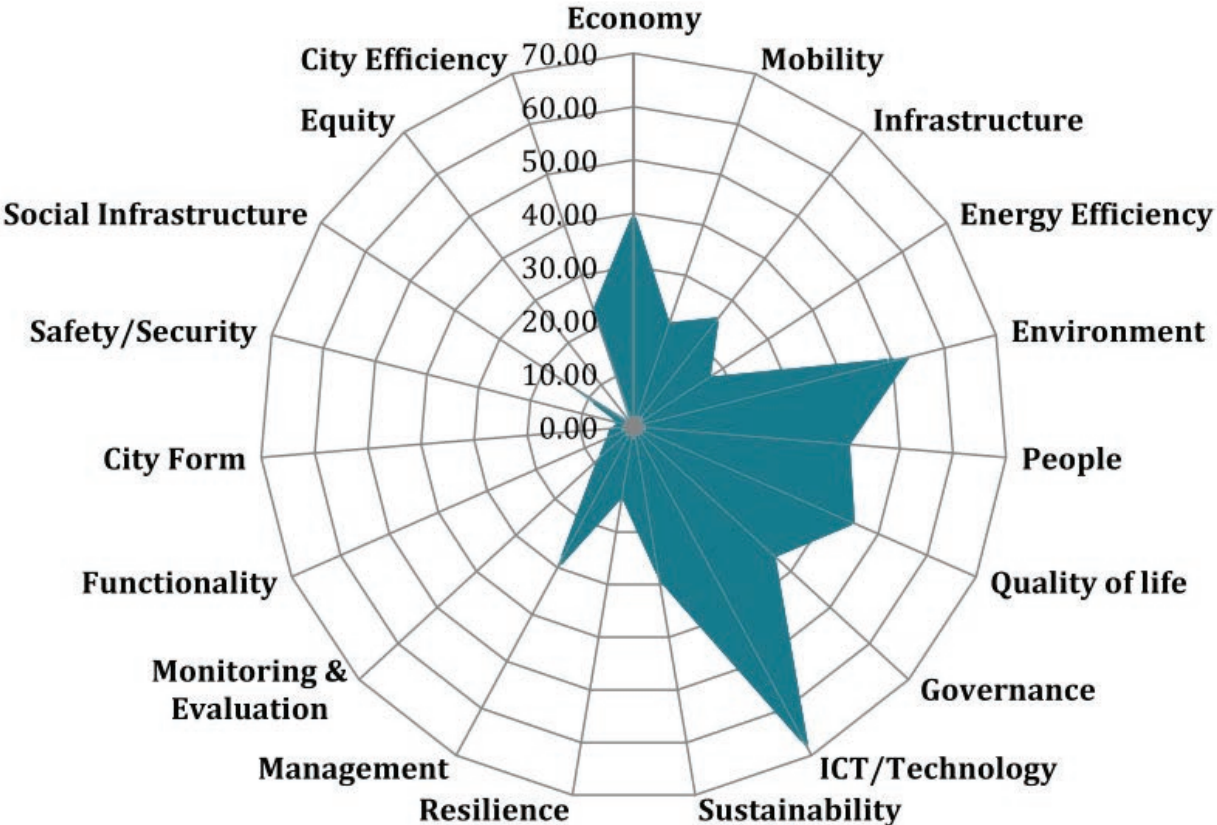
Urban Mobility



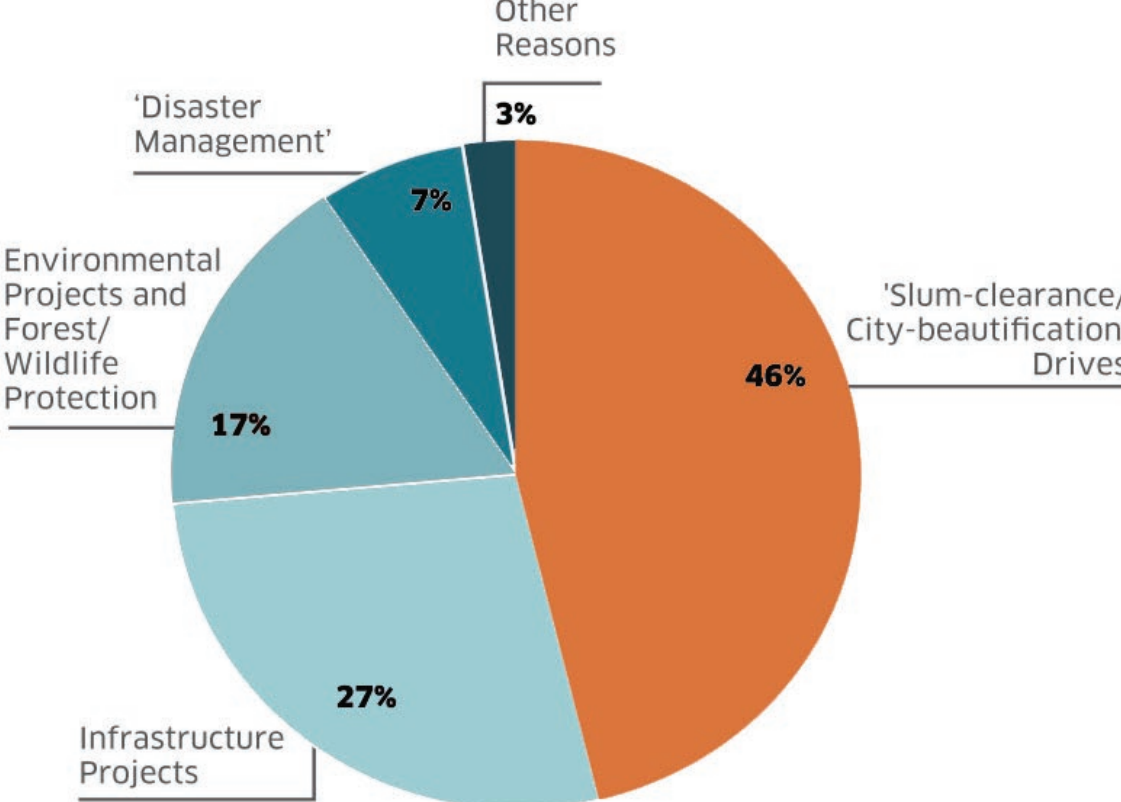
Energy Dev.

City-wide smart solutions

Smart City Limitations



Definitions of Smart City in Literature as a Combination of Various Aspects
 Source: Bhattacharya et al., 2015



Reasons for Forced Eviction: 2017, 2018, 2019
 Source: Housing and Land Rights Network, 2019

Smart cities: Who are they actually for?

Aimed at ending poverty, smart city project ends up hurting the poor itself

Globally, one in eight people live in slums where they face issues of durable housing, access to safe drinking water and toilets. In India, one in every six city residents lives in a slum

Rush for Indian smart cities 'ignoring poor and vulnerable'

14 Jun 2017
Joseph Flaig



Poor people and minorities risk losing out during India's Smart City Mission, says the report (Credit: iStock)

'No place for the poor' in India's Smart Cities, campaigners say

By Rina Chandran, Thomson Reuters Foundation

3 MIN READ



Wi-Fi but no water: Can smart tech help a city's poor?

By Sophie Davies, Thomson Reuters Foundation

6 MIN READ



Are smart cities excluding marginalized groups?

By Emma Smith // 26 February 2020

Urban Development | Innovation & ICT | Social/Inclusive Development | UN-Habitat



A laborer at work in the smart city of Gandhinagar, India. Photo by: REUTERS / Amit Dave

News articles questioning Smart City Mission
Source: Thomas Reuters Foundation

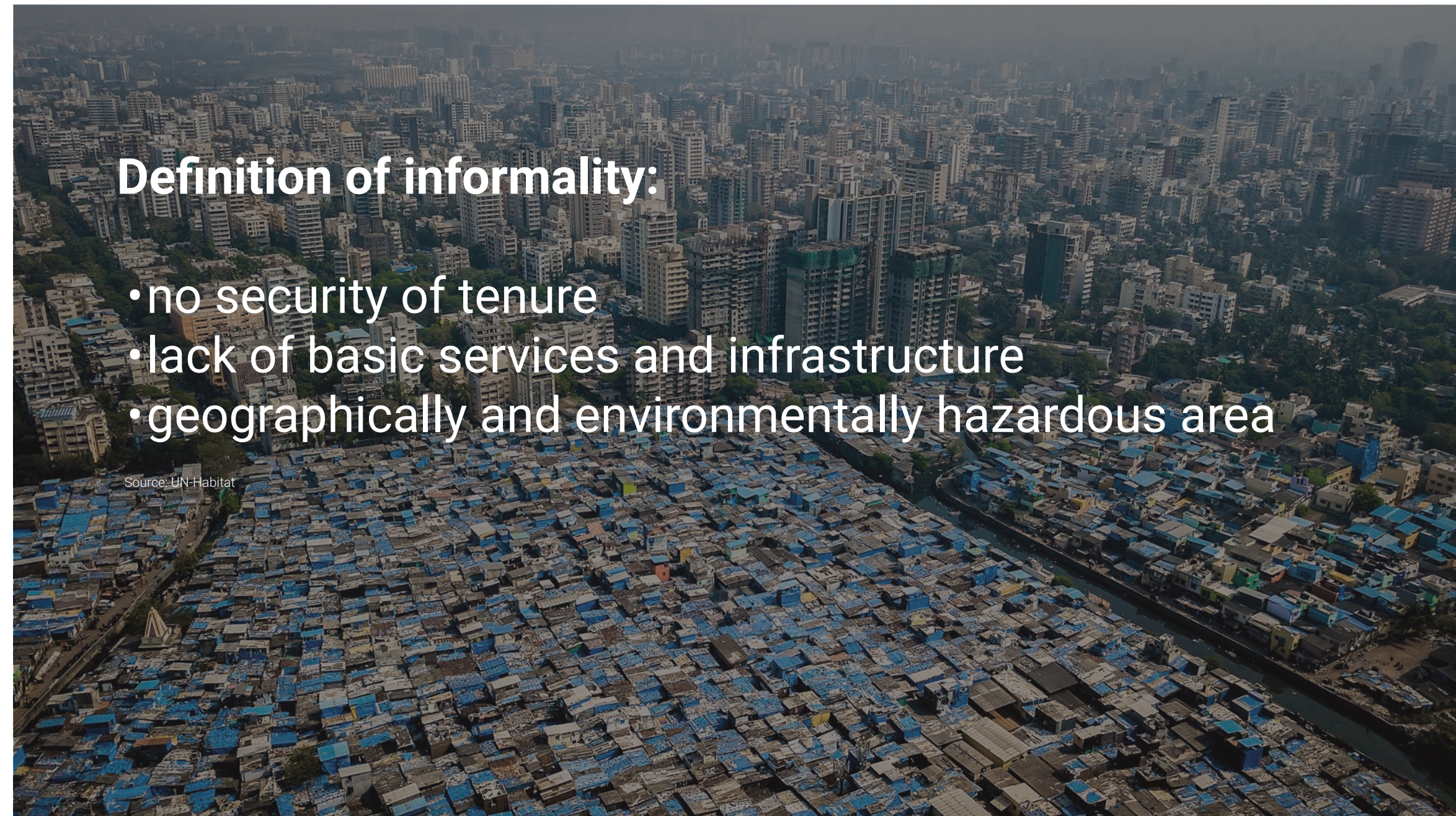
Informal Urbanization



Aerial view of Mumbai

Source: Johnny Miller, <https://unequalscenes.com/mumbai>

Informal Urbanization



Definition of informality:

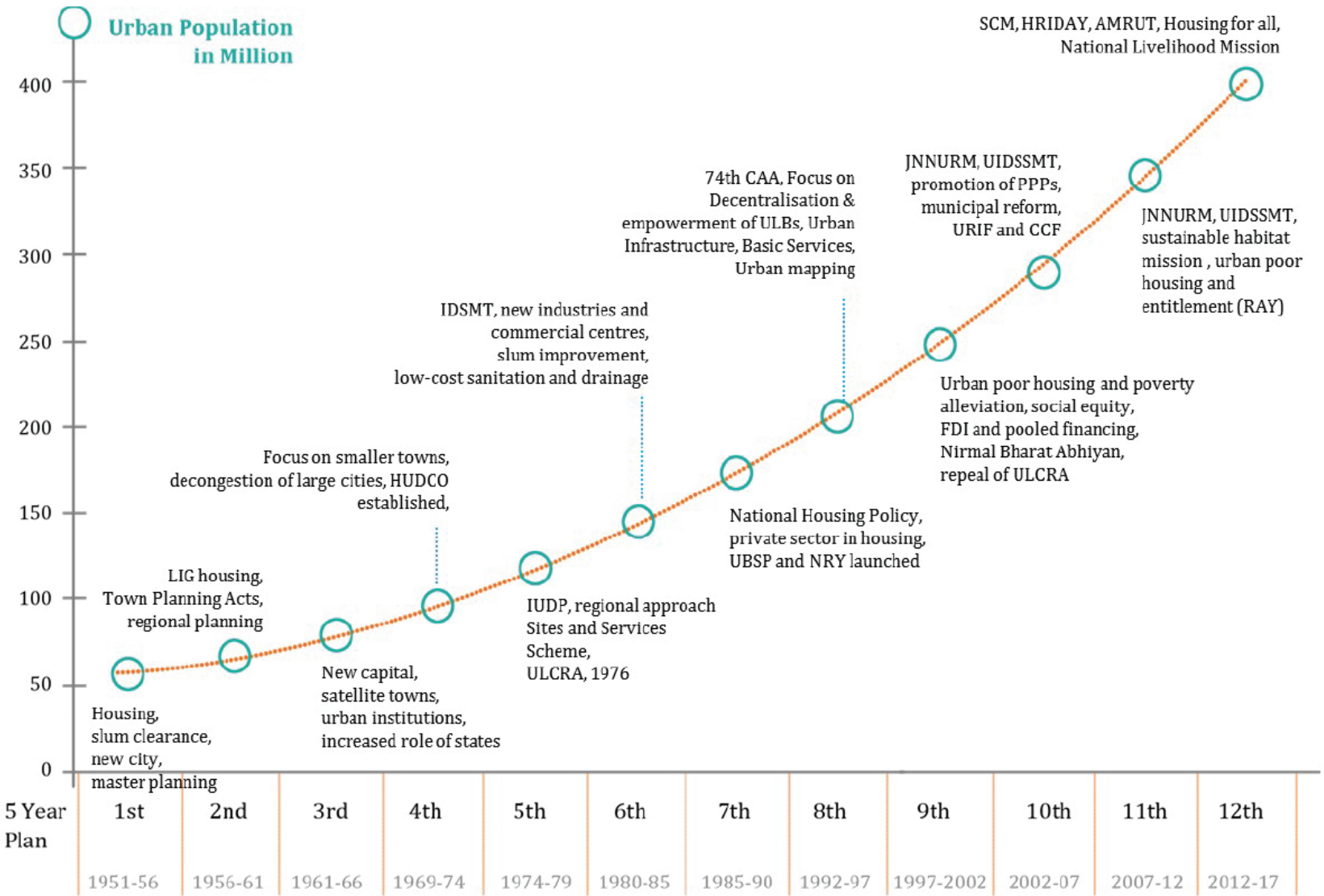
- no security of tenure
- lack of basic services and infrastructure
- geographically and environmentally hazardous area

Source: UN-Habitat

Aerial view of Mumbai

Source: Johnny Miller, <https://unequalscenes.com/mumbai>

Urbanization Processes



Source: Bhattacharya et al., 2015



Clearance/Eviction

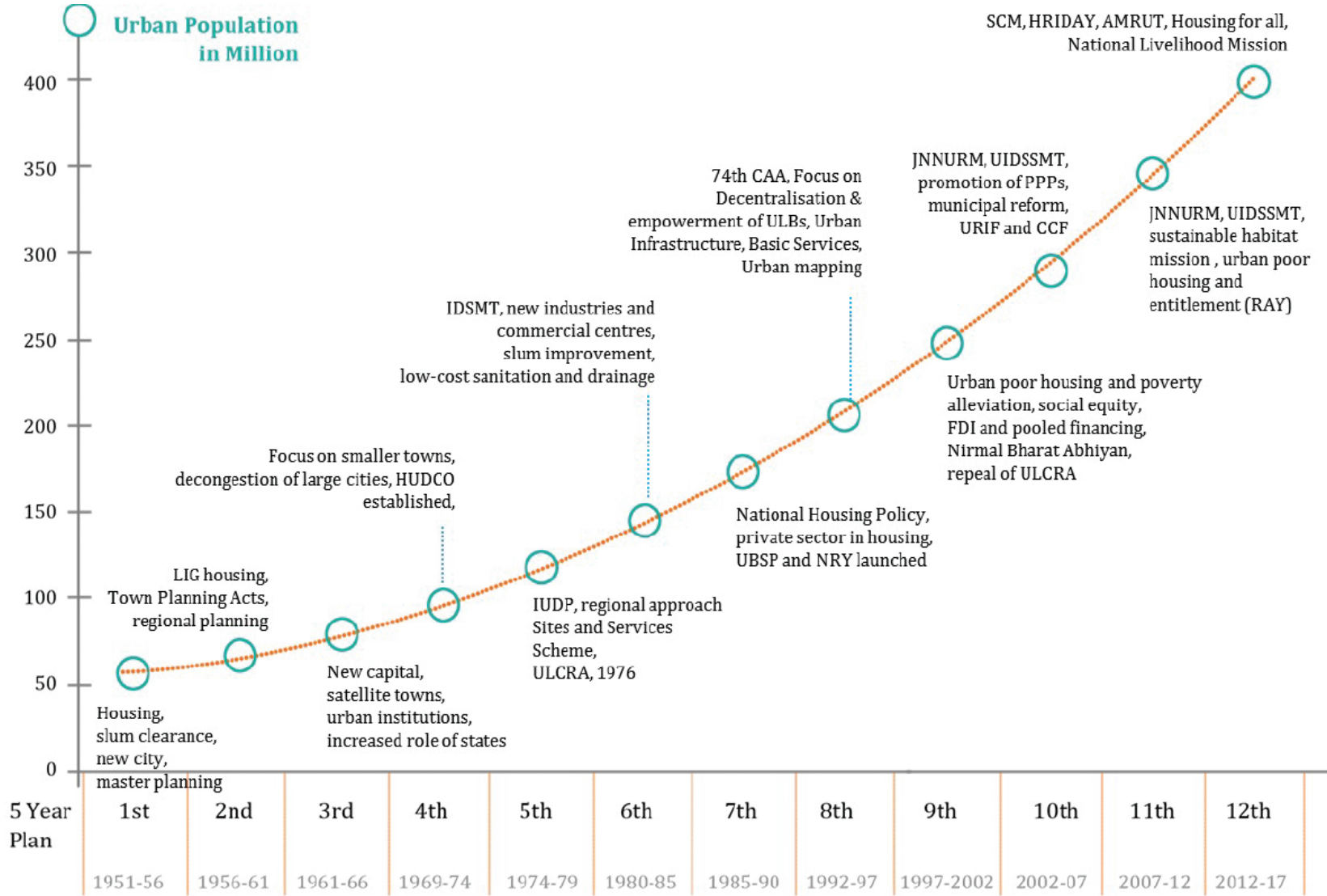
Rehabilitation



Source: Slum eviction, May-2016, Daily sun <https://www.daily-sun.com/magazine/details/139352/Slum-Eviction->

Source: Mint, Aug 2013, Developed states not too keen on slum rehabilitation, say experts, <https://www.livemint.com/Politics/Z5ZzSaoPzbVybSMzP6NxJK/Developed-states-not-too-keen-on-slum-rehabilitation-say-ex.html>

Urbanization Processes



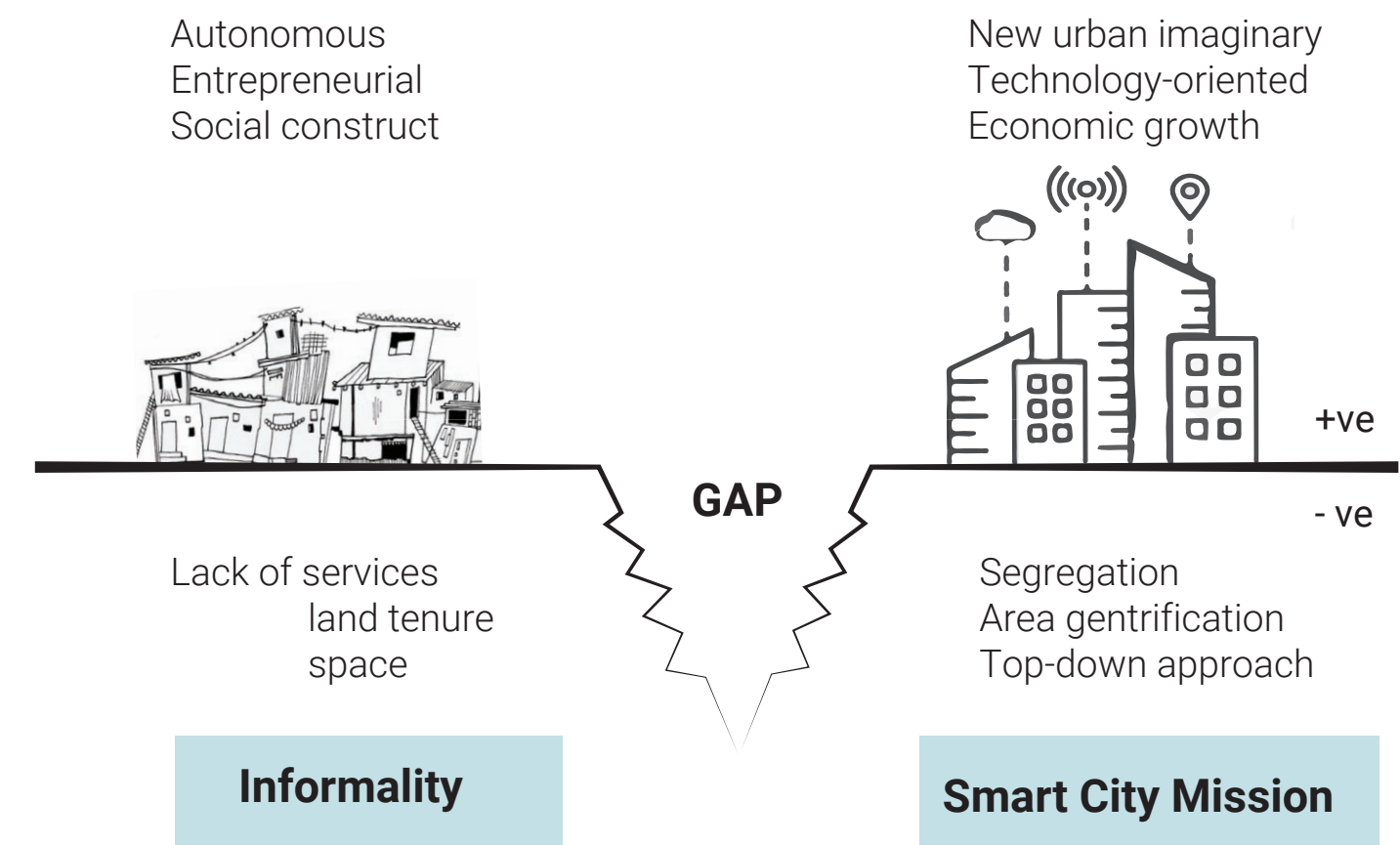
Source: Bhattacharya et al., 2015



Problem Statement

The Smart City Mission has led to socio-spatial segregation within the city and considers informality as a barrier to development.

The current schemes to address informal settlements is mainly a top-down process that neglects the voices of the marginalized groups. Hence, this leads to exclusion, lack of equity, and socio-spatial injustice.



Source: Drawn by Author

Research Aim

WHAT?

To develop a **collaborative planning** process for **informal area upgradation** in order to integrate within the smart city model

WHY?

To achieve **socio-spatial justice**, urban equity

To redefine an **inclusive** smart city

To provide **right to the city** to all

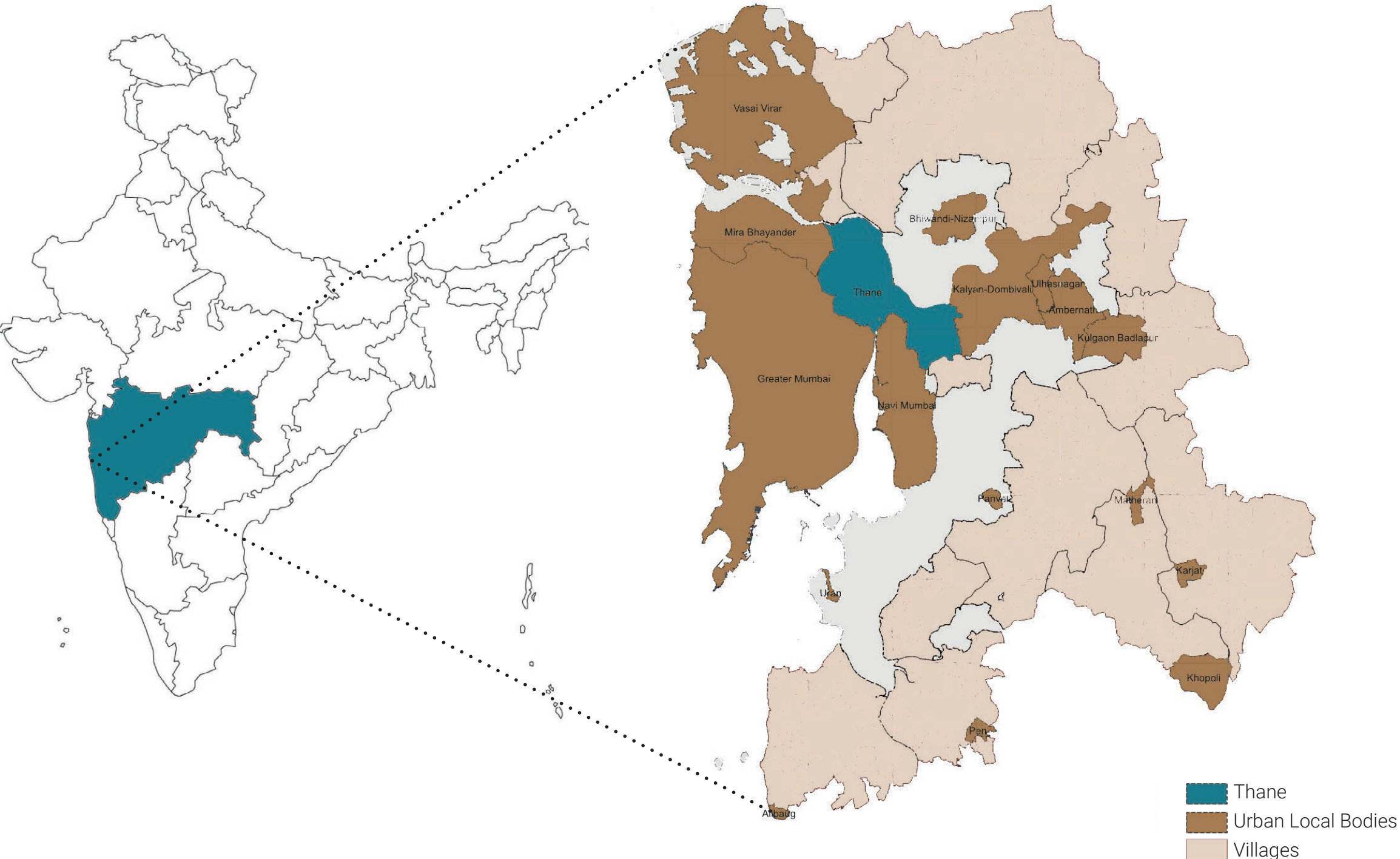
To ensure a fair distribution of resources

HOW?

by research: **theoretical underpinning** and propose changes in existing policies to make it a more **people-centric approach**

and design: **Case study** of Thane city and certain settlement within it to implement with the proposed design strategy and **spatial framework**

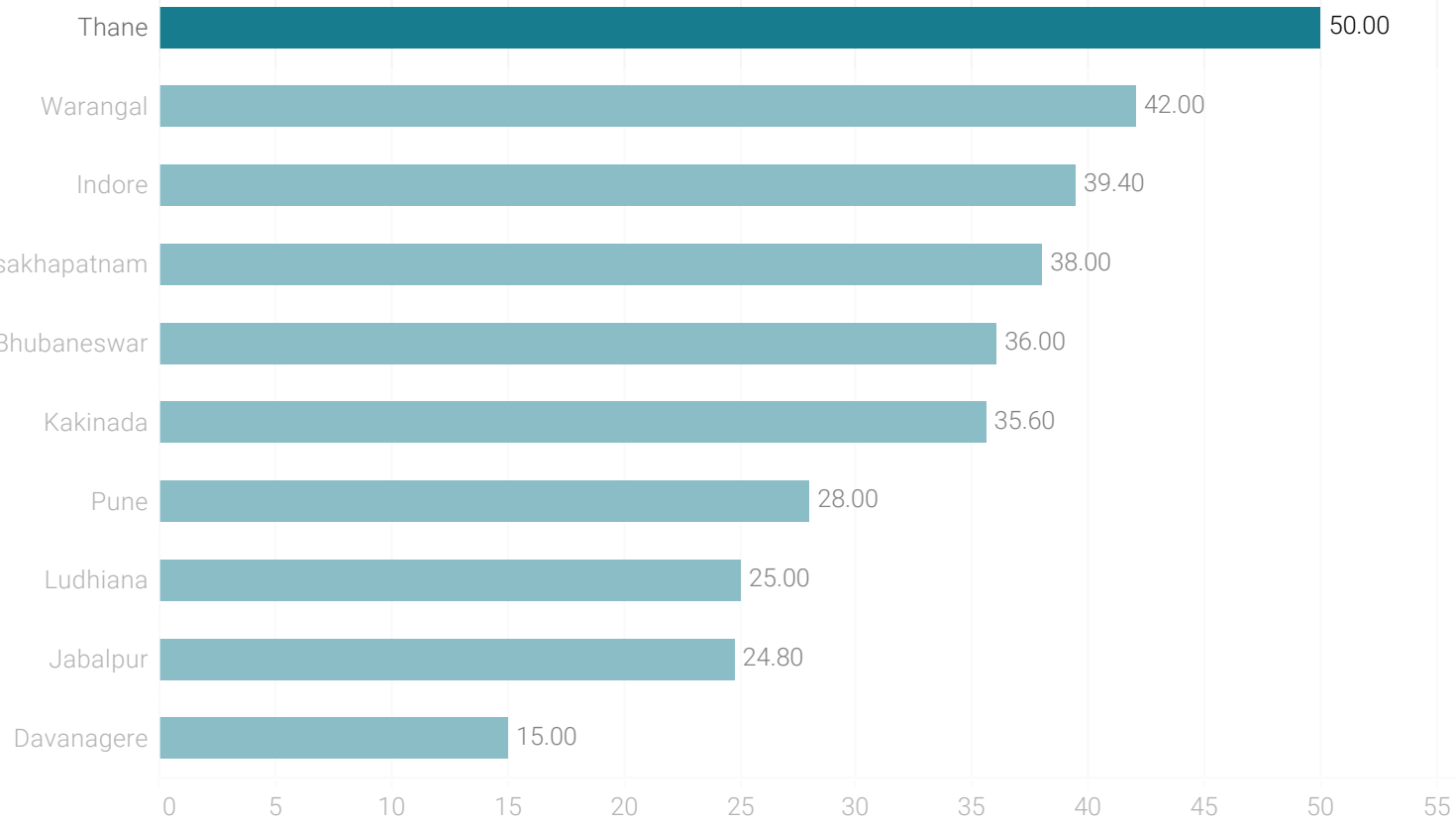
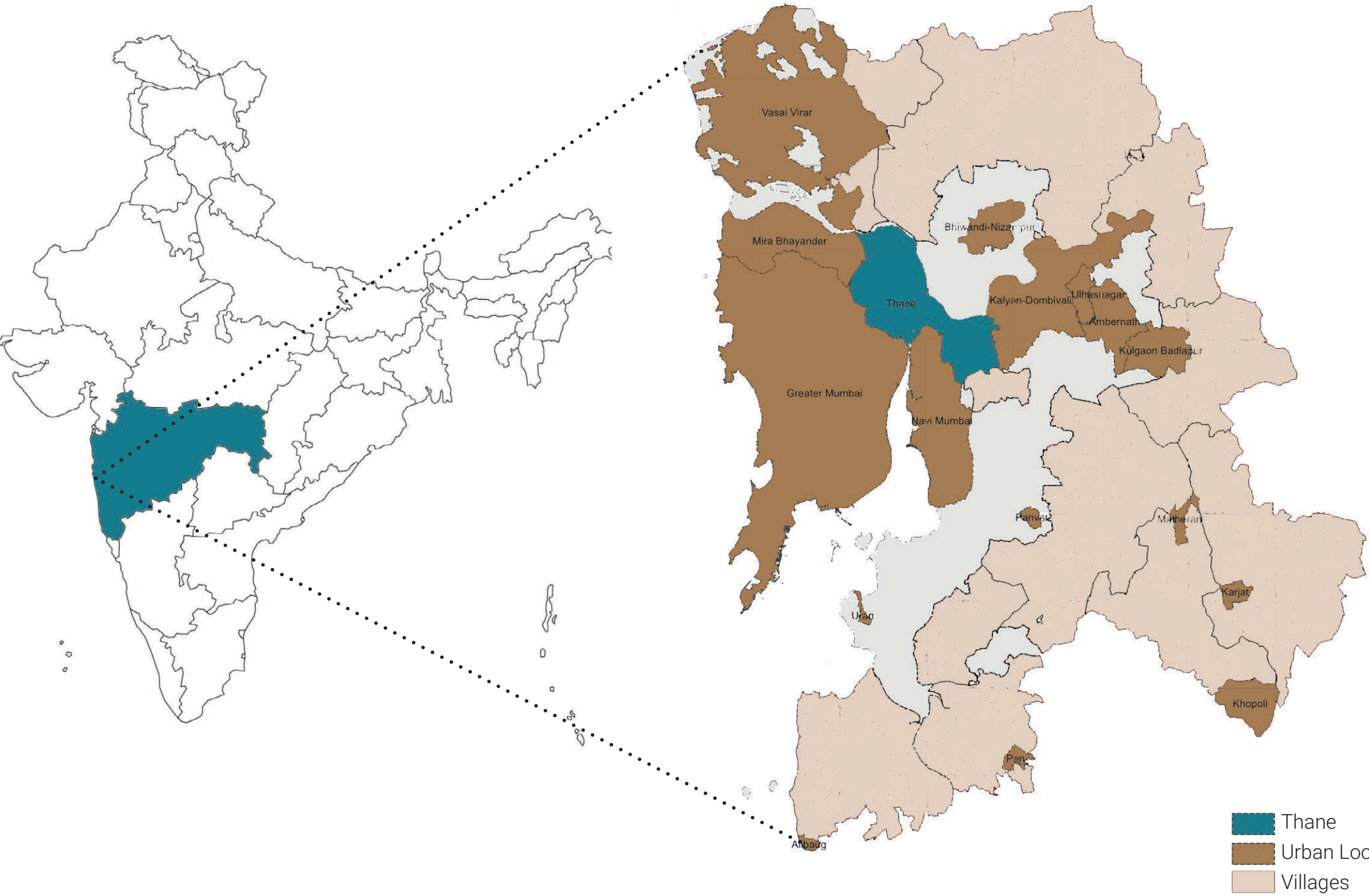
Case Study Area Selection



Location in Mumbai Metropolitan Region

Source: Adapted by author, UDRI

Case Study Area Selection



Percentage of the City's population reported to be Living in Low Income Settlements in Proposed Smart Cities

Source: Housing and Lands Rights Network, 2017

Location in Mumbai Metropolitan Region

Source: Adapted by author, UDRI

Research Question

How can a **strategic framework** using **collaborative approach** help to **integrate informal areas** within the **Smart City Mission** to achieve an **inclusive and just** development of Thane city, India?

Research Question

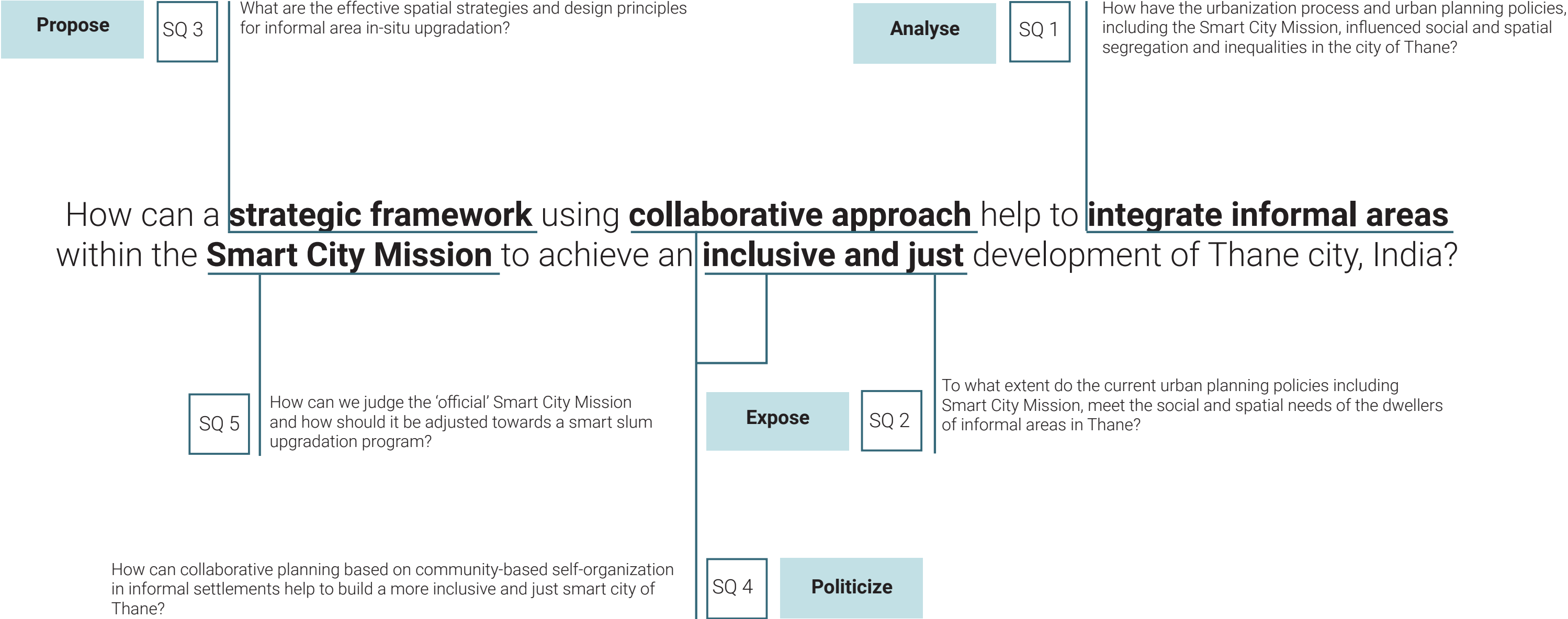
How can a **strategic framework** using **collaborative approach** help to **integrate informal areas** within the **Smart City Mission** to achieve an **inclusive and just** development of Thane city, India?



Based on **Peter Marcuse's Critical Planning Theory**

An operational platform to activate and institutionalize the local voices, a co-production system so to turn the passive actors in smart agents of change.

Sub- Research Questions



Problem Premise

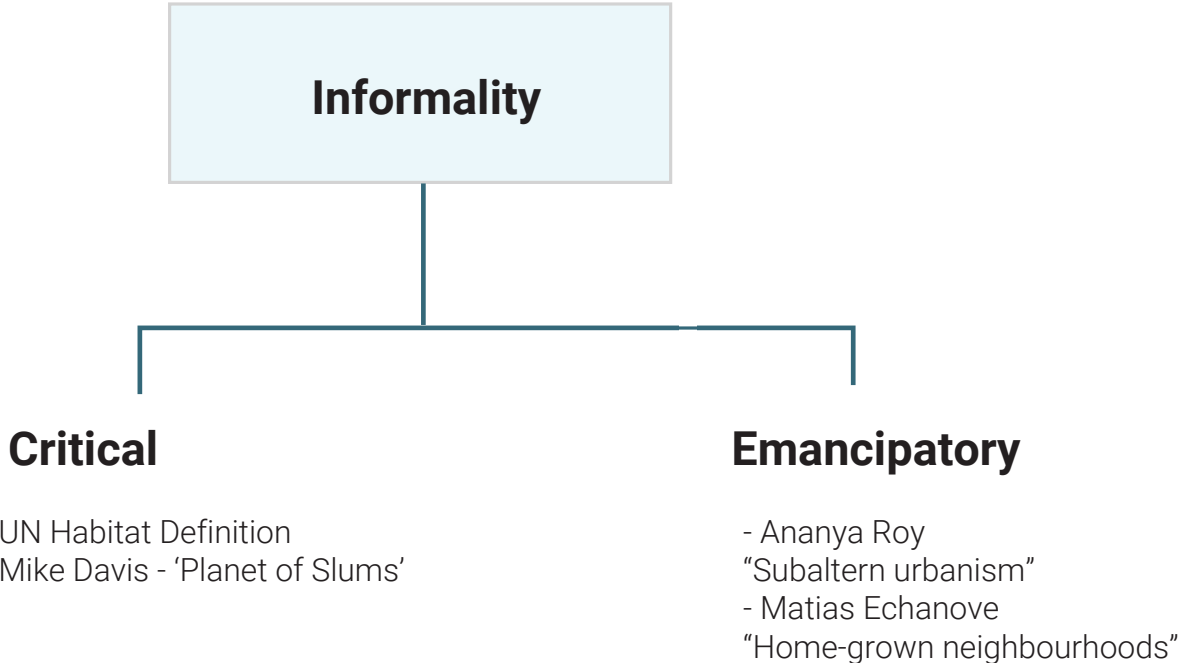
Approach definition - Theoretical and Conceptual Framework

Case Study

Strategic Framework

Conclusion and Recommendation

Theoretical Framework

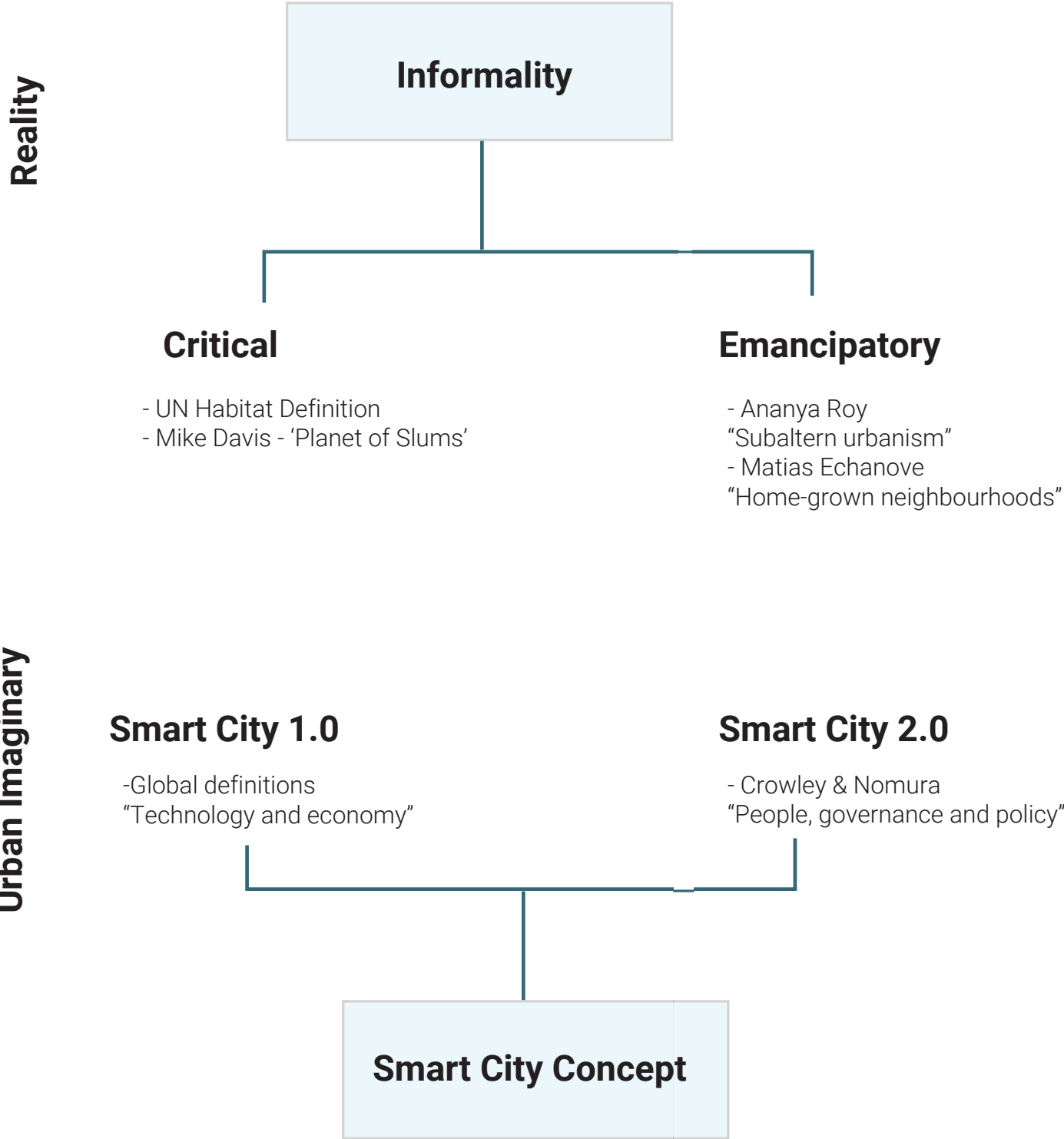


Poverty, Unplanned, Illegal
Source: The Guardian



Home-grown Neighborhoods, Autonomy, Entrepreneurship
Source: Fernando Neyra

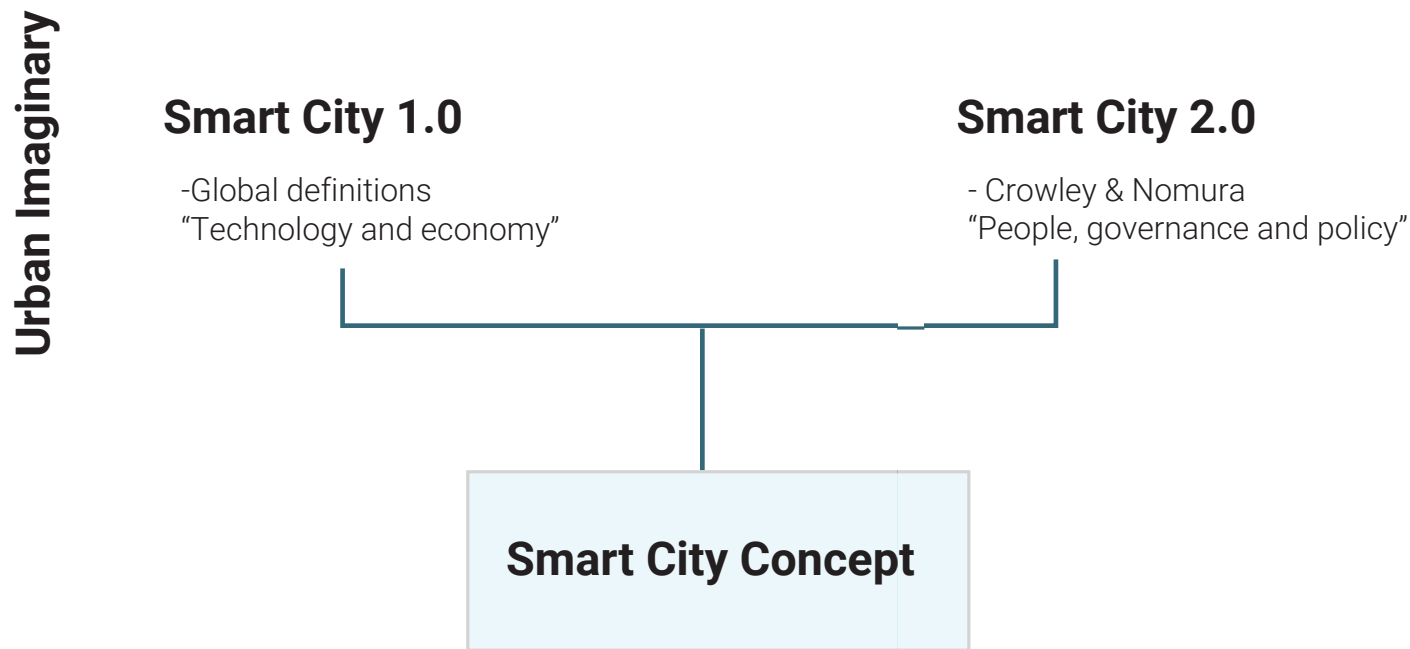
Theoretical Framework



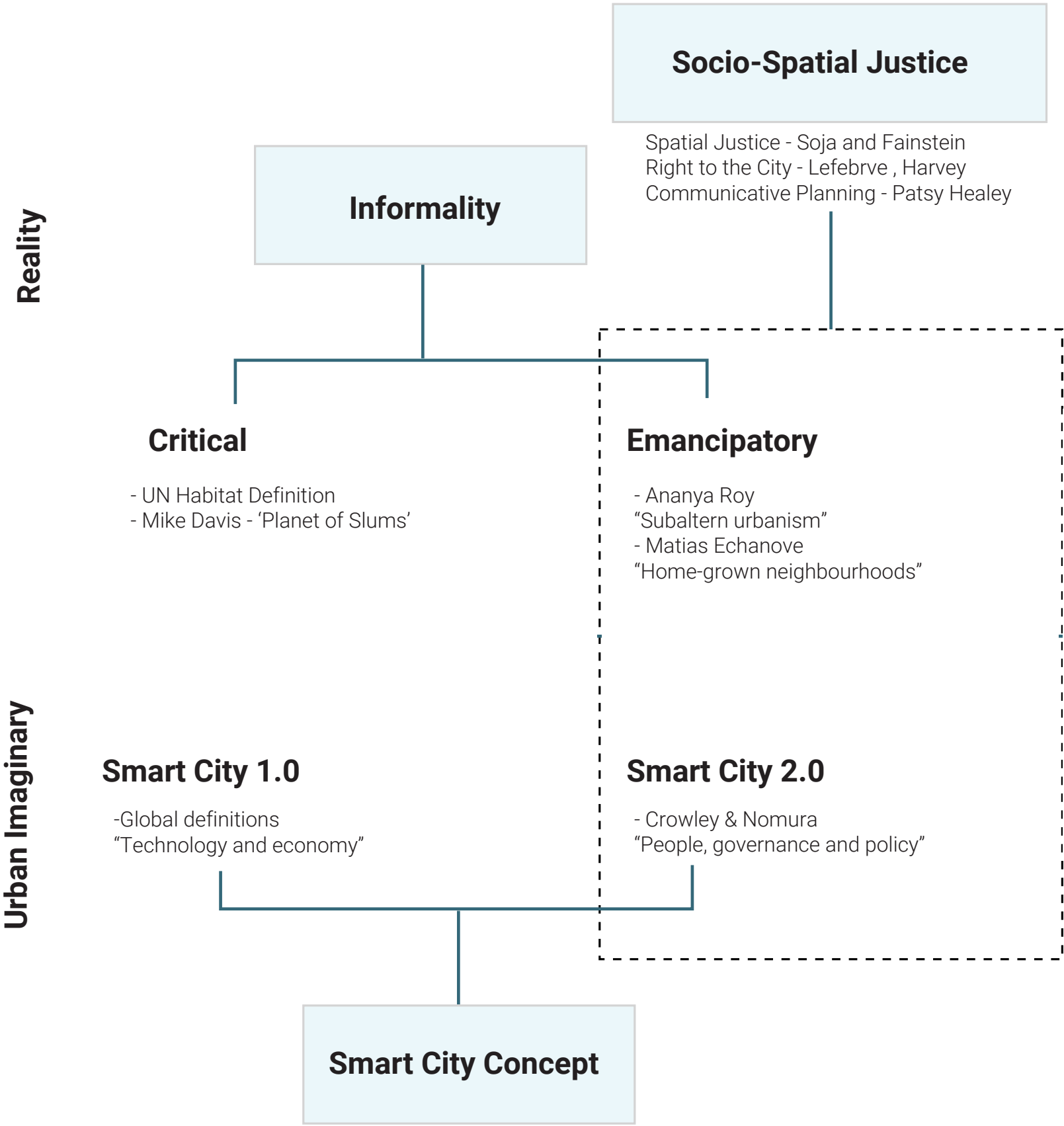
Theoretical Framework

	Smart City 1.0	Smart City 2.0
Focus of vision	Technology and economy	People, governance, and policy
Role of citizens	Passive role as sensors, end-users or consumers	Active role as co-creators or contributors to innovation, problem solving and planing
Objective of technology and experimentation	<ul style="list-style-type: none"> • Optimize infrastructure and services • Serve demand-side interests and spur new business opportunities • Address universal technical agendas (energy, transport, economy) 	<ul style="list-style-type: none"> • Mitigate or solve social challenges • Enhance citizen wellbeing and public services • Address specific endogenous problems and citizen needs
Approach	<ul style="list-style-type: none"> • Centralized (privileged actors) • Exogenous Development 	<ul style="list-style-type: none"> • Decentralized (Diverse actors) • Endogenous development

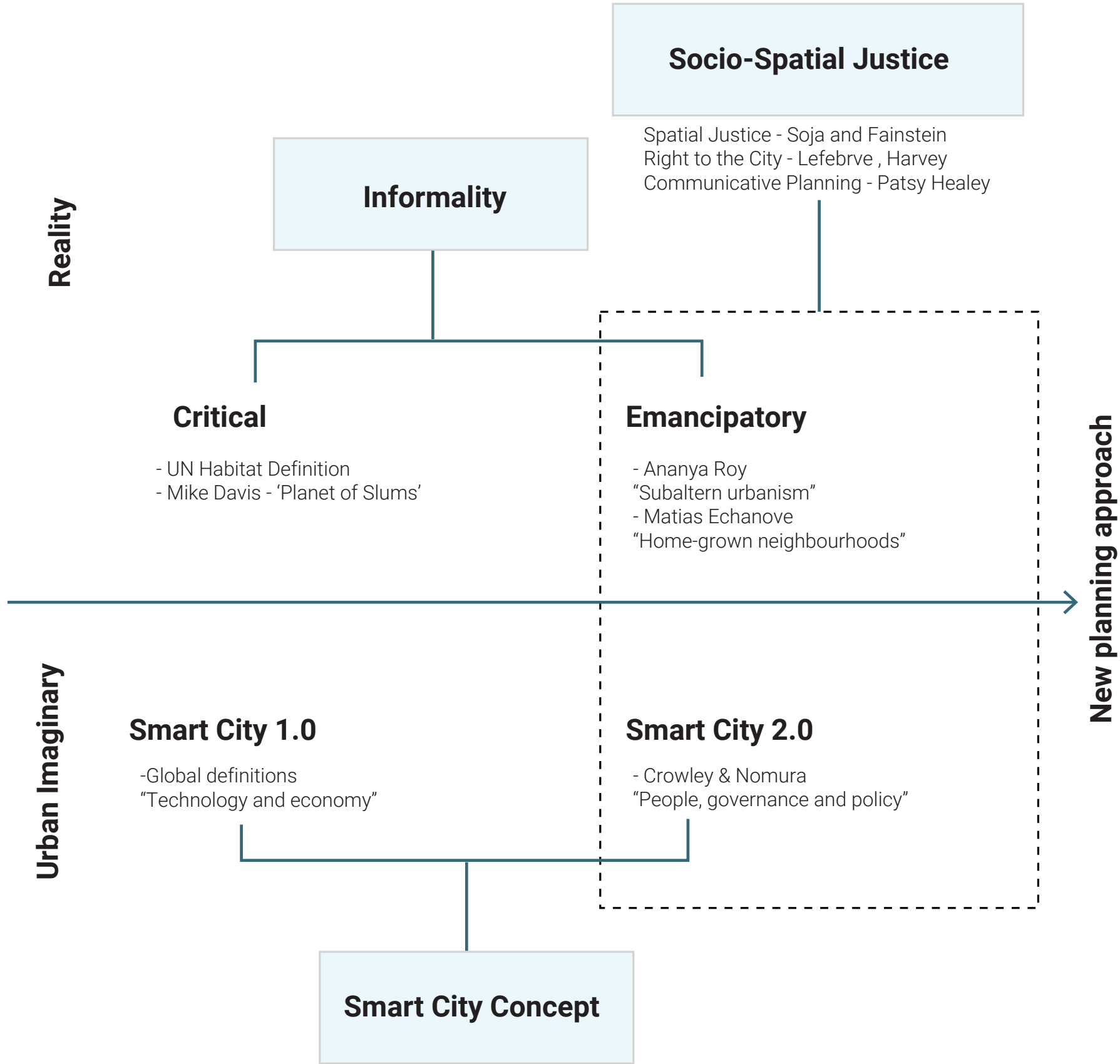
Source: Trencher, 2018



Theoretical Framework

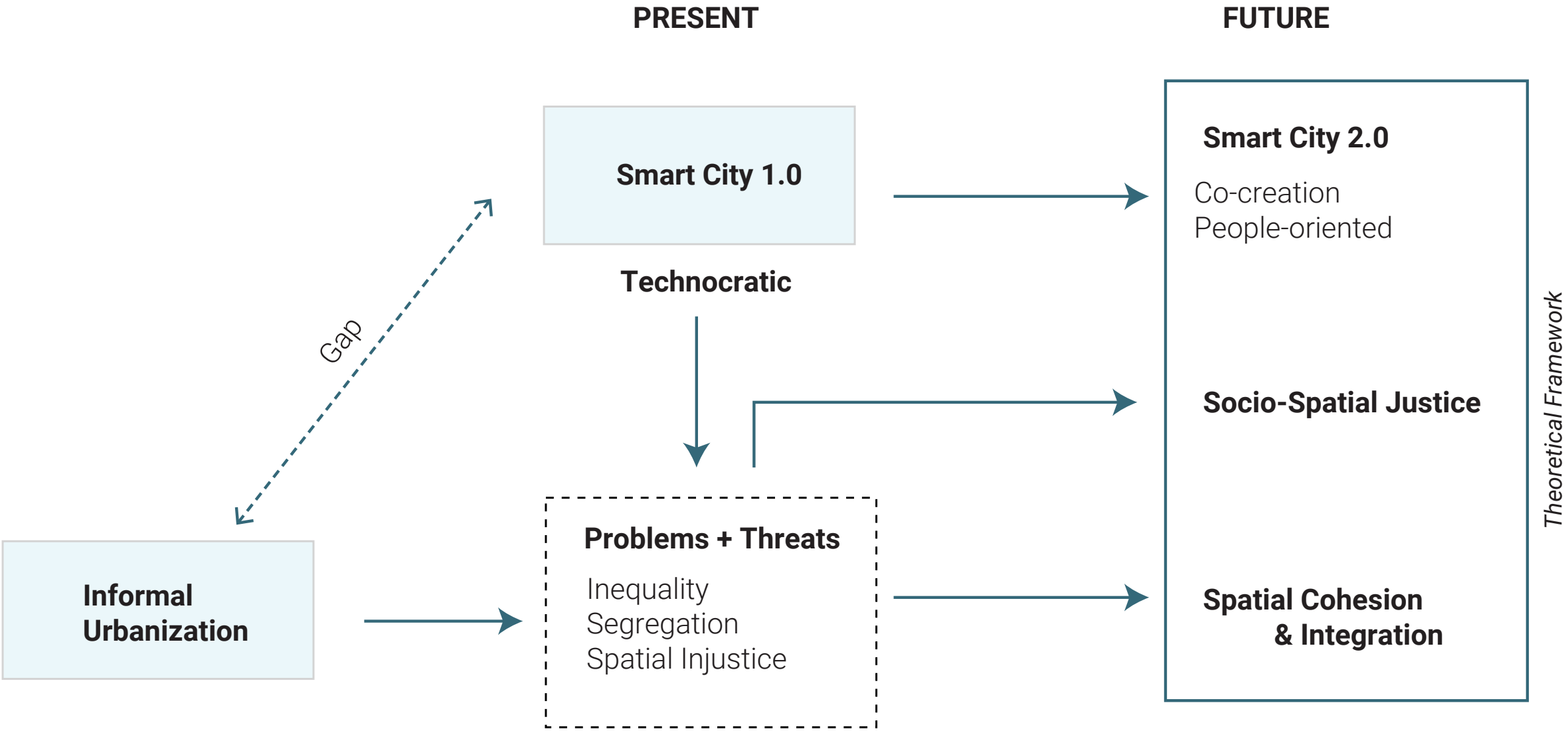


Theoretical Framework



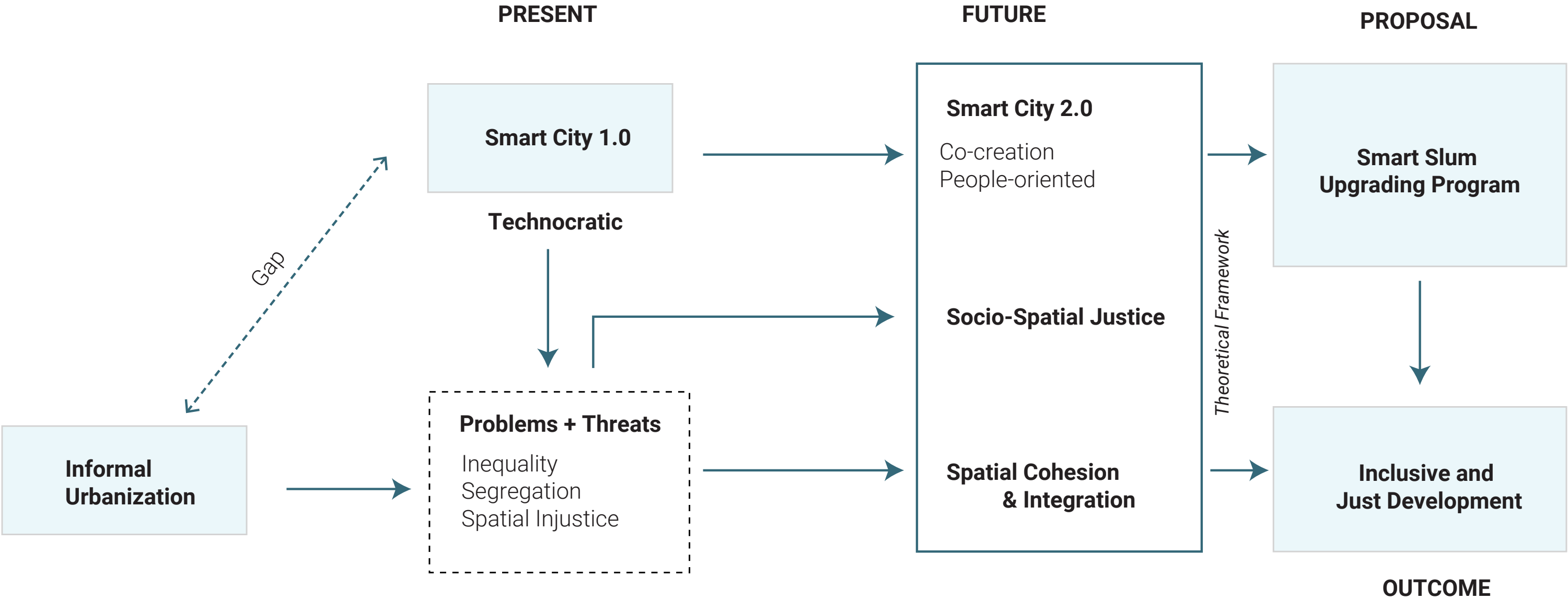
Source: Drawn by Author

Conceptual Framework



Source: Drawn by Author

Conceptual Framework



Source: Drawn by Author

Problem Premise

Approach definition

Case Study - Thane City

Strategic Framework

Conclusion and Recommendation

Analyse

SQ 1

How have the urbanization process and urban planning policies, including the Smart City Mission, influenced social and spatial segregation and inequalities in the city of Thane?

Expose

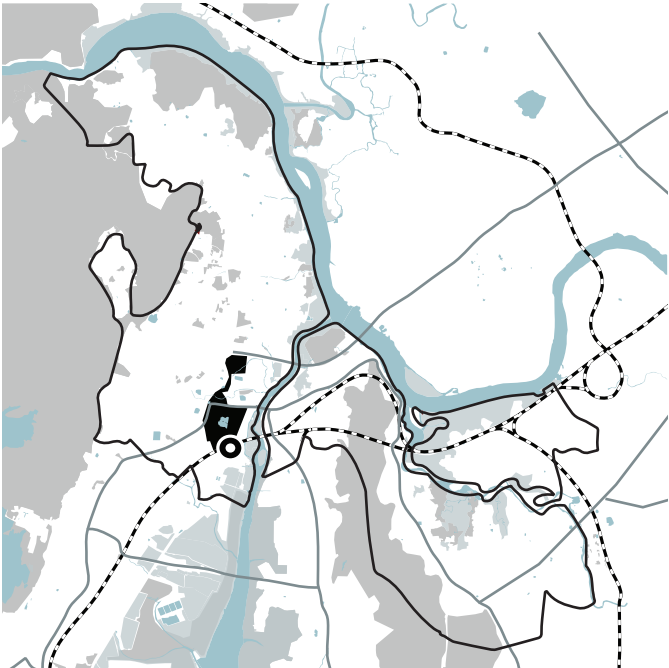
SQ 2

To what extent do the current urban planning policies including Smart City Mission, meet the social and spatial needs of the dwellers of informal areas in Thane?

Evolution of Thane

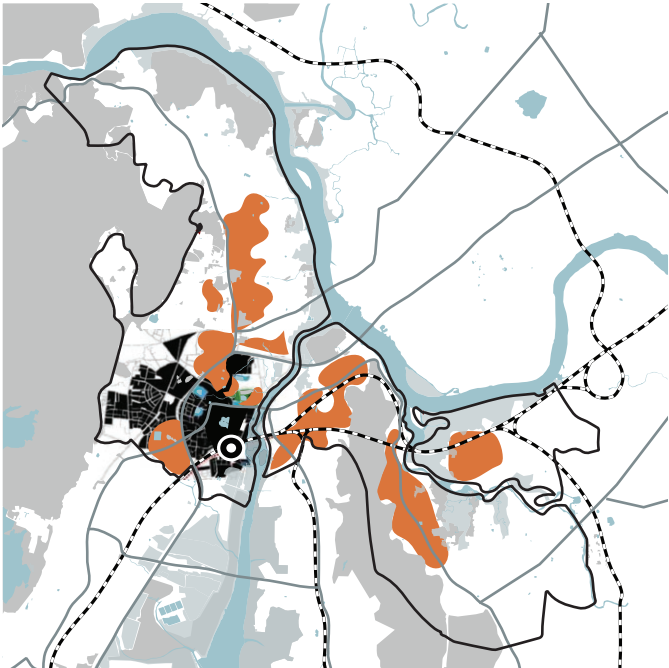
Trading post

- Fort, Old settlement - Charai and Squatters
- Urban Blocks divided by Railways and Highways
- Monofunctional Industrial District



Real Estate Hub

- Gated societies
- Gated tower complexes
- Retail shopping centers and hypermarkets
- Self contained redevelopment projects



Eastern Express highway
Improved road connectivity

Included in 'Smart City Mission'

Growing business parks, office complexes, and real estate hotspot with upcoming metro line connection



1853
First railway from Bombay to Thane

1958
1962
First Industrial Estate at Wagle established by MIDC

1982
Establishment of Thane Municipal Corporation

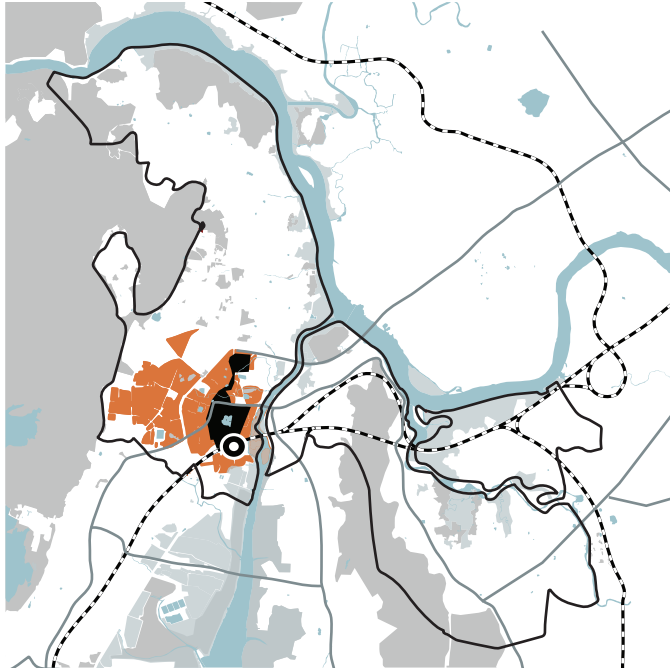
2000
Commercial development
Trans-harbour line to Vashi (Navi Mumbai)

2009
Rapid increase in city slum
City change from Industrial town to Real Estate

2016
2021

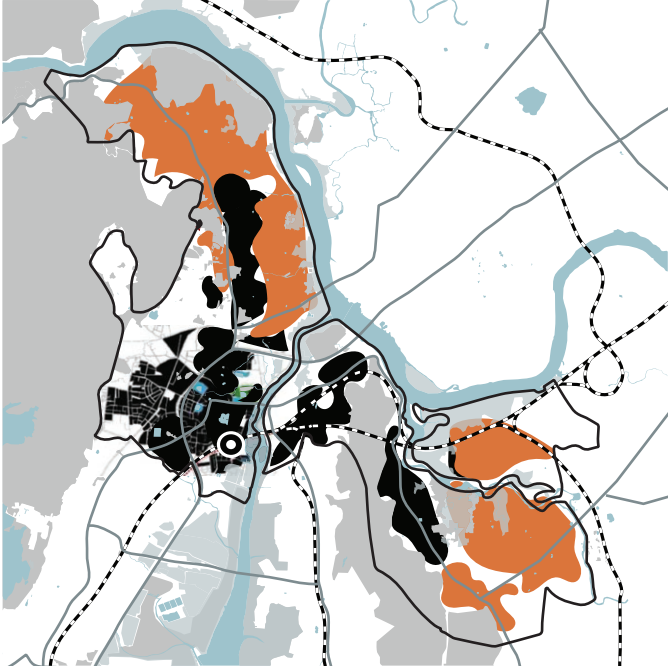
- Social housing and neighbourhoods
- Workers housing blocks
- Squatter settlements

Industrial Town



- Post industrial urban voids to IT parks and commercial centers

Post Industrial

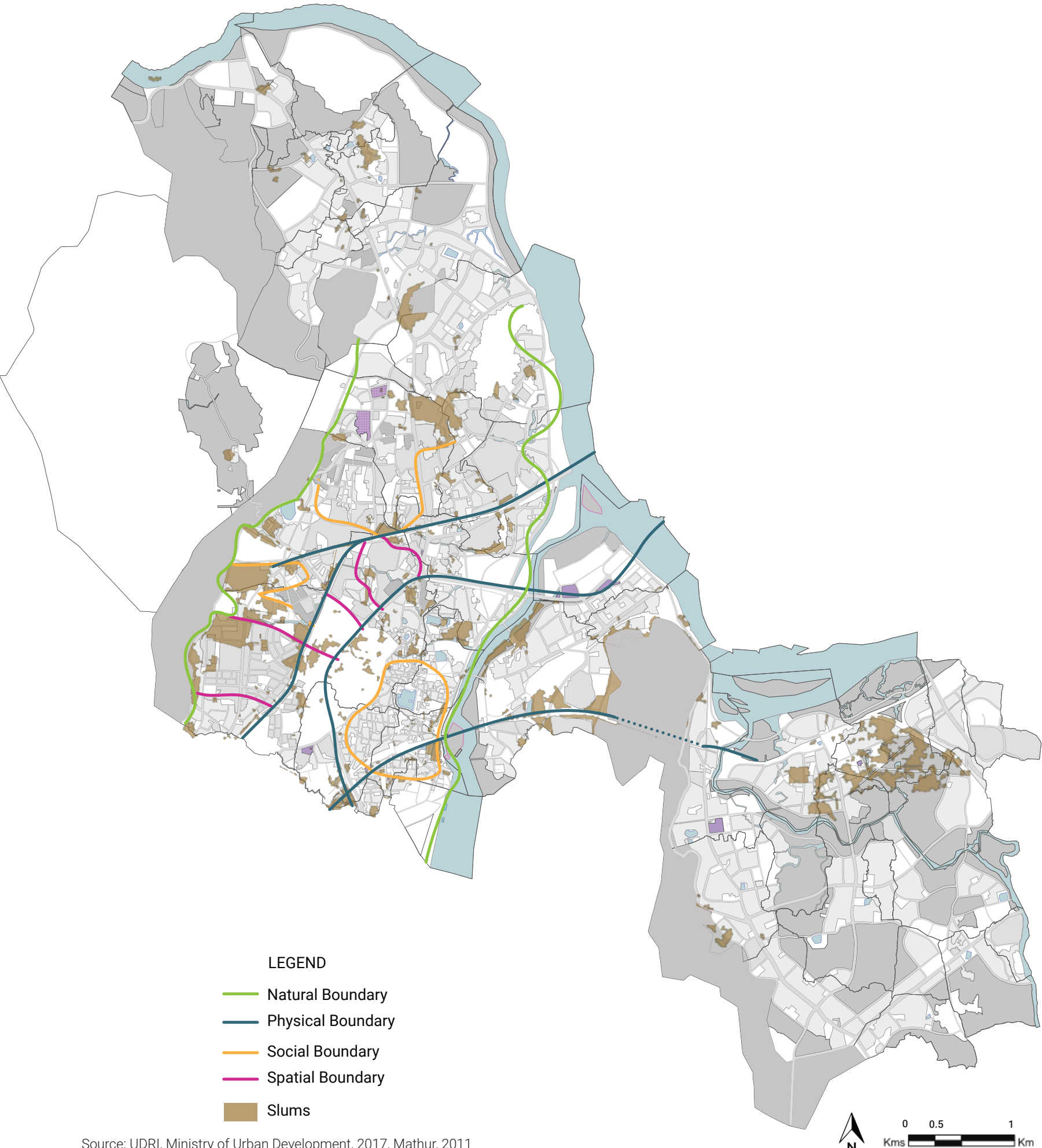


Source: Drawn by Author, Geofabrik, UDRI, Sen & Hemshankar, 2021

Slum Development and Segregation

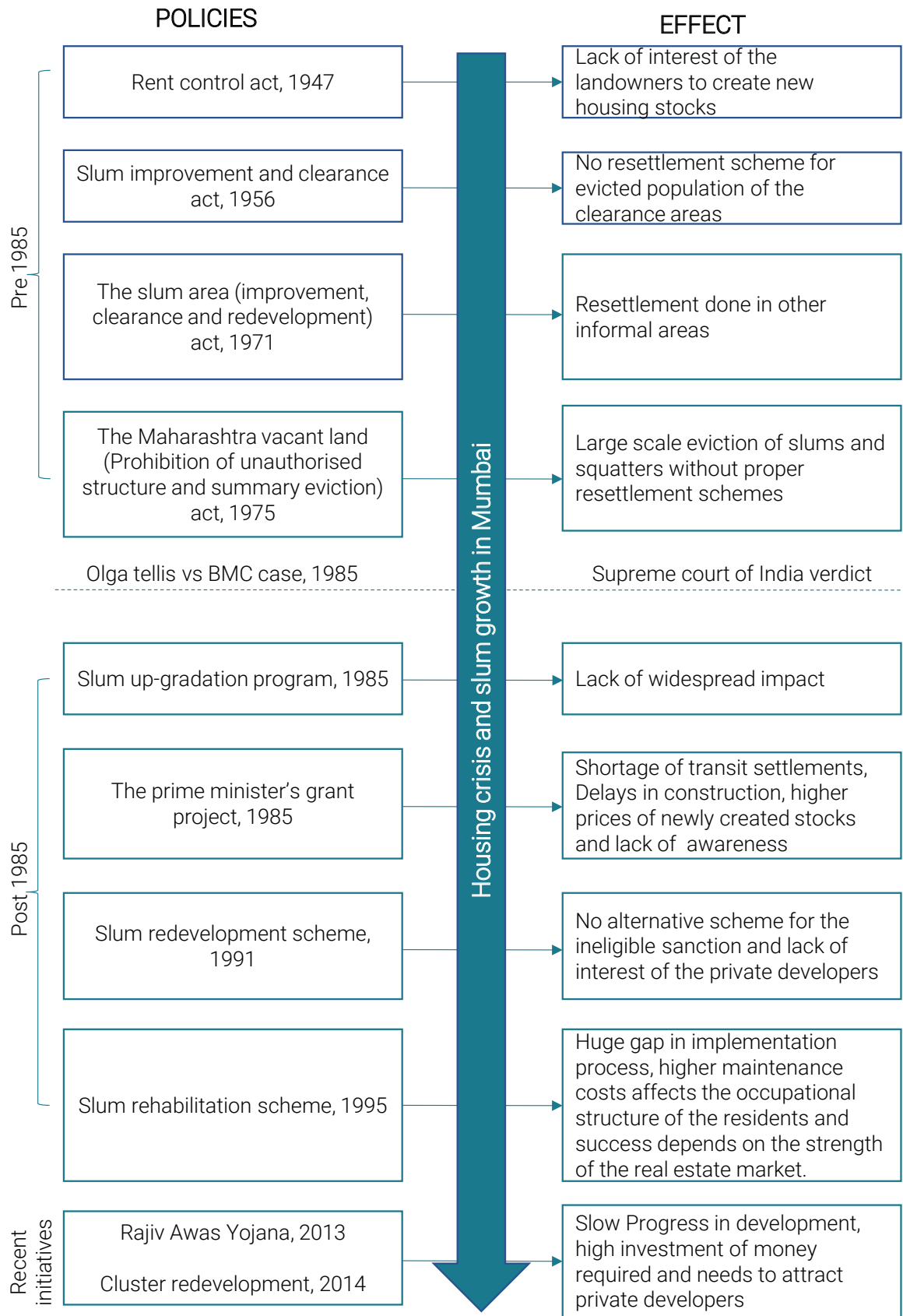
Slum Population: 0.983 million (2011)
Number of slums - 252

- Emergence of slums -
- Proximity to workplace
 - Availability of water

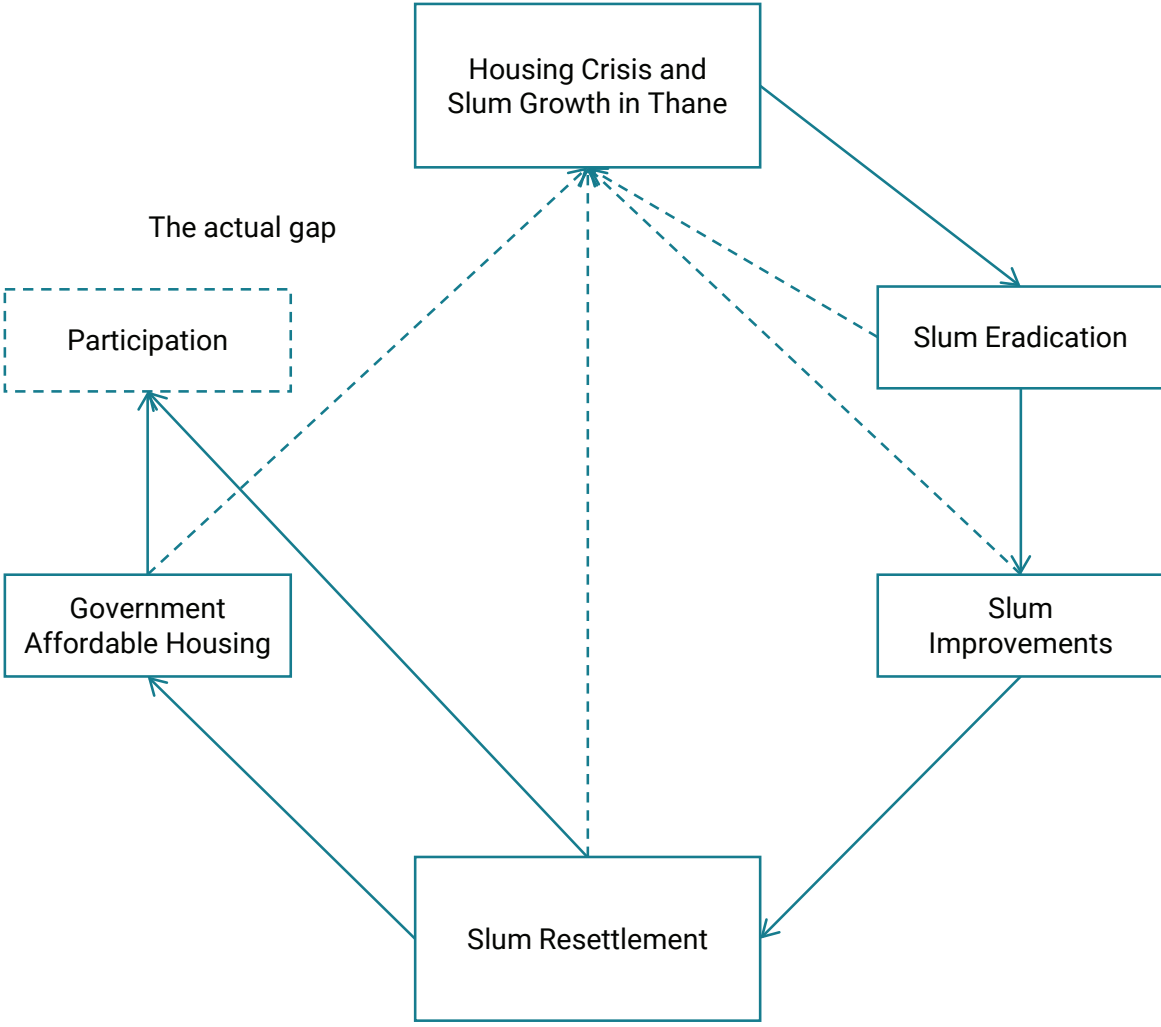


Source: UDRI, Ministry of Urban Development, 2017, Mathur, 2011

Slum Improvement Policies



Source: Bardhan et al., 2015



Source: Adapted by author, Bardhan et al., 2015



Source: Mumbai Mirror

Smart City Thane

Strength

- Location and connectivity to Mumbai region
- Green areas and waterfront stretch
- Vibrant economy with emerging IT industry
- Strong financial and execution strengths of the Municipality
- Growing population
- High literacy rate
- Emerging retail and real estate hub

Opportunity

- Improved regional connectivity to Thane with upcoming Metro line
- Enhanced liveability and sustainability in Thane
- Emerging centre for higher value service-based industries

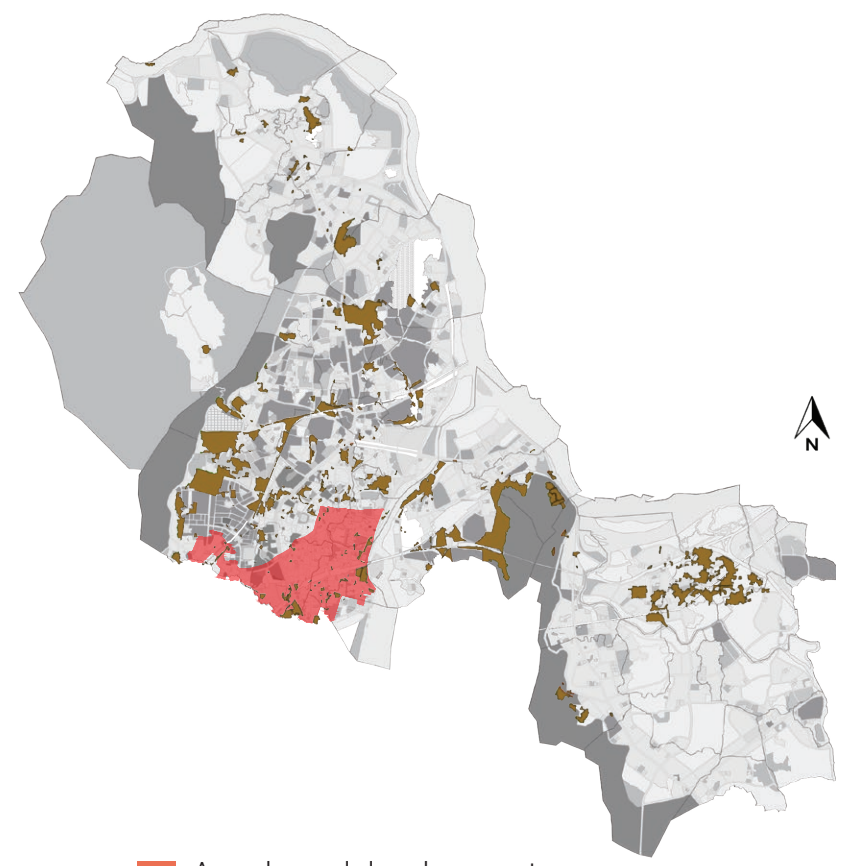


Weakness

- Congested city centre
- Unsafe housing conditions
- Infrastructural gaps such as inequitable distribution of water and sewerage network
- Dormitory city

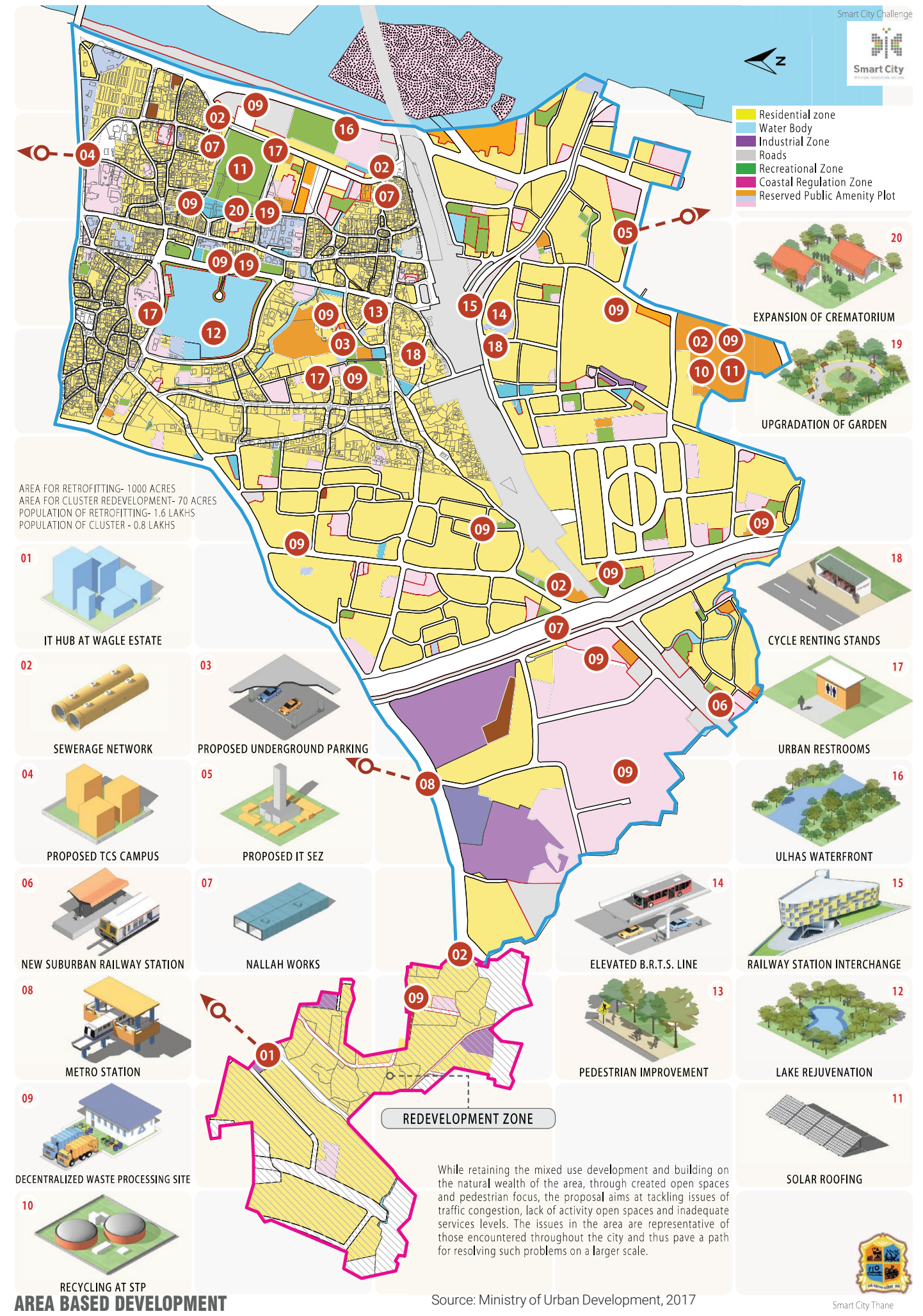
Threat

- Downsizing of existing manufacturing and industrial base
- Increasing traffic congestion
- Deterioration of the creek area and waterfront
- Unauthorized dilapidated settlements which is more than 50% of the population
- Address infrastructure gaps



Area-based development
Slums
Source: Ministry of Urban Development, 2017

Source: Ministry of Urban Development, 2017

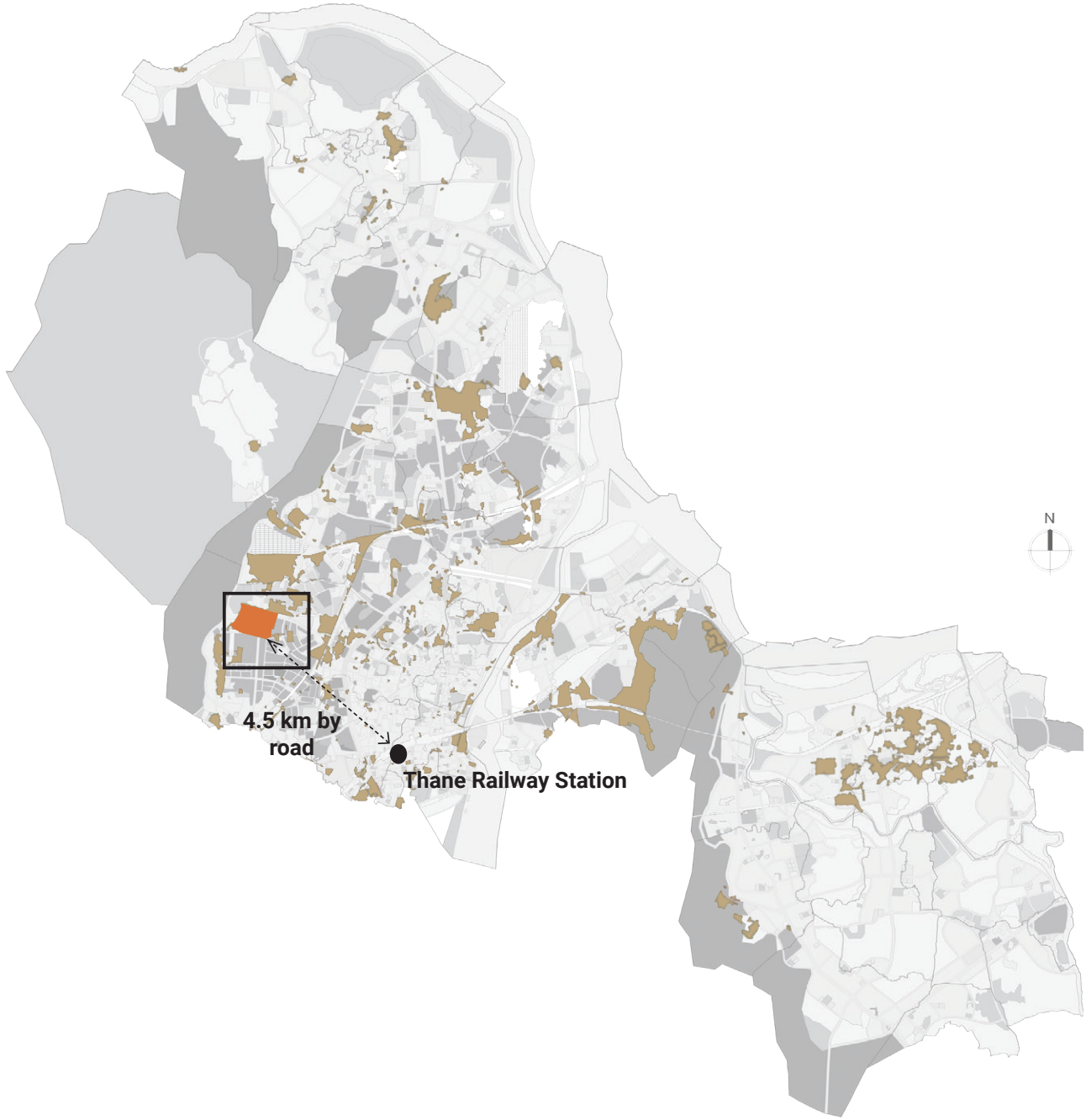


Design Intervention Area

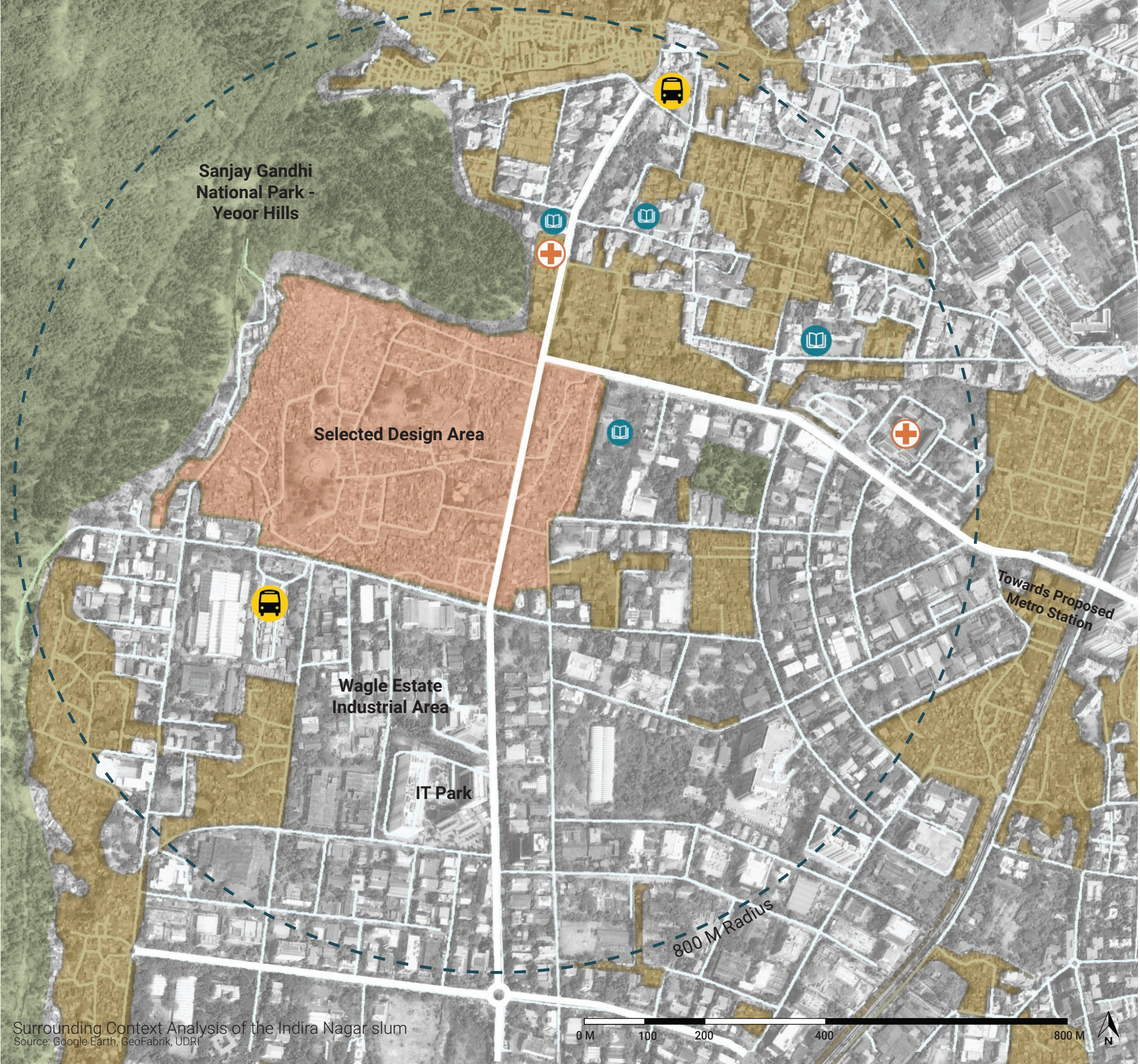


Source: Photo by Author

Context Analysis



- LEGEND
- Educational institute
 - Health care
 - Bus
 - Chosen Site
 - Other Slums

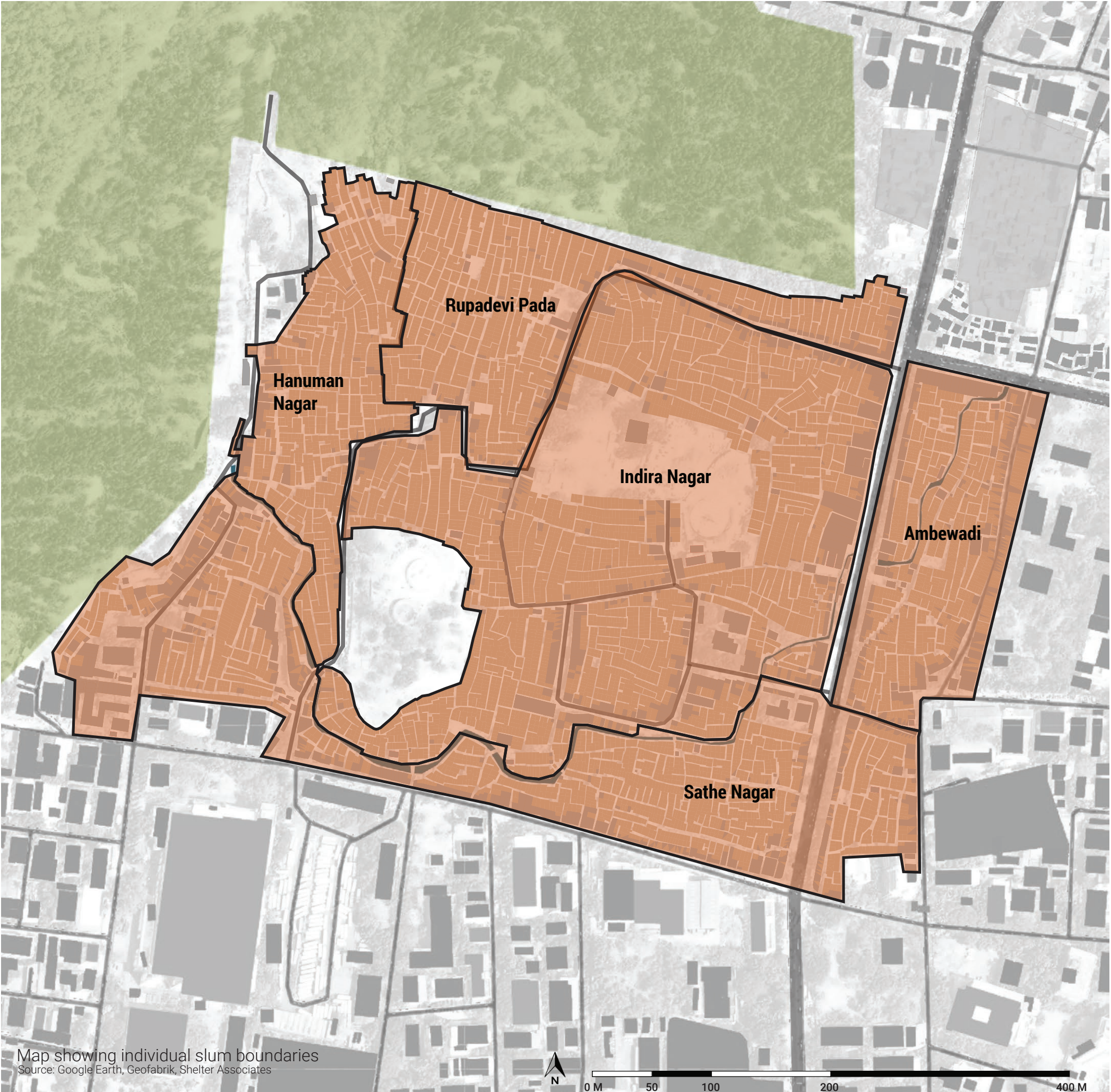


Design intervention area

Total Area: 308,468 Sq. mtr/ 30.46 Hectare






Total households - 9882 HH

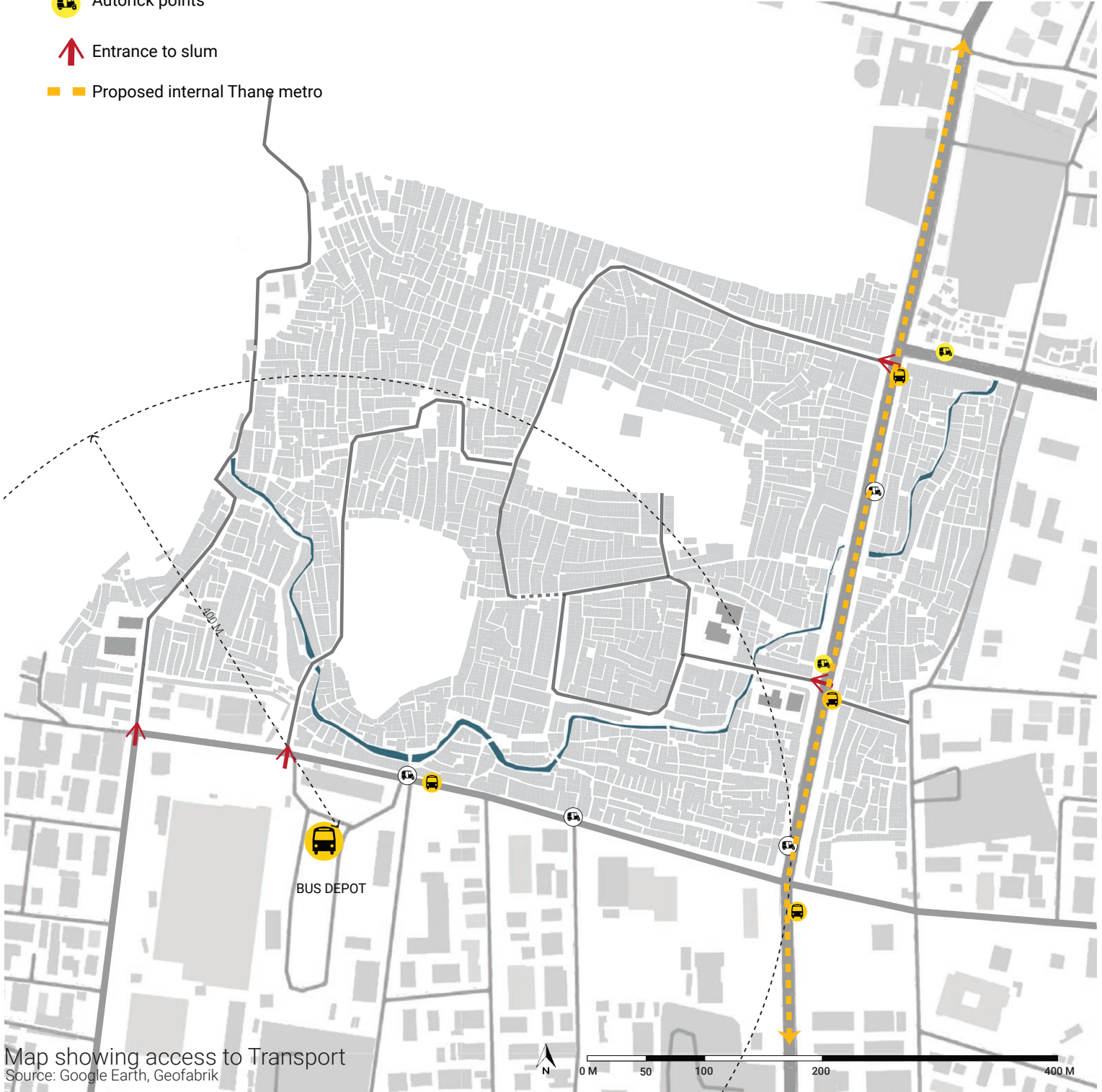
Total Population - 42636 people



Site Analysis










Transportation

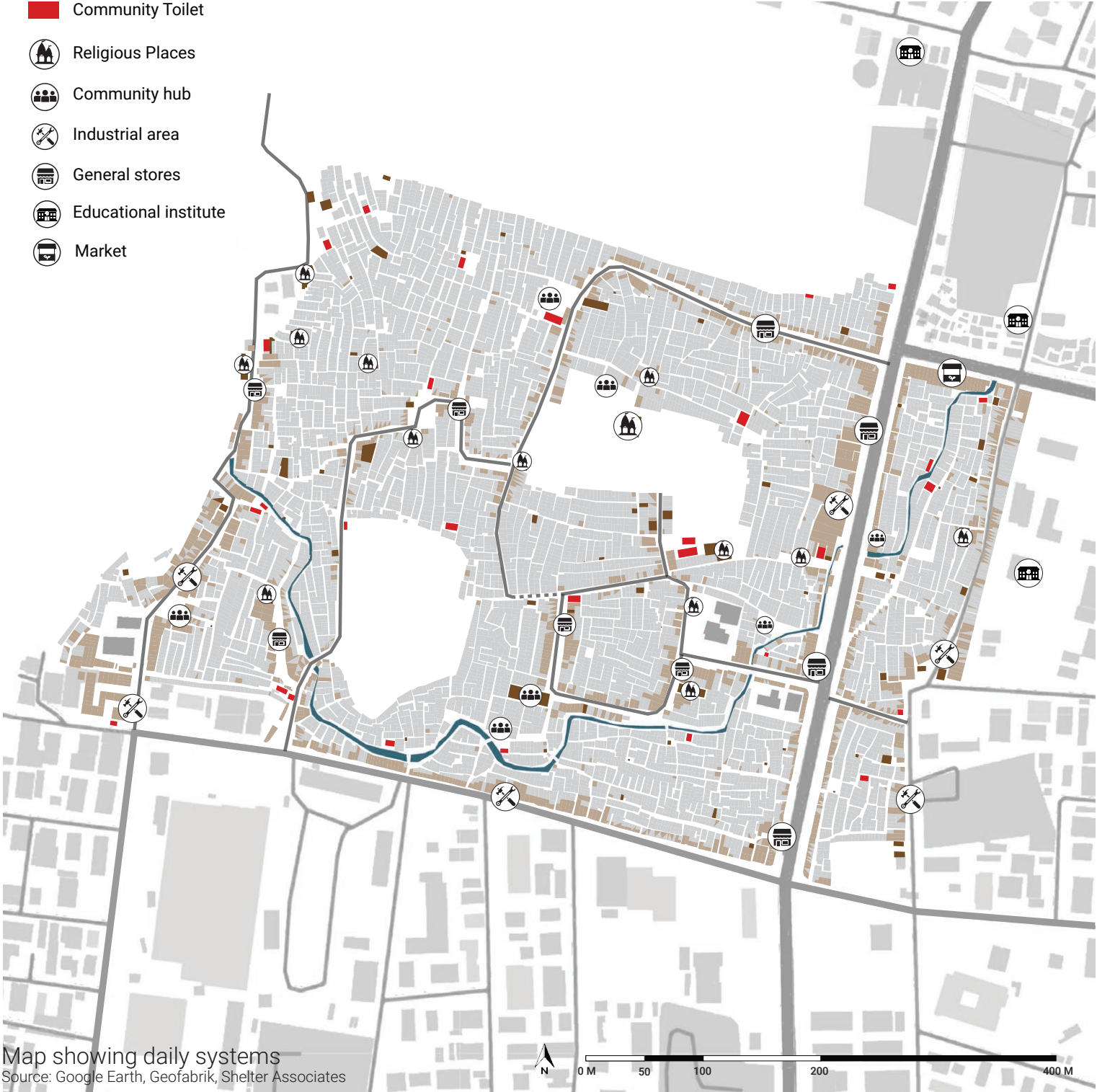
- LEGEND
-  Bus Stop
 -  Share Autorick points
 -  Autorick points
 -  Entrance to slum
 -  Proposed internal Thane metro



Map showing access to Transport
Source: Google Earth, Geofabrik

Daily systems

- LEGEND
-  Shops
 -  Amenities
 -  Community Toilet
 -  Religious Places
 -  Community hub
 -  Industrial area
 -  General stores
 -  Educational institute
 -  Market



Map showing daily systems
Source: Google Earth, Geofabrik, Shelter Associates

Visual Inference



Source: Author's own image



Source: Author's own image

Poor waste management and disposal

Visual Inference



Source: Author's own image



Source: Author's own image

Under-utilized public squares and spaces

Visual Inference



Source: Author's own image



Source: Author's own image

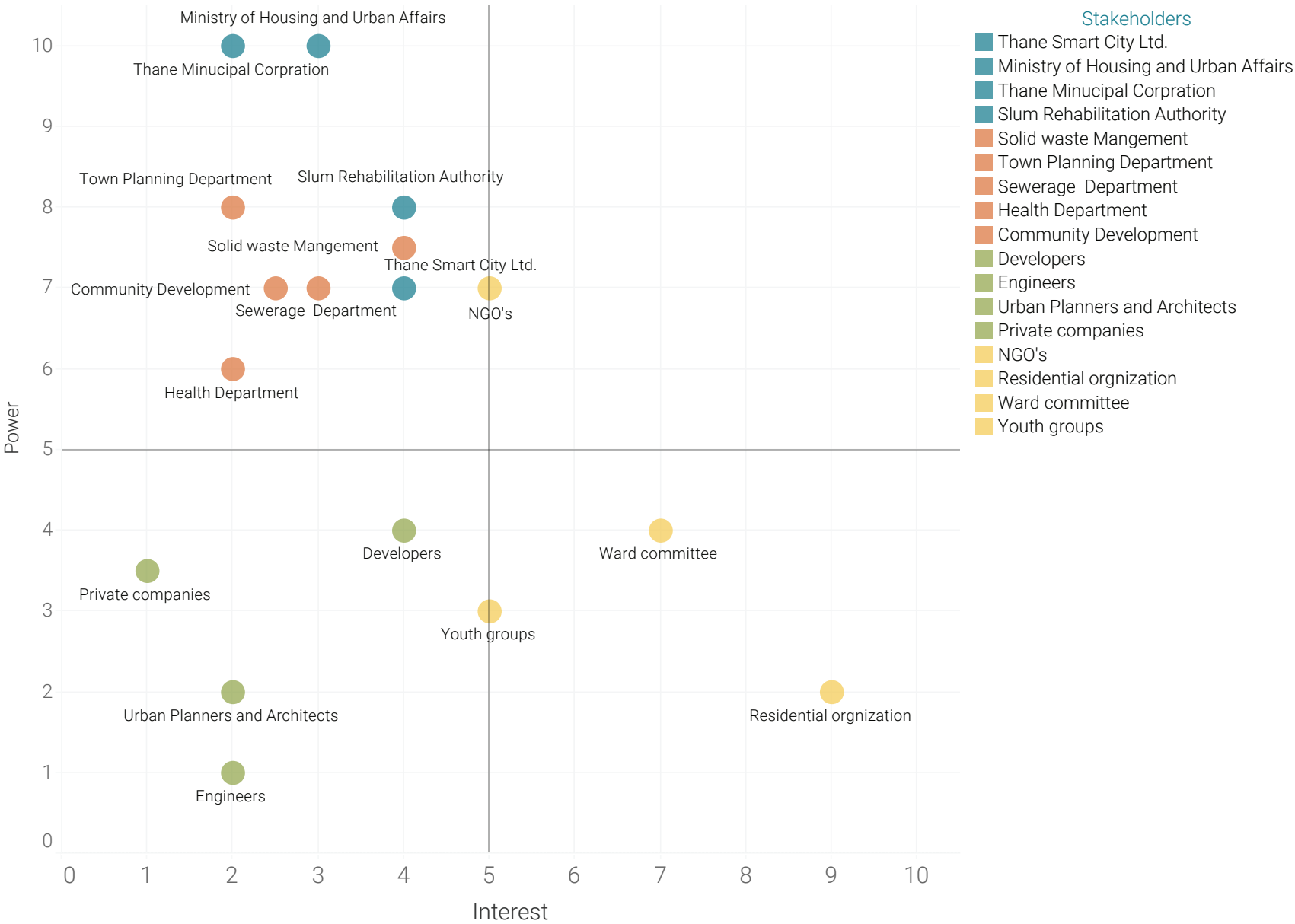
Need for better street and upgraded housing

Stakeholder Analysis

Elements	Conventional development							
	Planning	Implementation					Maintenance	
	Settlement Planning	Finance provision	Physical Infrastructure	Community services	Housing redevelopment	Labour	Management	Labour
Stakeholders								
Local government								
Ward committee								
NGO								
Youth group, CBOs and FBOs								
Residents								
Neighbourhood council								
Urbanist								

Existing Stakeholder relationship Matrix

Source: Adapted by Author based on UN-Habitat, 2014



Existing - Power-Interest Matrix

Source: Drawn by Author

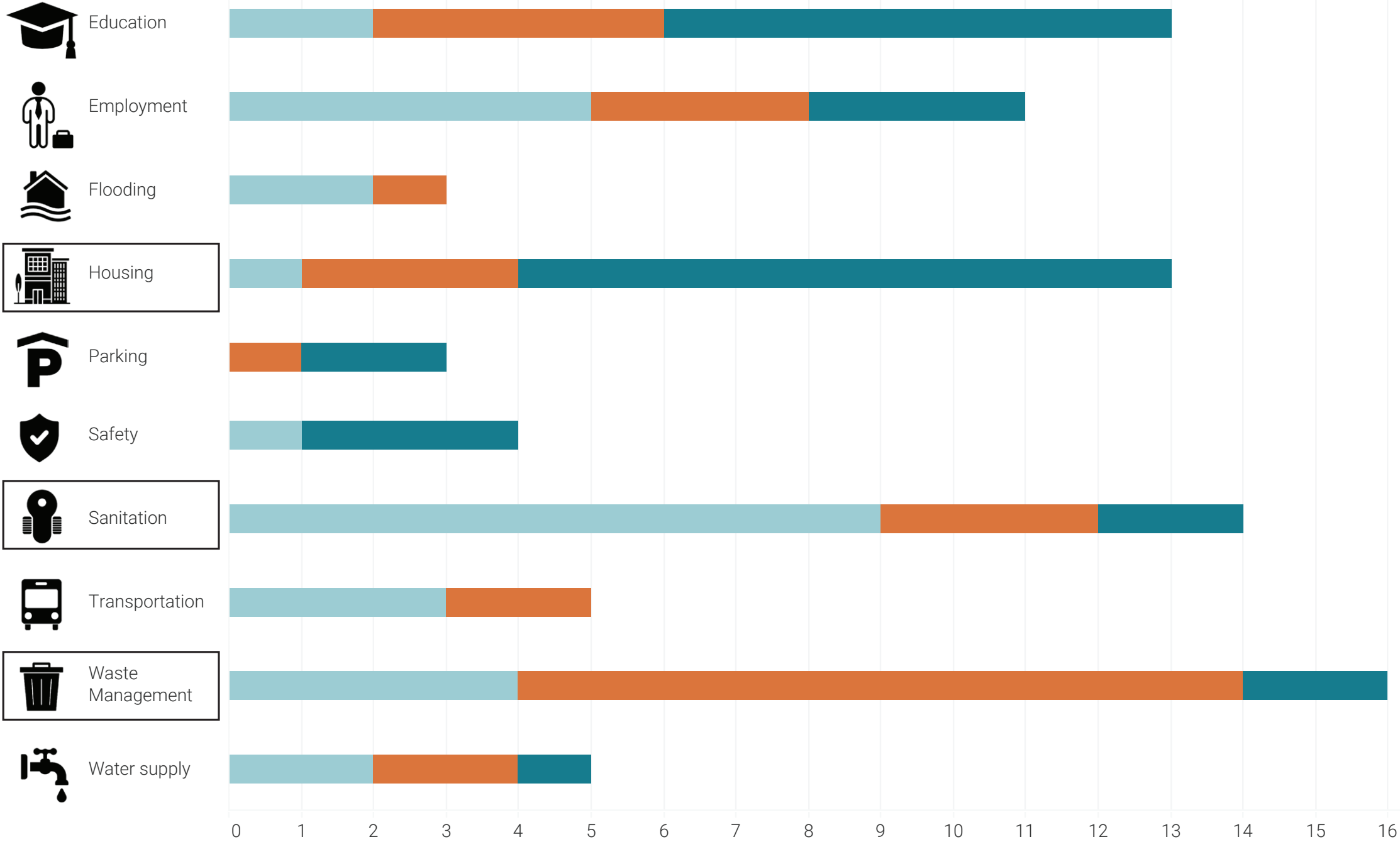
Survey

- Age: 10 -71 years
- Duration of stay: ~15 - over 40 years



60% 40%

Top three Problems



Source: Author's own survey

Hope we have a toilet in my house



Age: 15
Occupation: Student
Location: Ambewadi

Site Analysis

Waste collection and disposal system

- LEGEND
- Door to door waste collection or ULB service
 - Garbage bin disposal
 - Open garbage disposal
 - Along/ Inside canal or Inside gutter
 - Garbage Bin
 - × Open garbage area



Map showing waste collection system
Source: Shelter Associates, Google Earth, Geofabrik

Toilet Availability

- LEGEND
- All defecate in open
 - Own toilet
 - Use Community Toilet
 - Community Toilet
 - 50 M Radius
 - Open defecation spot

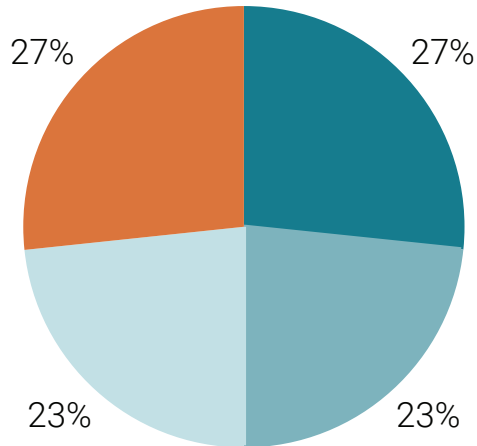


Map showing toilet availability
Source: Shelter Associates, Google Earth, Geofabrik

Survey

Involvement and Decision-making

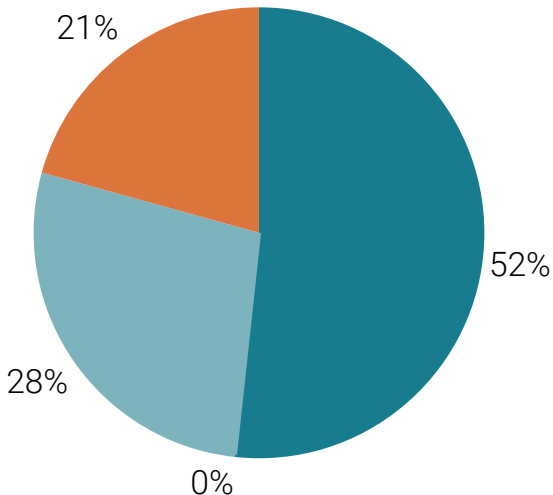
- Yes
- Get involved only when things go wrong
- Maybe
- No, (I trust the politician to take decision)



Source: Author's own survey

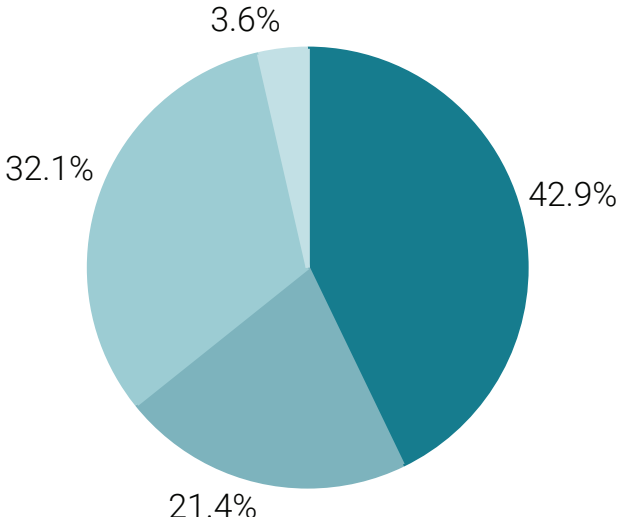
Level of interest in involvement in planning or decision-making

- Local scale participation
- City scale decision making
- Both
- None



Planning scale at which participant would like to be involved

- Methods
- Meetings and discussions
 - Surveys
 - Social media/ technologically involved
 - NGO



Involvement in planning or decision-making

We must do something to clean the garbage

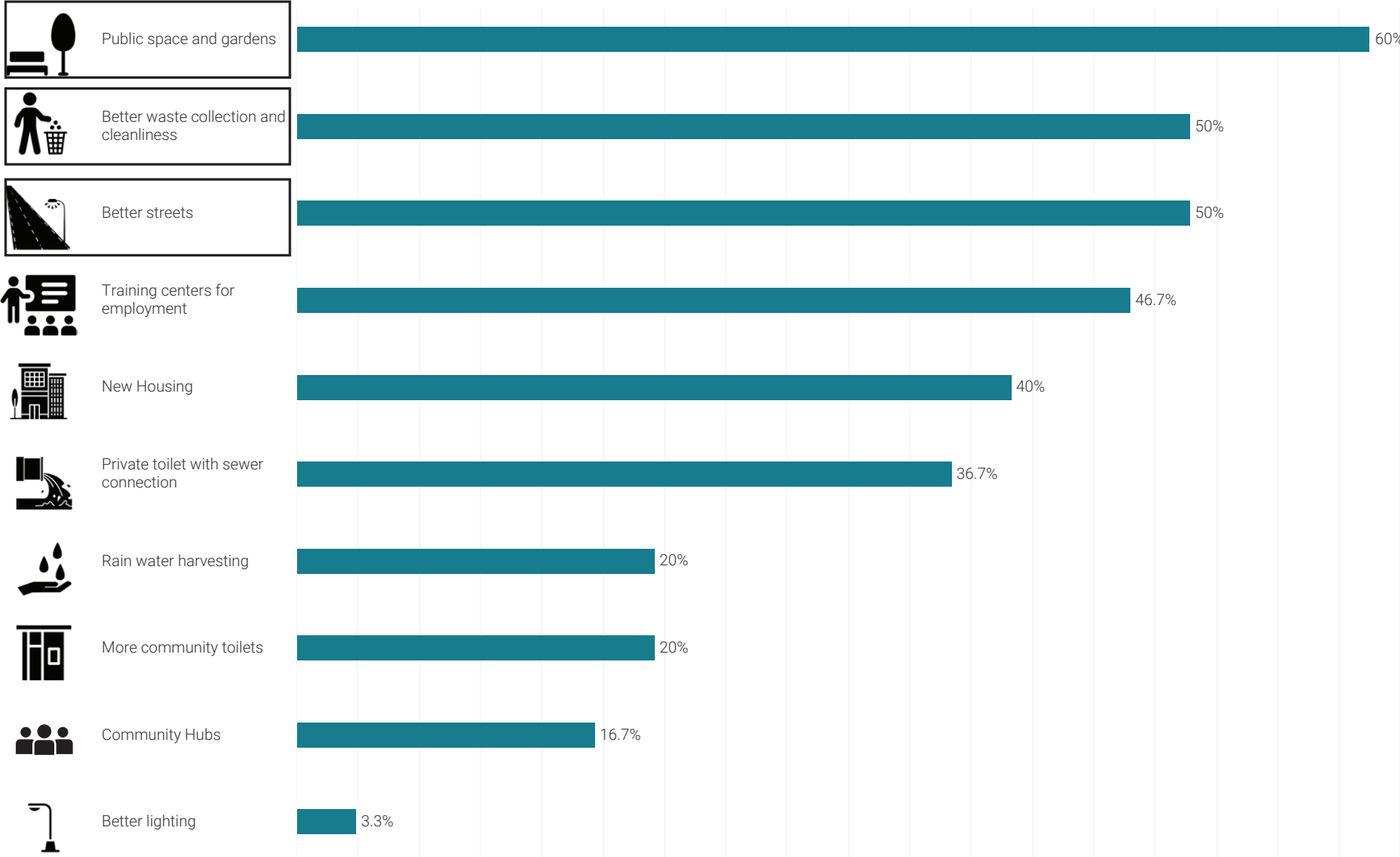


Age: 67
Occupation: Retired Postman
Location: Sathe Nagar

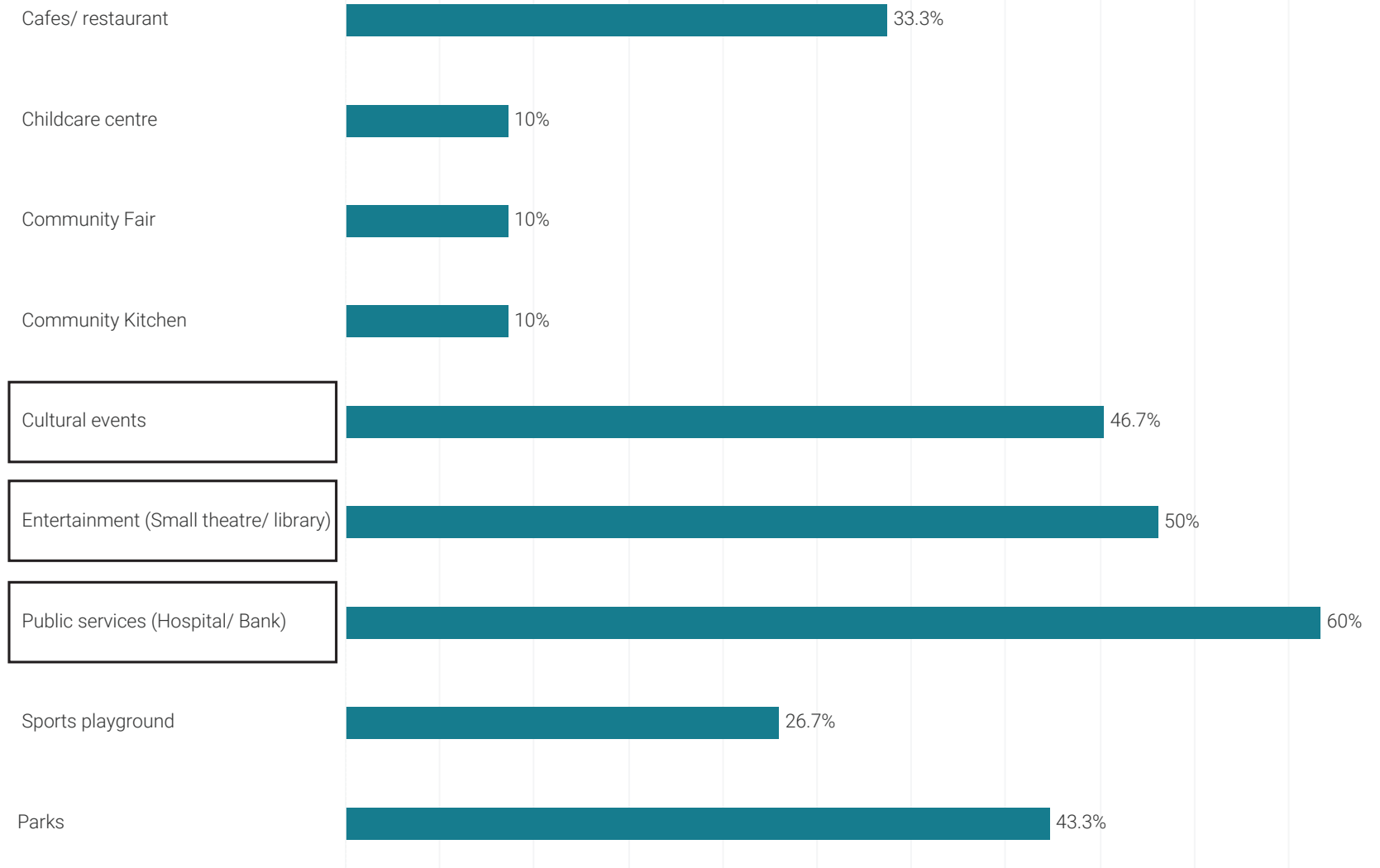
Source: Author's Own Survey

Survey

Possible Changes/ solutions



Public space activities



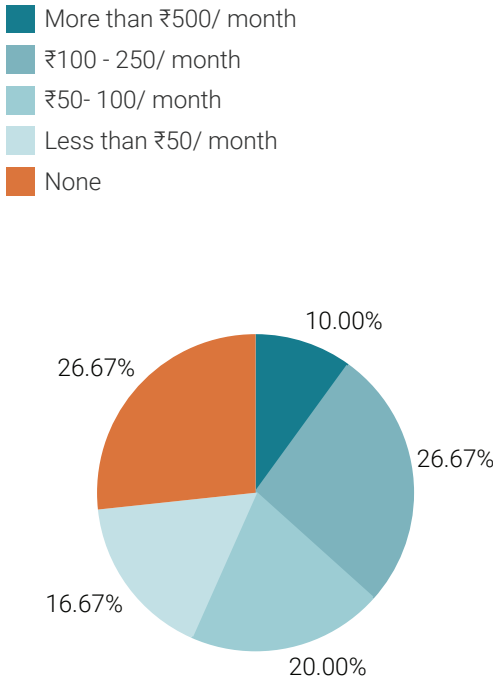
There is no playground to play in after school



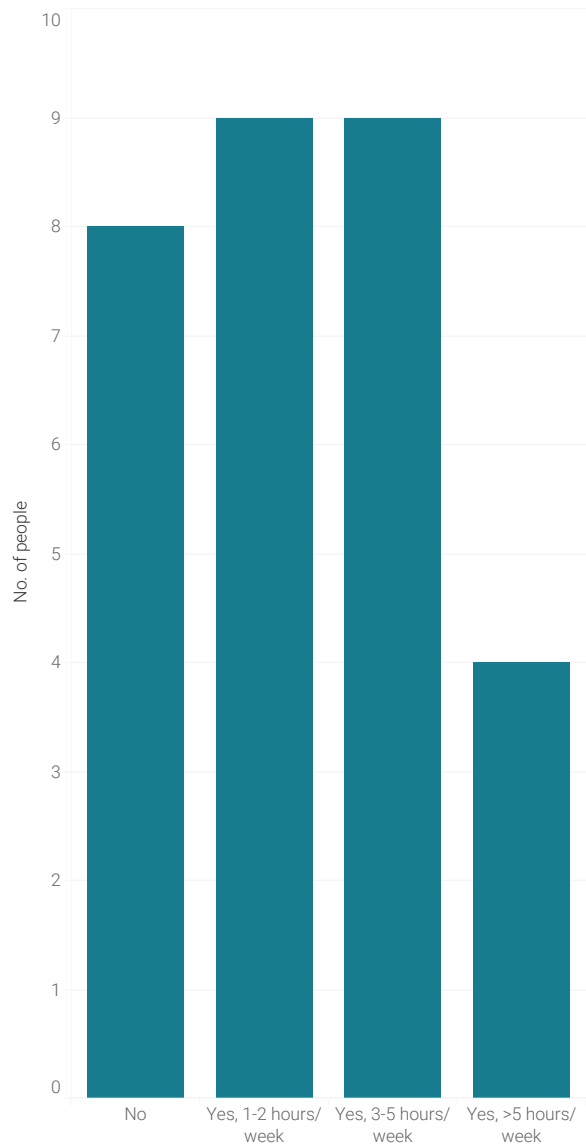
Age: both 10
 Occupation: Student
 Location: Indira Nagar Source: Author's own survey

Survey

Responsibility and Contribution



Willingness of monetary contribution for area improvement



Willingness of time contribution for building and maintenance

Support system



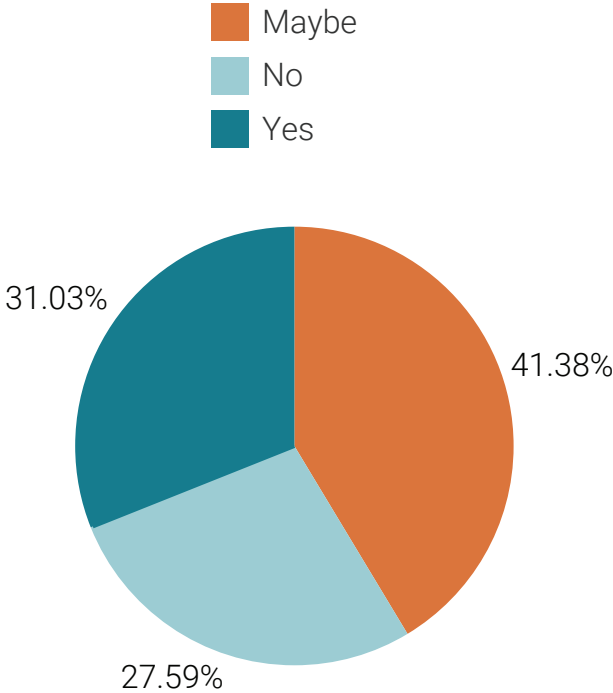
How to cross this crowded street?



Age: 43
Occupation: Housewife
Location: Sathe Nagar

Source: Author's own survey

Smart City Perspectives



Awareness about Smart City among residents

Source: Author's own survey

"SMART is exclusion of improving health services, transportation facilities, SWM, sewerage system, water supply but inclusion of wi-fi, Digi thane and beautification"

" SMART city promotes SMART governance without participation and transparency at municipal body."

"SMART city does not recognise 'migrant workers' and their 'Nakas'"

Smart means efficient system around. Better Transport, Medical Facilities, Parks, Schools, and Hospitals.

Age: 72
Occupation: Shopkeeper
Location: Ambewadi

Link to main city activities

Age: 42
Occupation: Auto-rikshaw driver
Location: Indira Nagar

Good roads, Better Sanitation and Cleanliness

Age: 37
Occupation: Medical Representative
Location: Ambewadi

Not seen in my area. Government should develop our area under Smart City Project

Age: 64
Occupation: Retired Auto driver
Location: Rupadevi pada

"SMART city does not cover planning for citizens but planning of infrastructure.";

"SMART city is only about real estate development and grabbing the land parcels within city."

Source: Author's Own Survey, Thane Smart City Report, 2016-18

Conclusions

Potentials	Challenges
<ul style="list-style-type: none">• Locational advantage - connectivity to city• Booming IT industry in area• Interest in education• Informal shops - new business opportunities• Existing social and socio-economic networks• Community willingness to participate• Surrounded by ecology	<ul style="list-style-type: none">• Topography - Sloping hill• Congested and very high density• Forest surrounding and preservation act• Industries closing - leading to loss of employment• Poor sanitation and waste management• Lack of pre-school for children• Lack of open space• Lack of space in alleys and local narrow streets

Potentials and Challenges

Source: Drawn by Author

Problem Premise

Approach definition

Case Study - Thane City

Strategic Framework - Smart Slum Upgrading Program

Conclusion and Recommendation

Propose

SQ 3

What are the effective spatial strategies and design principles for informal area in-situ upgradation?

Politicize

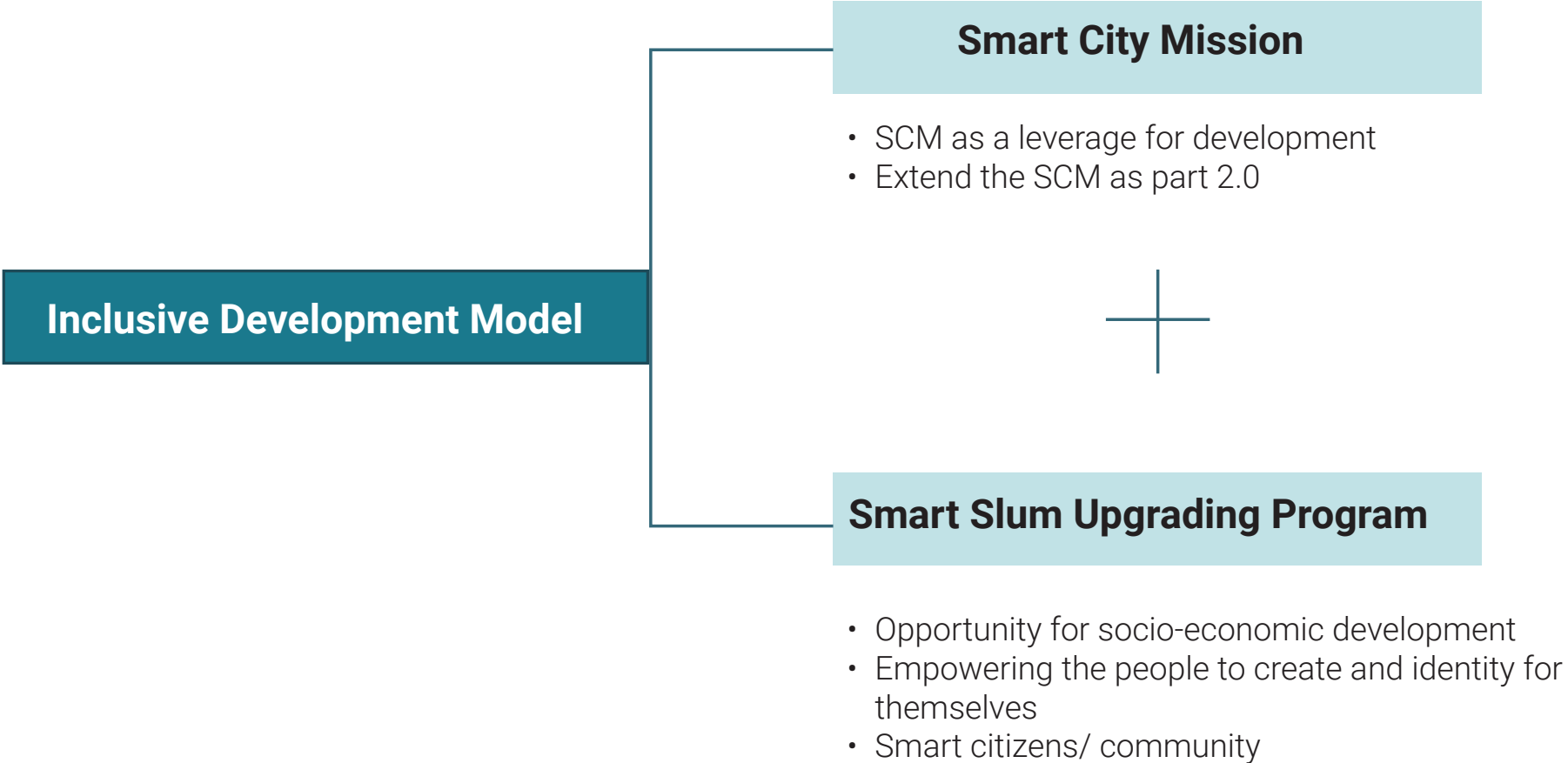
SQ 4

How can collaborative planning based on community-based self-organization in informal settlements help to build a more inclusive and just smart city of Thane?

SQ 5

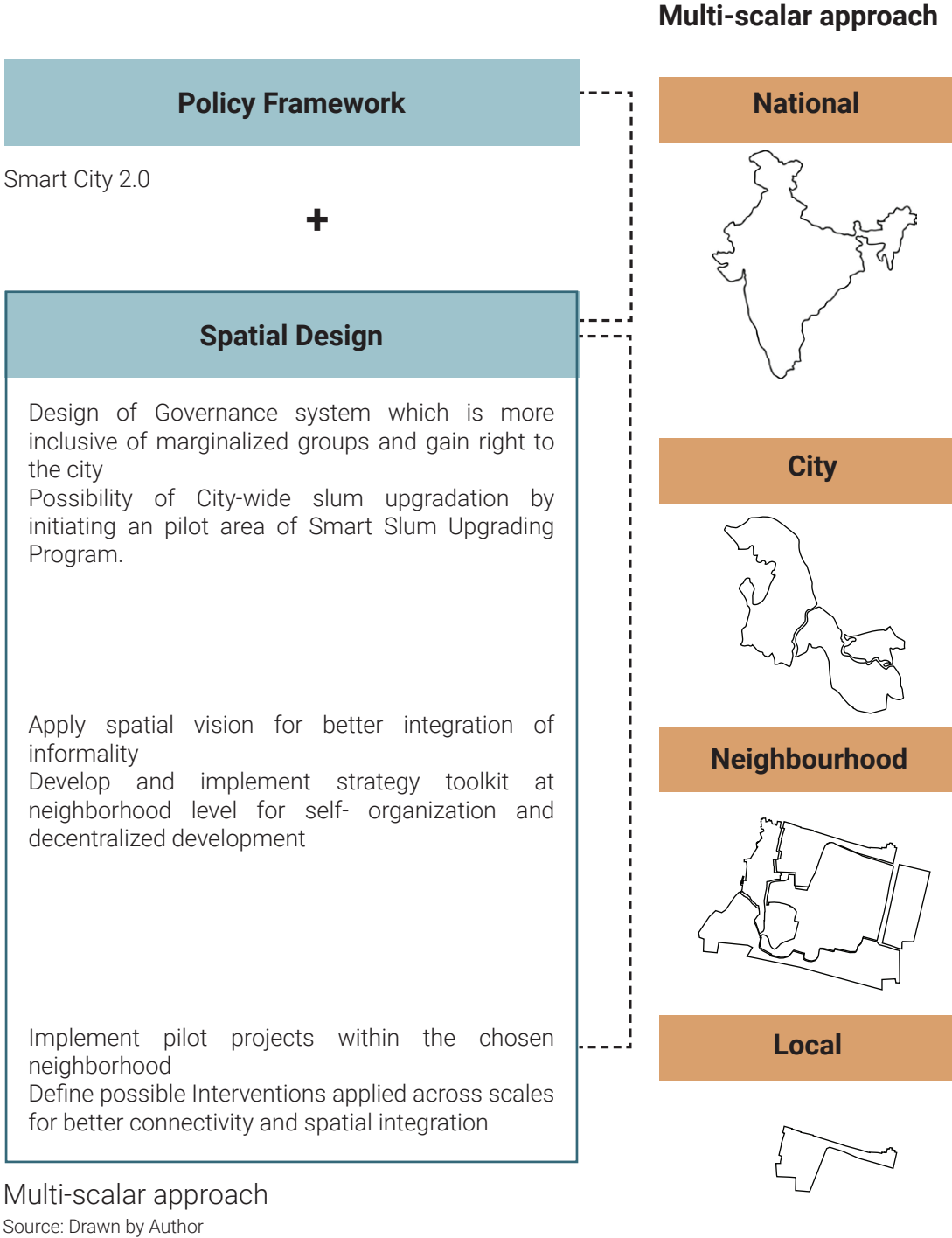
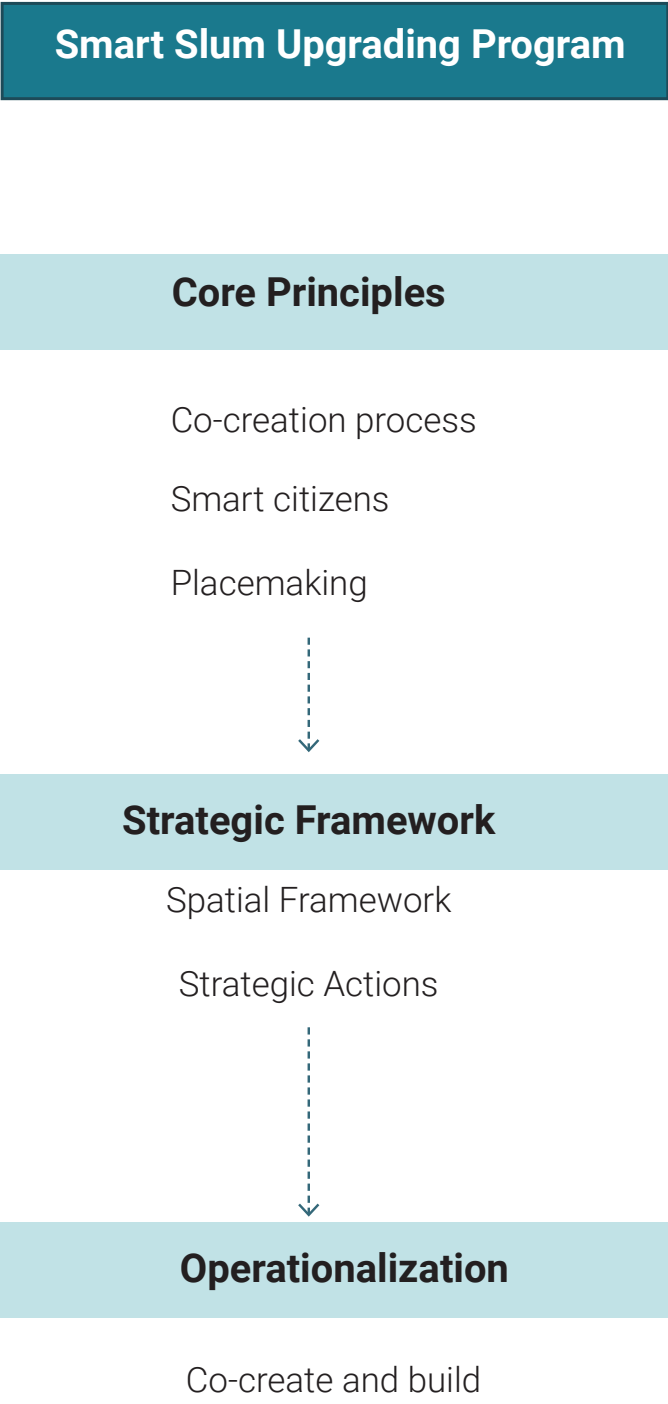
How can we judge the 'official' Smart City Mission and how should it be adjusted towards a smart slum strategy?

Smart City Revisited

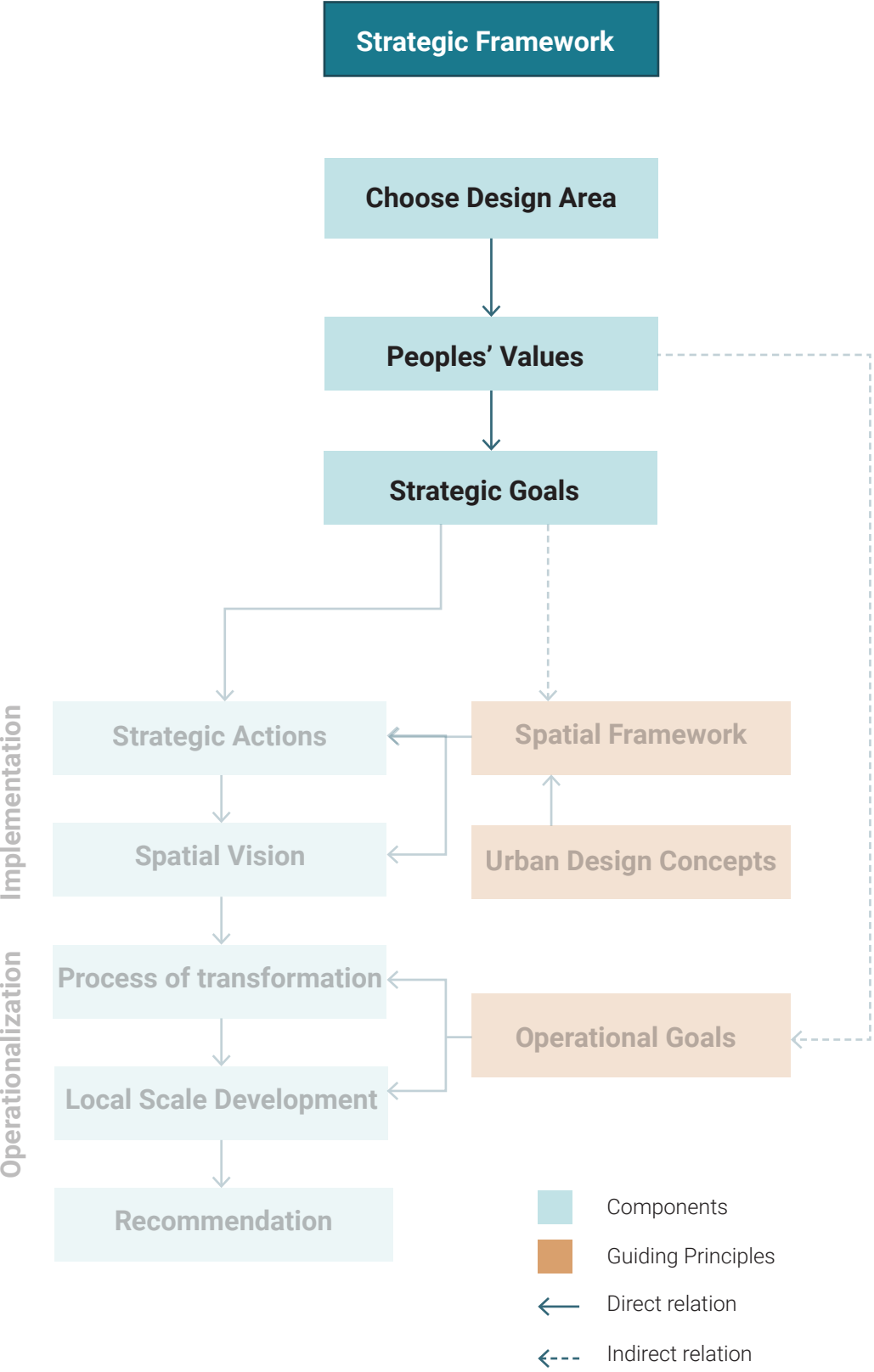


The Approach: Smart Slum Upgrading Program

- Lasts for short duration usually upto 5 years
- Lacks integration of stakeholder capacities - specially at local level participation
- Lack of synergy between one program to the next causing dis-continuation
- No spatial continuity in execution of infrastructure
- High investment funding



Strategic Framework



Component of Strategic Framework
Source: Drawn by Author

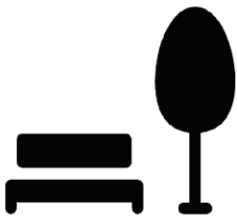
Strategic Goals



Ease of Accessibility



Basic Services and sanitation



Collective public space



Improve local conditions



Enhance socio-economic opportunities

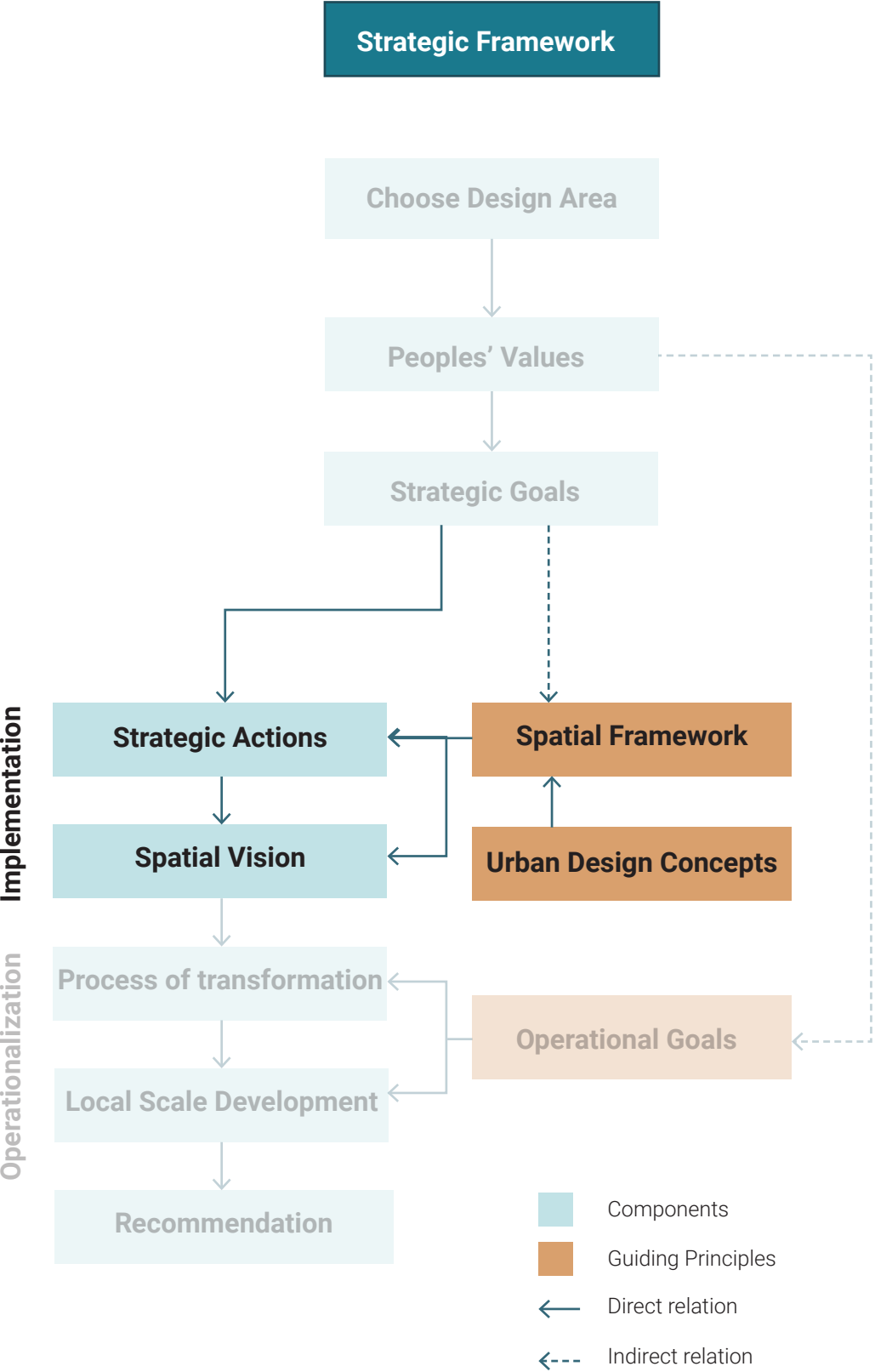
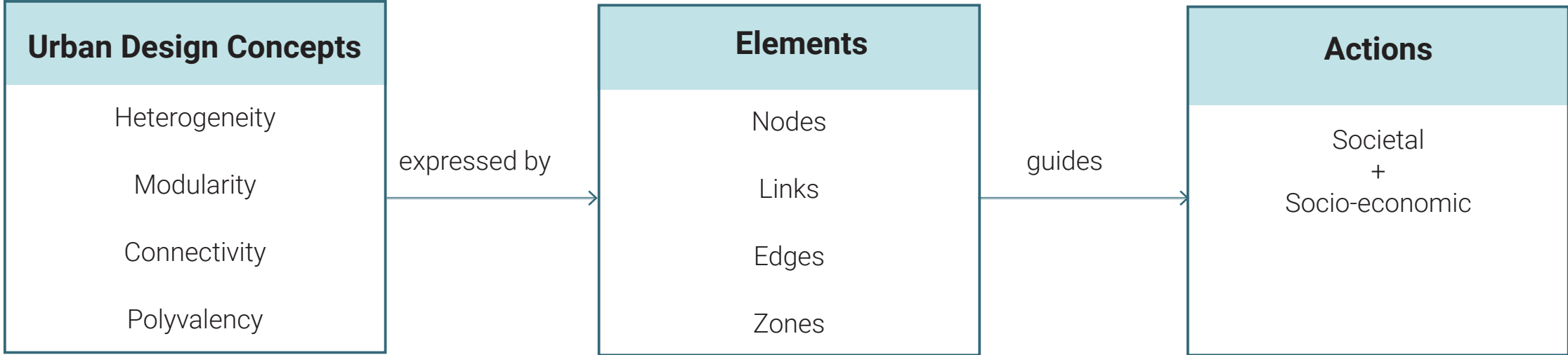


Social Empowerment



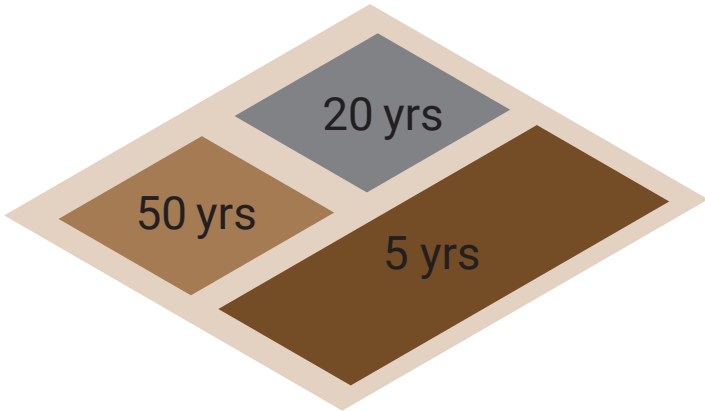
Inclusive process

Implementation



Component of Strategic Framework
 Source: Drawn by Author

Urban Design Concepts

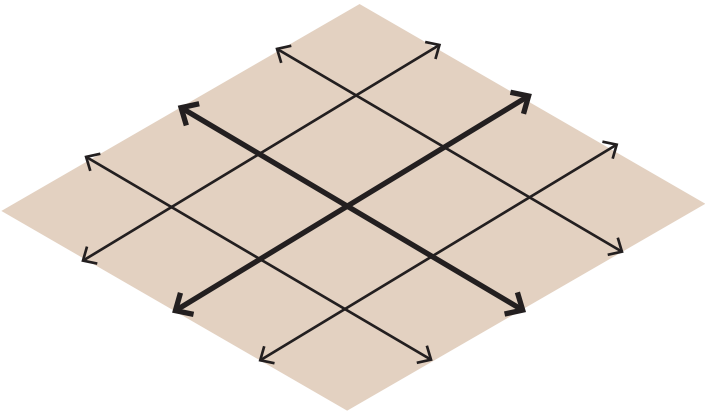


Heterogeneity

Combination of elements with different age-spans and design clarity

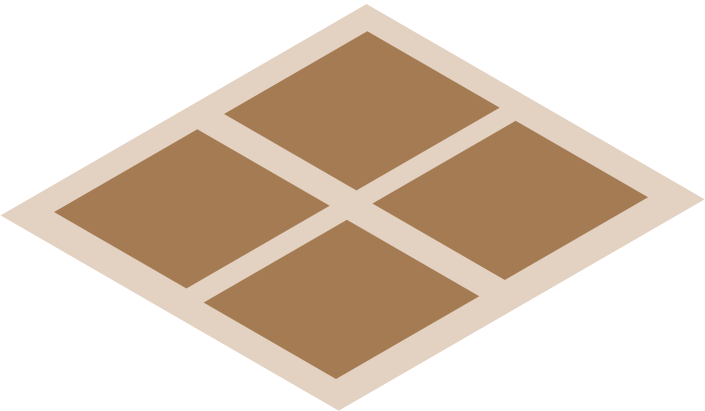
Linked to the incremental transformative character of the space that allows it to adapt and change over time

Source: Dhar & Khirfan, 2017



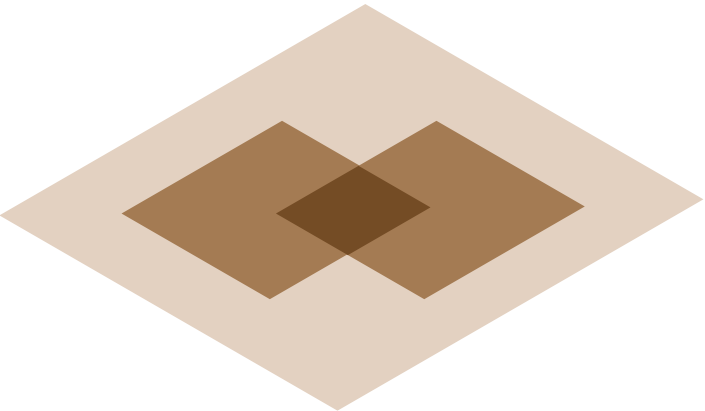
Connectivity

Networks and accessibility within the area and to the formal city



Modularity

Redivision and forming local smaller spatial divisions, creating decentralization for better restructuring, design and governance.



Polyvalency

Multifunctional spaces within the limited space available in the high density area and the optimization of the use of such spaces

Spatial Framework

Elements

● **Nodes**

- Cultural Node
- Living Node
- Service Node

↔ **Links**

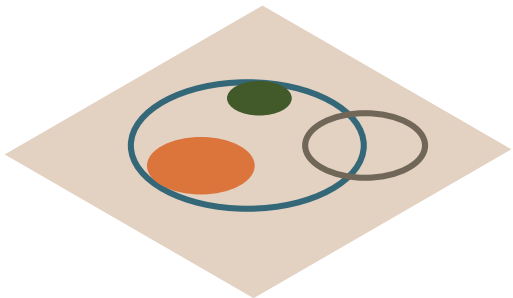
- Primary pedestrian network - strengthening existing links
- Multi-functional streets
- Commercial corridors

||||| **Edges**

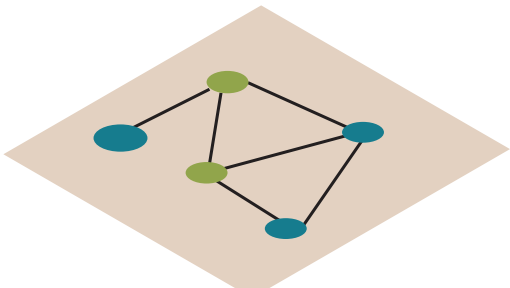
- Buffer area along natural boundaries
- Interacting with physical edges

■ **Zones**

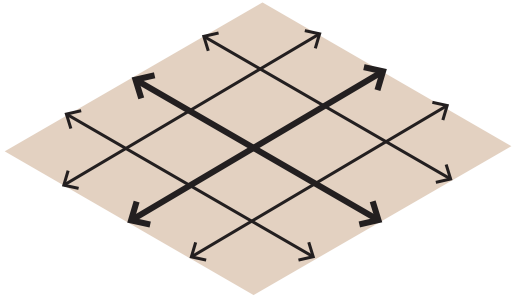
- Multi-functional spaces
- Community square
- Densification/ Restructuring of housing zone



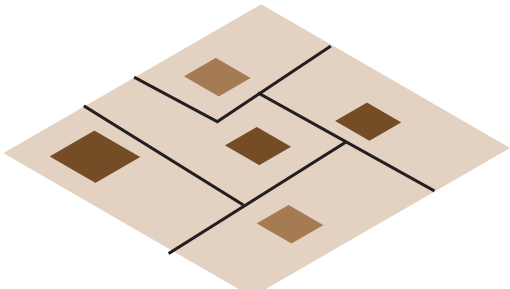
Overlap of functions
Polyvalency



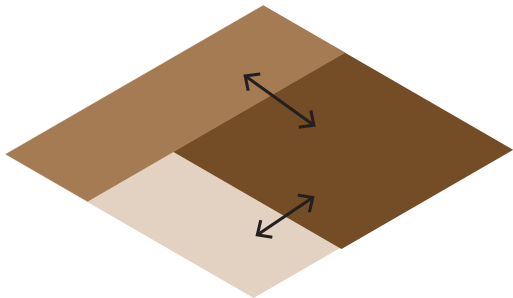
Attractor points
Connectivity



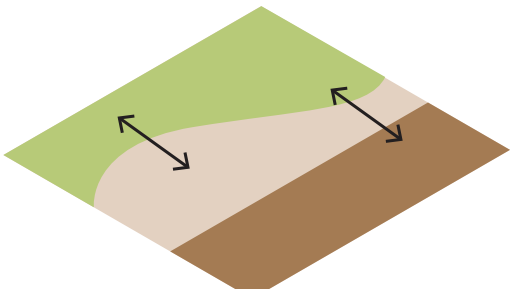
Making links and routing
Connectivity



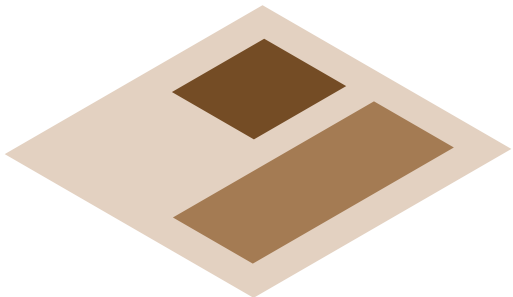
Local divisions
Modularity



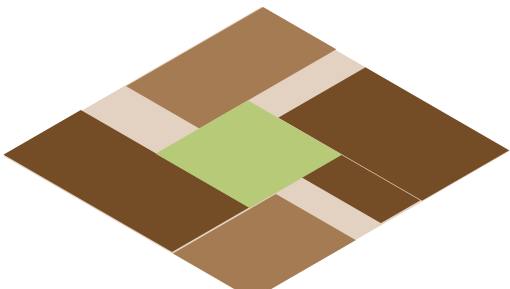
Functional edges
Polyvalency



Activating natural edges
Connectivity



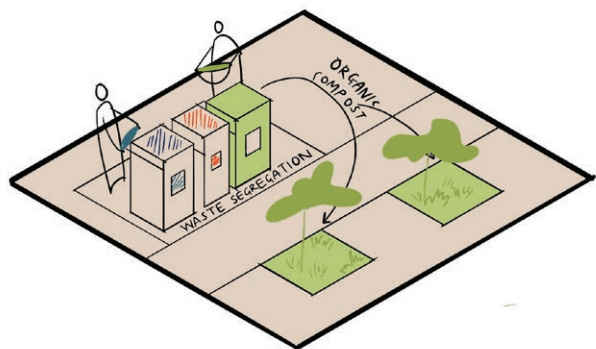
Agglomeration of spaces
Heterogeneity



Spaces for collective use
Modularity

Strategic Actions

Basic Services and sanitation

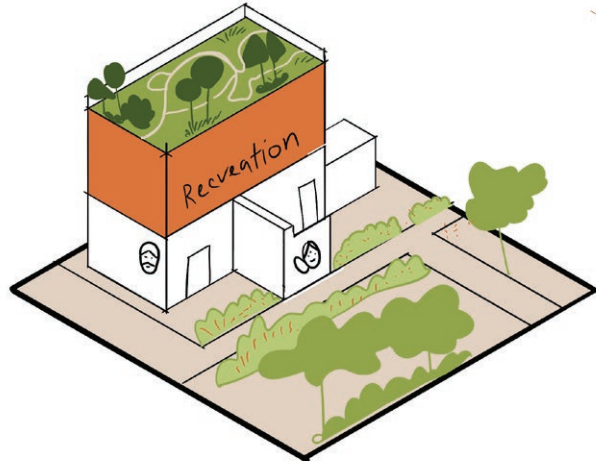


Facilitating waste collection and segregation

Avoid waste dumping in open grounds and along canal. Providing wet and dry segregation waste points along with waste composting for community gardens. Educate residents about using them.

Stakeholders:

- TMC - Solid Waste Management
- NGO
- Youth groups
- Residents

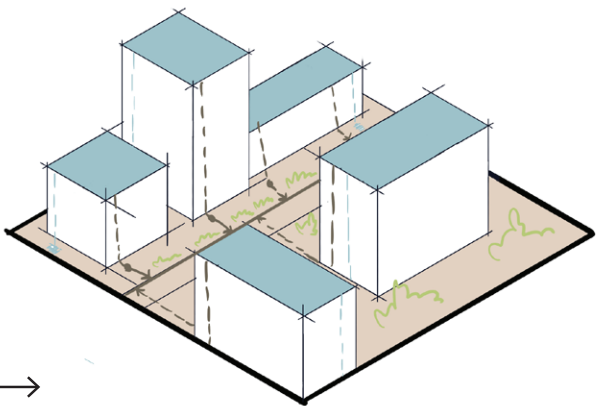


Provision of community toilets with additional facilities

To tackle open defecation and reduce walking distances to the toilet, create safe spaces around these areas by mixed-use facilities

Stakeholders:

- TMC - Sewerage Department
- Public Works Department
- Community Development Department
- Architect and urban designers
- Private companies
- NGO
- Residents



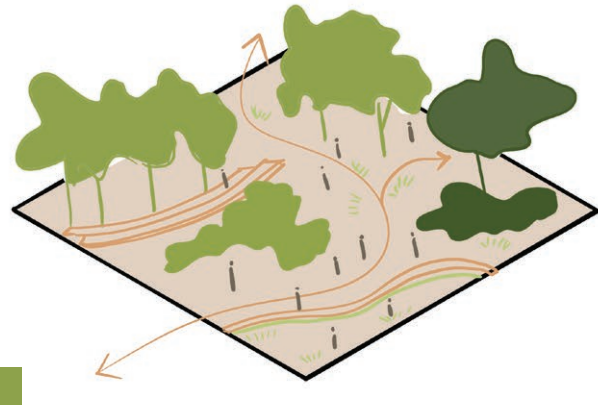
Laying sewerage network

Establishment of sewer lines or converting drainage line to sewer which allows households to build private toilet within them.

Stakeholders:

- TMC -Sewerage Department
- Ward Committee
- NGO
- Residents

Collective public space

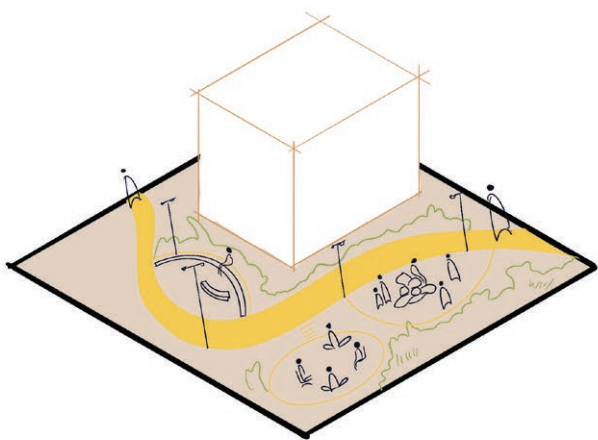


Create public squares and parks

Open spaces for all residents to interact, for children to play. Create green spaces improving ecology

Stakeholders:

- TMC - Public Works Department
- Garden Authority
- Urban Designer, Landscape Architect
- Private companies,
- NGO,
- Residents

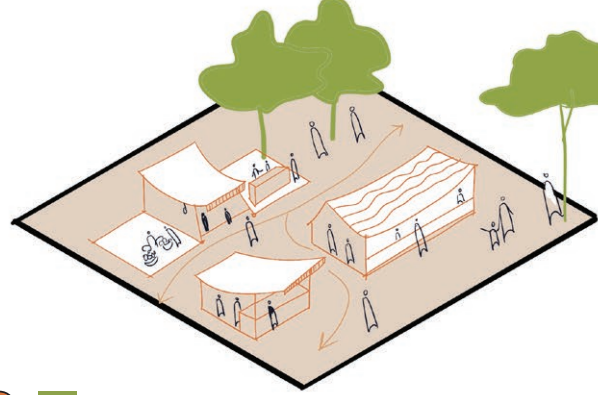


Activate Cultural spaces

Temples that extend into cultural spaces and enables public gatherings for festivals, a sense of community and belonging.

Stakeholders:

- TMC - Public Works Department
- Ward committee
- NGO
- Architect and urban designers
- CBOs, FBOs
- Residents



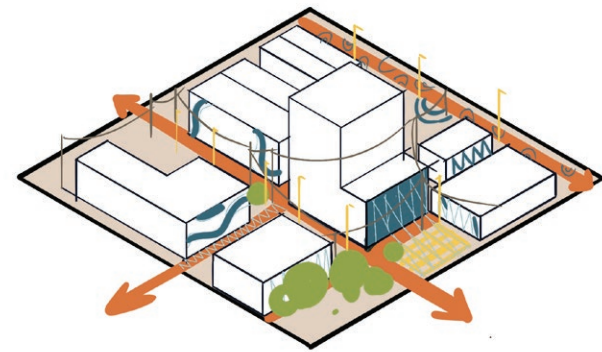
Facilitate space for markets and fairs

Driving a local economy and entrepreneurship with the provision of dedicated and convertible market spaces.

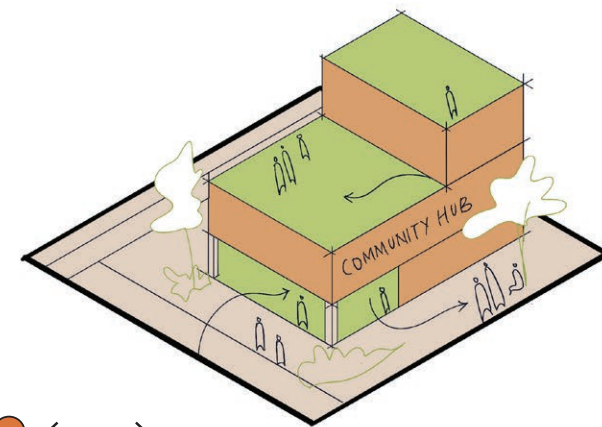
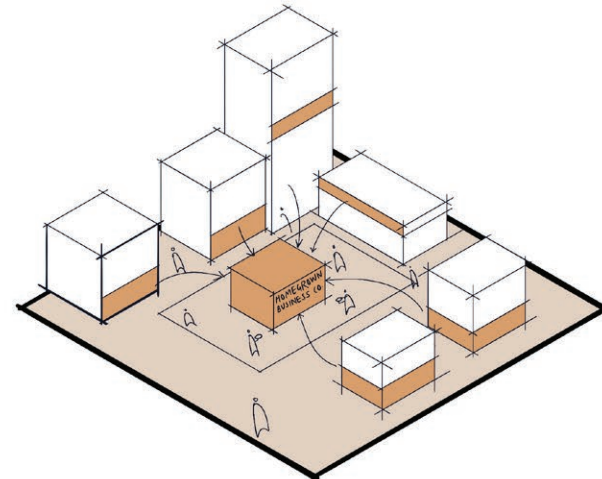
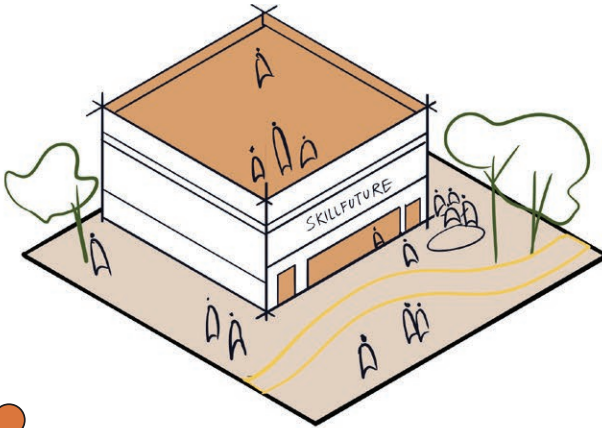
Stakeholders:

- TMC - Public Works Department
- Ward committee
- Local businesses
- Architect and urban designers
- Vendors
- NGO
- CBOs

Ease of Accessibility



Enhance socio-economic opportunities



Improving streets and creating connections

Shortening commute time and creating alternative routes to destinations increases safety and liveability of the area.

Stakeholders:

- TMC - Public Works Department
- Ward committee
- Youth groups
- CBOs, FBOs
- NGO
- Residents

Create skill training centres

New and In demand skills required by new industries will enable individuals towards becoming self sufficient, independent and contributing members of the neighborhood.

Stakeholders:

- Private companies
- NGO
- Architects and Urban designer
- Research institutions
- Youth groups
- Residents

Provide platform for home-based industries

Creating identity for local-based industries by giving them platform to expand and collaborate with other businesses.

Stakeholders:

- Local businesses
- CBOs, SHGs
- NGO
- Youth groups
- Residents

Build community hubs

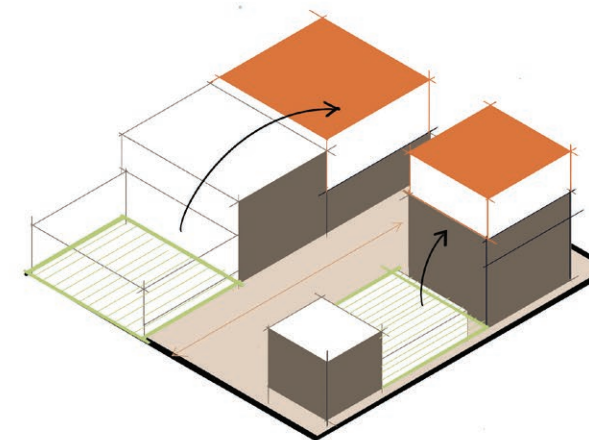
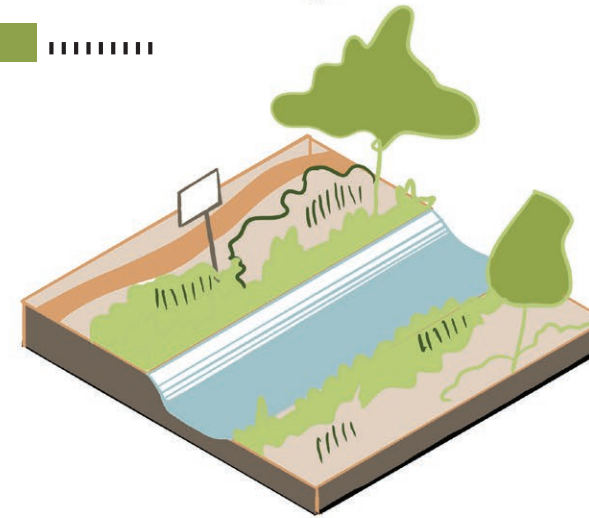
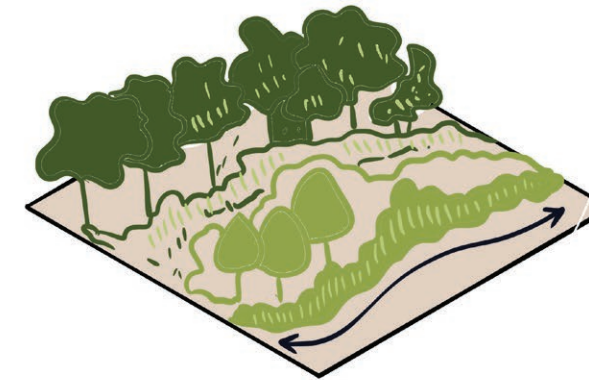
A location that brings the community together by providing spaces for conducting meeting, celebrations and other community building activities.

Stakeholders:

- Ward committee
- Architects and urban designers
- Youth groups
- CBOs, FBOs
- NGO
- Residents



Improve local conditions



Create buffer areas near forest

Community gardens and food forests that function as a buffer will enable residents to give and take from the community at large while providing safety to the forest and its inhabitants.

Stakeholders:

- Forest department
- TMC - Garden Authority
- Research Institutes
- Landscape Architect
- Youth groups
- CBOs
- NGO
- Residents

Canal revitalization

Cleaning of the existing canal will provide space for recreation, relaxation and place for informal gatherings. Educate the people not to dispose waste in the canal.

Stakeholders:

- TMC - Public Works Department
- Water department
- Landscape Architect
- Private companies
- Youth groups
- NGO
- Residents

Restructuring and upgrading housing

Restructuring housing will provide opportunities to improve the streets, create public spaces and modern living spaces. Upgrading allows for experimentation with social housing and community living.

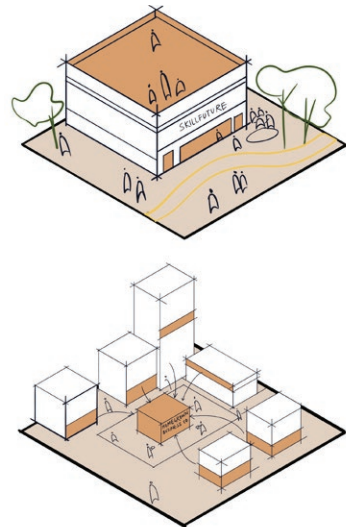
Stakeholders:

- TMC - SRA
- Private companies
- Ward Committee
- Architects and urban designers
- CBO
- NGO
- Residents

Spatial Framework Layers

Nodes

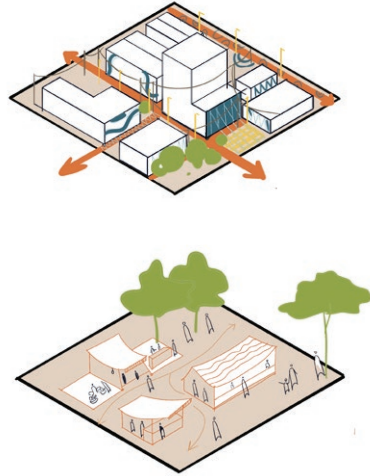
- Cultural Node
- Living Node
- Service Node



Source: Drawn by Author, Google Earth, Geofabrik

Links

- Primary pedestrian network - strengthening existing links
- Multi-functional streets
- Commercial corridors

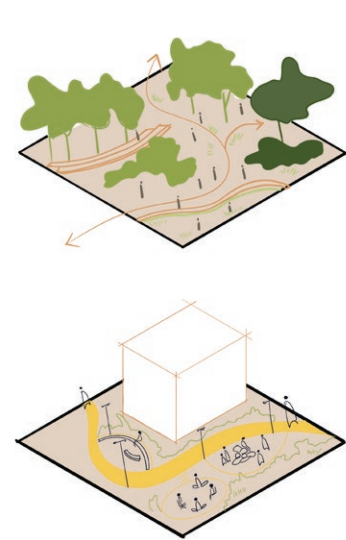


Source: Drawn by Author, Google Earth, Geofabrik, Shelter Associates

Spatial Framework Layers

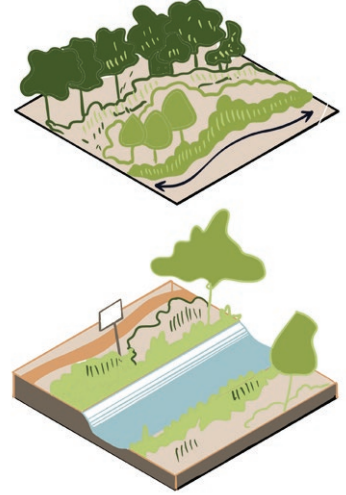
Zones

- Multi-functional spaces
- Community square
- Densification/ Restructuring of housing zone



Edges

- Buffer area along natural boundaries of canal and forest
- Interacting with physical edges



Spatial Vision

Improved daily wage worker square

Composition of temporal and long-term design projects
Heterogeneous space

Multifunctional public square
Polyvalent space

Accessibility to better streets and shorter routes
Connectivity

Grouping of housing clusters within neighbourhoods
Modularity

Public space with garden shared with different social groups



Legend

- Cultural, Living, Service Node
- Nodes of integration with context
- Open spaces/ squares
- Buffer areas with ecological boundaries of forest
- Buffer areas along the canal
- Strengthen and create new links to improve connectivity of nodes
- Amenities
- Shops

Phasing

Operational Goals



Social Empowerment



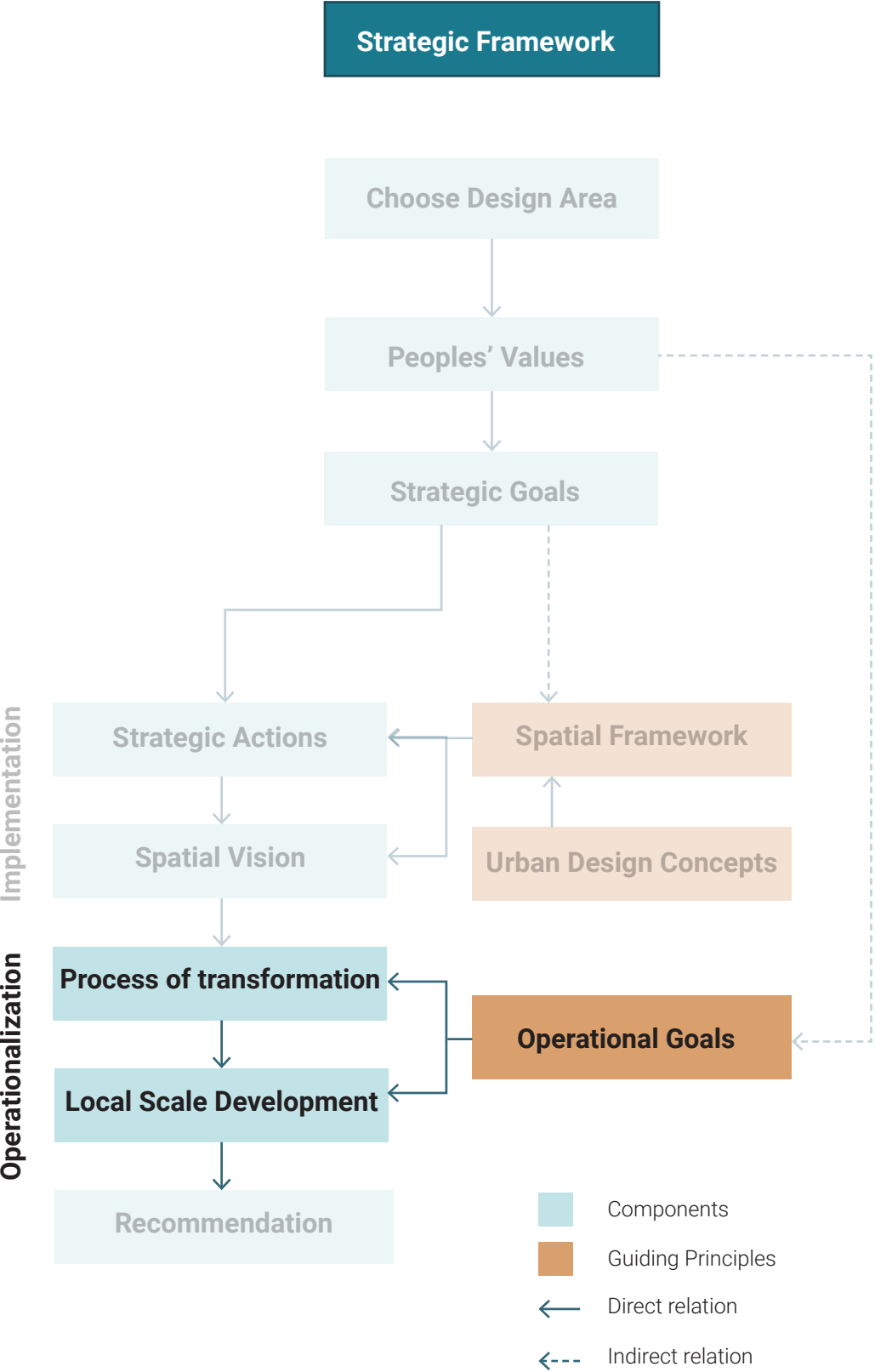
Inclusive process



Phase 1 Activation Phase	Phase 2 Planning and Design Phase	Phase 3 Implementation Phase	Phase 4 Evaluation and Monitoring Phase
<p>Setting up the conditions for an alternative development process</p> <p>Mobilizing the community and developing capacity and trust</p>	<p>Co-creating a vision for the area along with multiple stakeholders</p>	<p>Execution of the design projects as per to attain the objectives</p>	<p>Monitoring the projects and maintenance by the community.</p> <p>To reflect and build upon the existing interventions and evaluate existing policy accordingly</p>

Phases of operation

Source: Drawn by Author



Component of Strategic Framework

Source: Drawn by Author

Operationalization

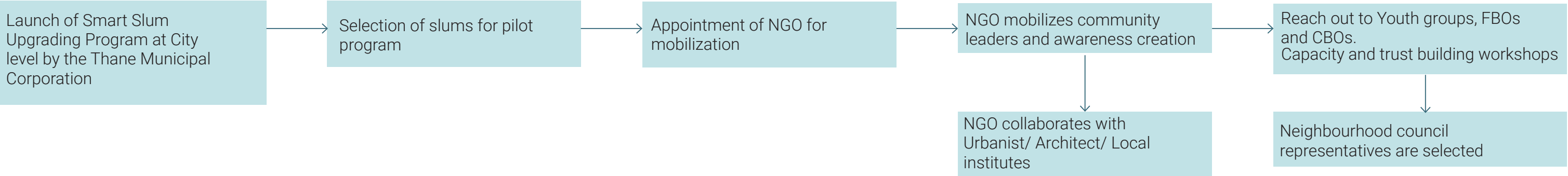


Phase 1: Activation Phase

Phase 2: Planning and Design Phase

Phase 3: Implementation Phase

Phase 4: Evaluation and Monitoring Phase

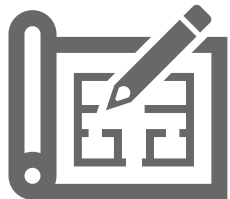


Actor	Role	Capacity
Thane Municipal Corporation	Program development	Implement schemes
Thane Smart City Limited (SPV)	Assist in selection of NGO	Defining the details of the scheme
Ward committee	Interact with NGO and neighbourhood representatives	Conducting public meetings
NGO	Develop strategy for awareness and mobilization	Determine mobilization methods
Youth groups, CBOs, FBOs	Organize activities to create community awareness and mobilization	Communicate with neighbourhood residents and members of the groups
Residents	Elect neighborhood representative	

Phase 1: Actor's role and capacity

Source: Drawn by Author

Operationalization

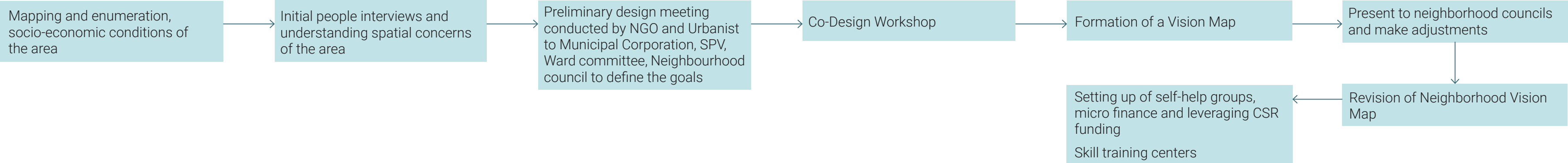


Phase 1: Activation Phase

Phase 2: Planning and Design Phase

Phase 3: Implementation Phase

Phase 4: Evaluation and Monitoring Phase



Actor	Role	Capacity
Thane Municipal Corporation	Review and approve the plans	Aligning goals with existing schemes and policies
Ward committee	Participates in vision plan formulation	Participates in vision plan formulation
Urbanist	Formulate the community objectives into vision map	Translate needs in spatial needs
Neighbourhood councils	Represent citizens opinions and requirements	Provide requirements and validate design
NGO	Conducting meeting with government and resident groups	Conduct people surveys, intermediate body
Residents	Present needs and engage in design process	Validate design with neighbourhood council

Phase 2: Actor's role and capacity
Source: Drawn by Author

Operationalization



Phase 1: Activation Phase



Phase 2: Planning and Design Phase



Phase 3: Implementation Phase

Phase 4: Evaluation and Monitoring Phase



Community Cleanup

Source: Community Design Agency



Planning with the community

Source: Community Design Agency

Operationalization



Phase 1: Activation Phase



Phase 2: Planning and Design Phase



Phase 3: Implementation Phase



Phase 4: Evaluation and Monitoring Phase

Reflect and evaluate on the initial projects

Satisfaction survey

More independence to neighbourhood councils for next project initiation

Future improvements for sustainable building, living and working spaces



Playground spaces for children

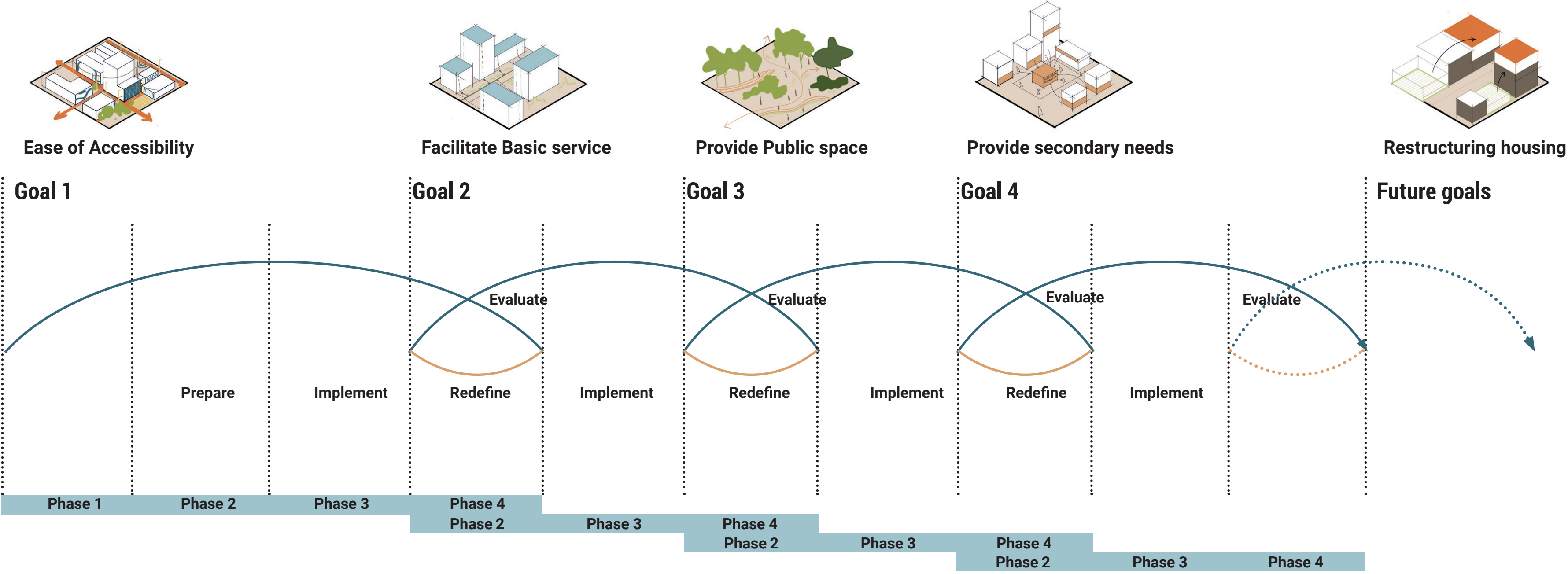
Source: Anukruti Organization



Planning with the community example

Source: CURE India

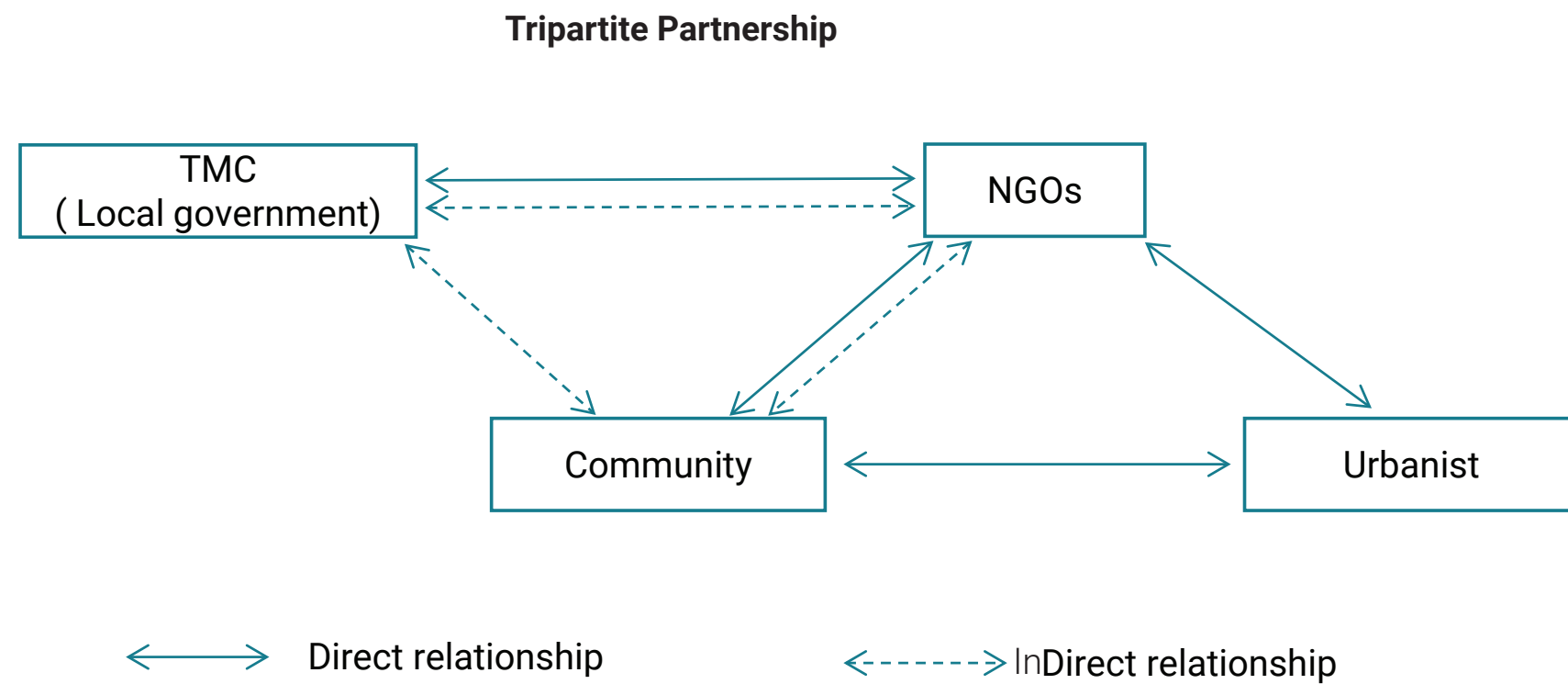
Process of Transformation



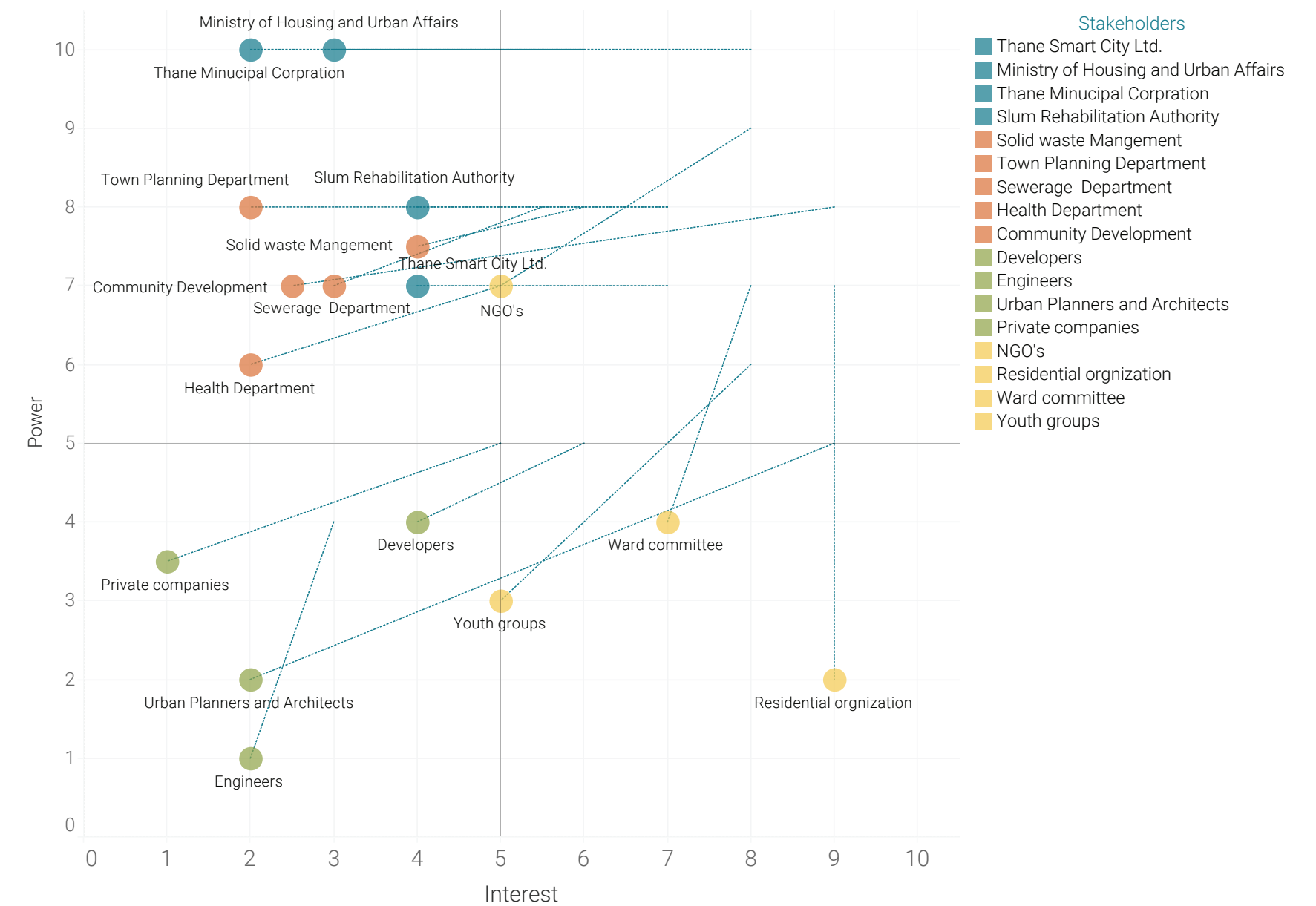
- Phase 1: Activation Phase
- Phase 2: Planning Phase
- Phase 3: Implementation Phase
- Phase 4: Evaluation Phase

Source: Drawn by Author

Stakeholder Engagement



Tripartite partnership
Source: Adapted by Author, Trivedi, 2016



Existing - Power-Interest Matrix with dynamic shift
Source: Drawn by Author

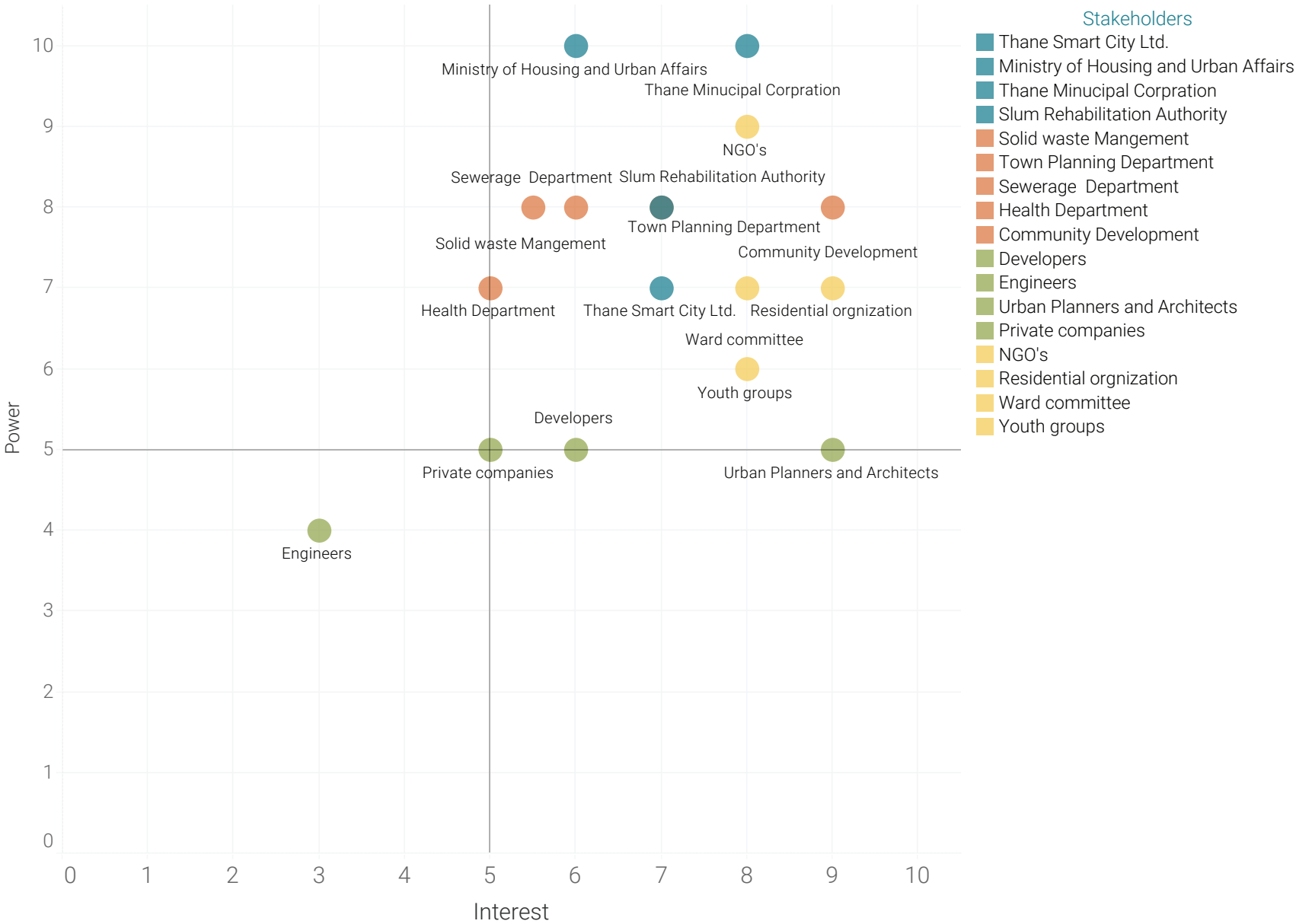
Stakeholder Engagement

Stakeholder responsibility matrix

Elements	Conventional development								Proposed System							
	Planning		Implementation				Maintenance		Planning		Implementation				Maintenance	
	Settlement Planning	Finance provision	Physical Infrastructure	Community services	Housing redevelopment	Labour	Management	Labour	Settlement Planning	Finance provision	Physical Infrastructure	Community services	Housing redevelopment	Labour	Management	Labour
Stakeholders																
Local government																
Ward committee																
NGO																
Youth group, CBOs and FBOs																
Residents																
Neighbourhood council																
Urbanist																

Stakeholder responsibility matrix

Source: Adapted by Author, UN-Habitat, 2014









Existing - Power-Interest Matrix

Source: Drawn by Author

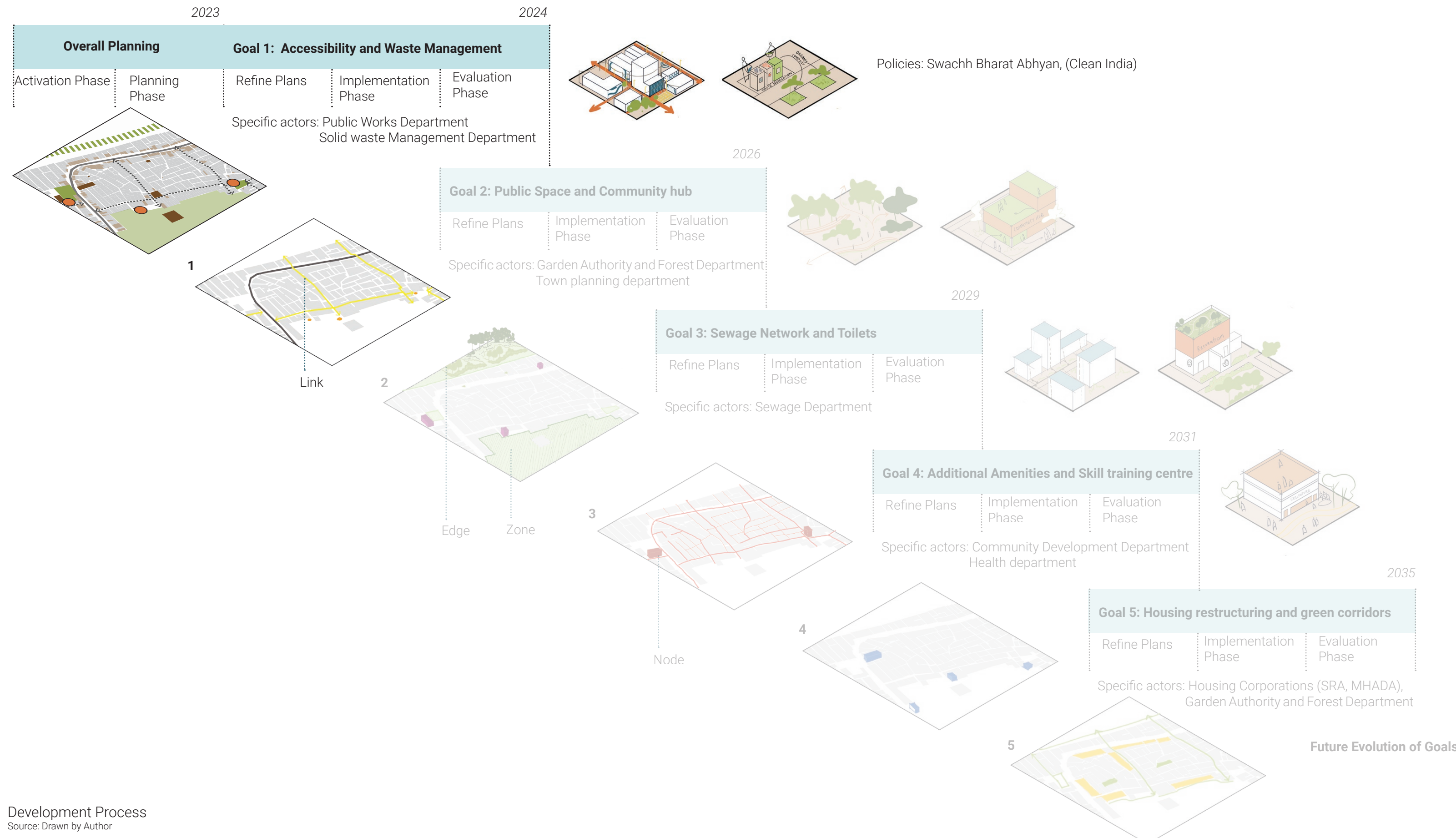
Local design area

Legend

-  Cultural, Living, Service Node
-  Open spaces/ squares
-  Buffer areas with ecological boundaries of forest
-  Strengthen and create new links to improve connectivity of nodes
-  Amenities
-  Shops

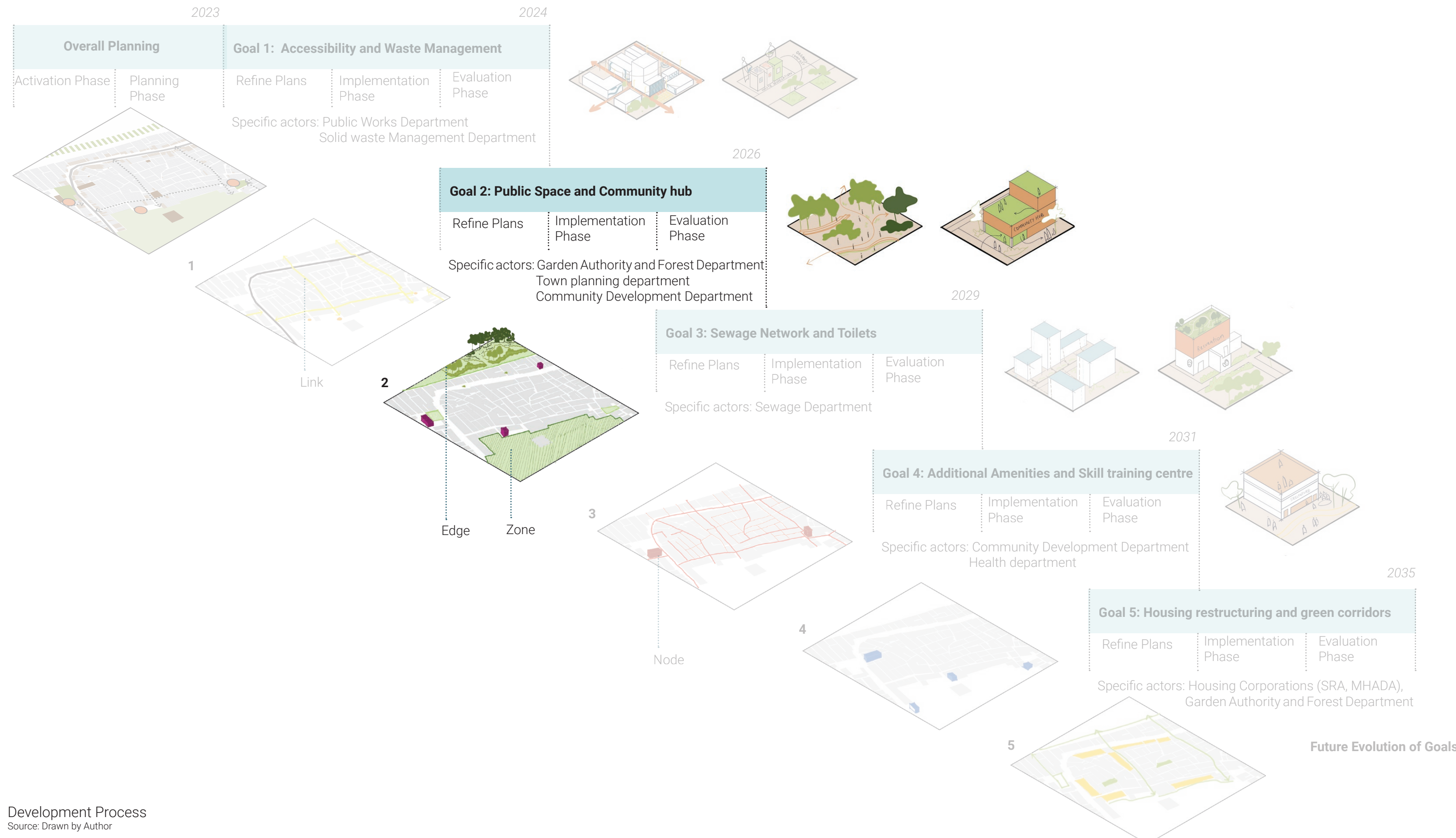


Development Process



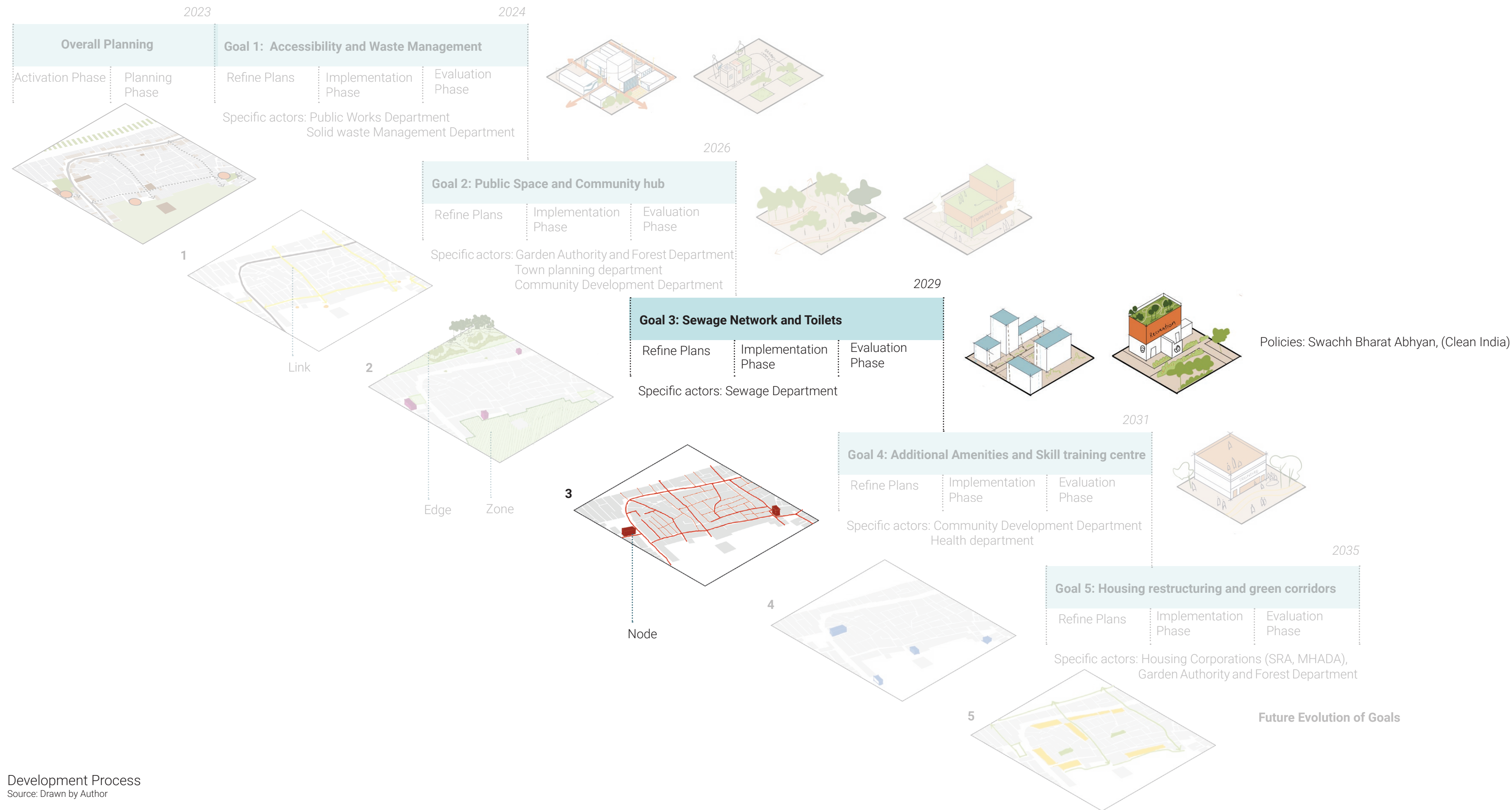
Development Process
Source: Drawn by Author

Development Process



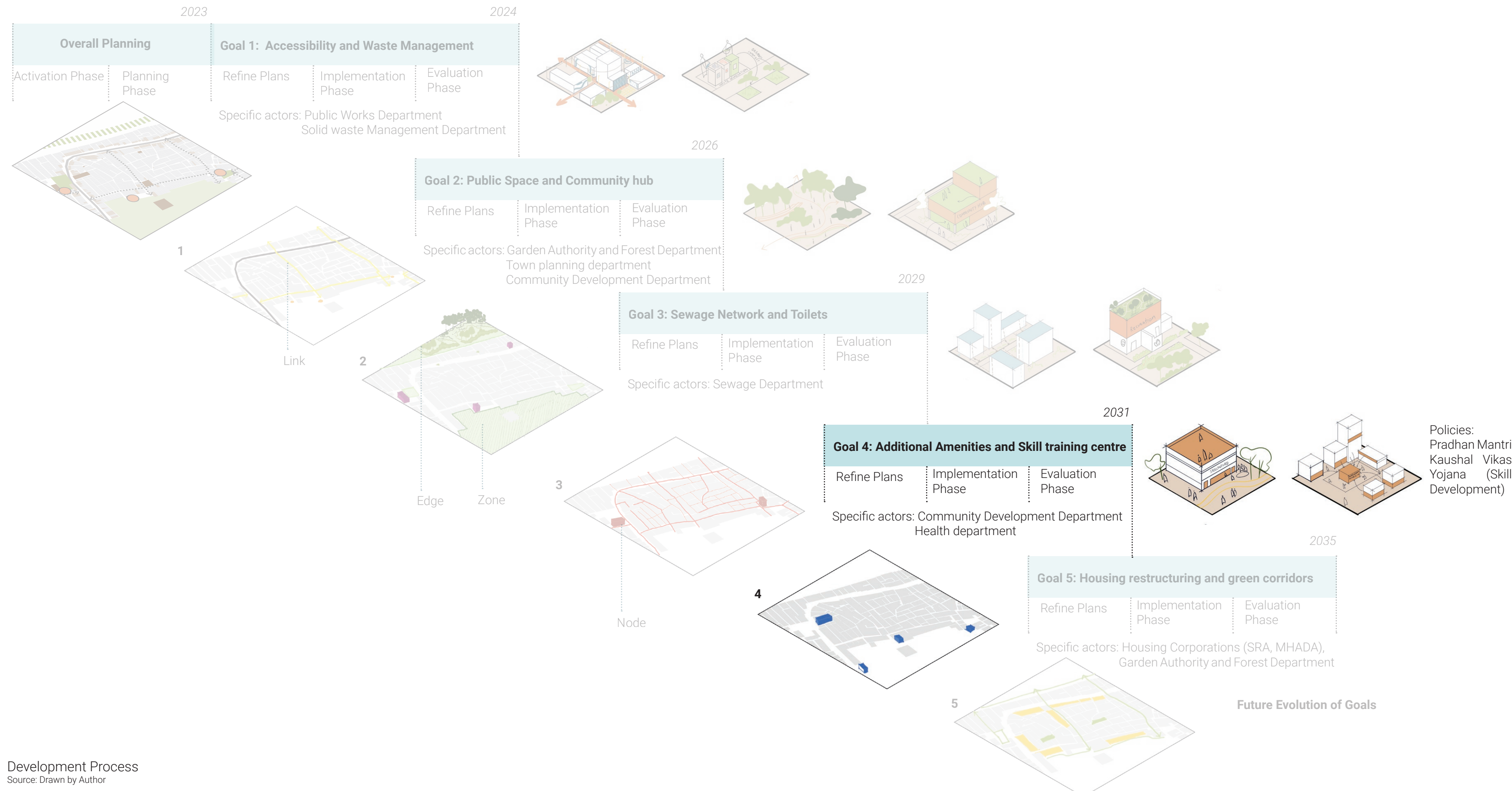
Development Process
Source: Drawn by Author

Development Process



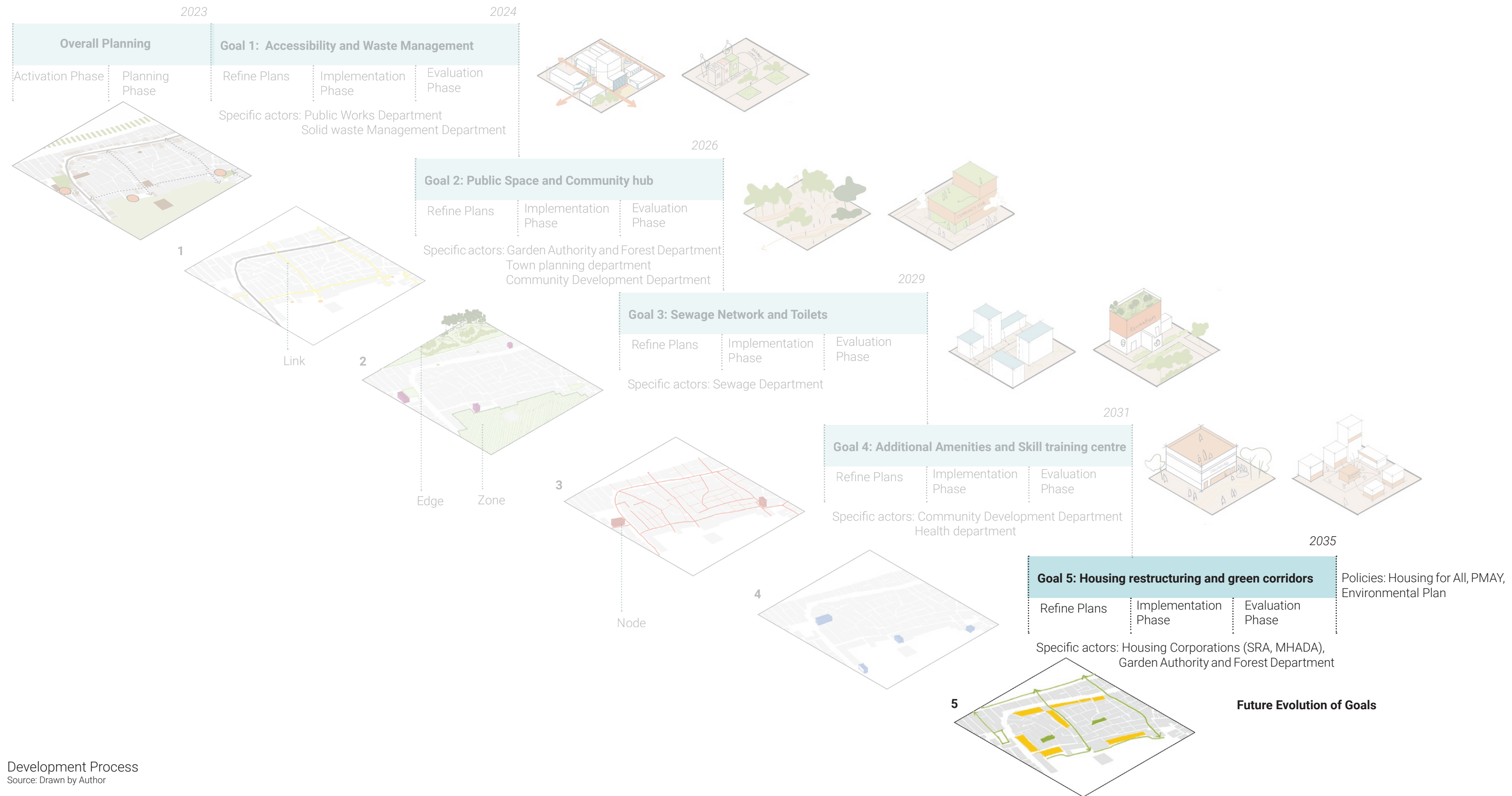
Development Process
Source: Drawn by Author

Development Process



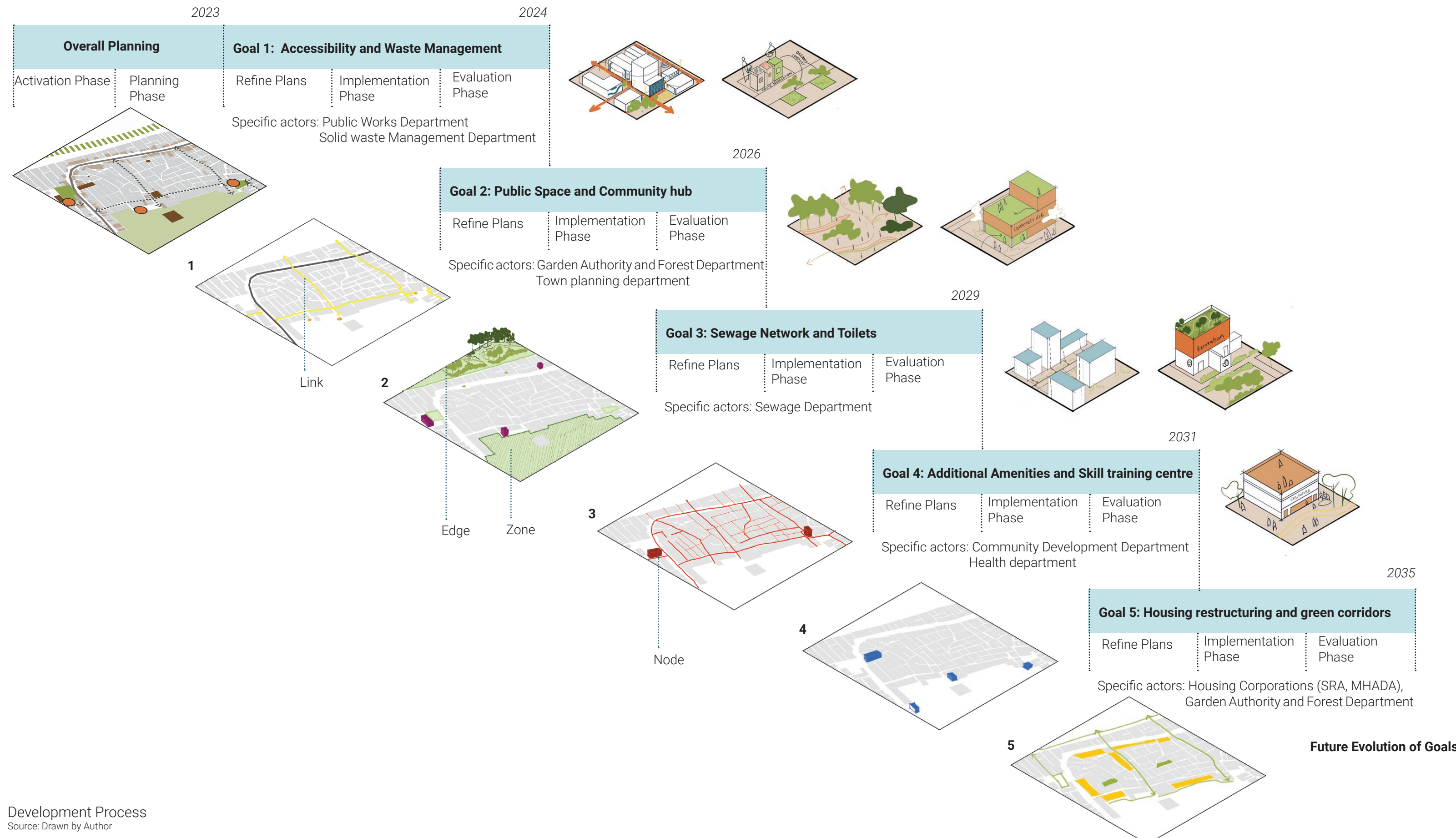
Development Process
Source: Drawn by Author

Development Process



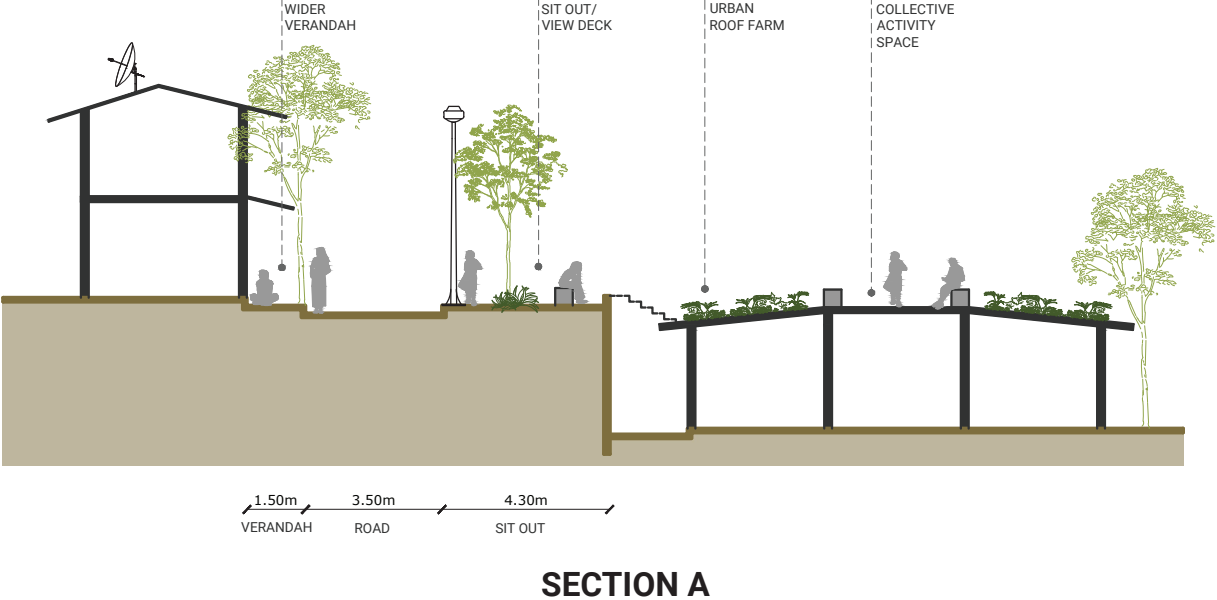
Development Process
Source: Drawn by Author

Development Process

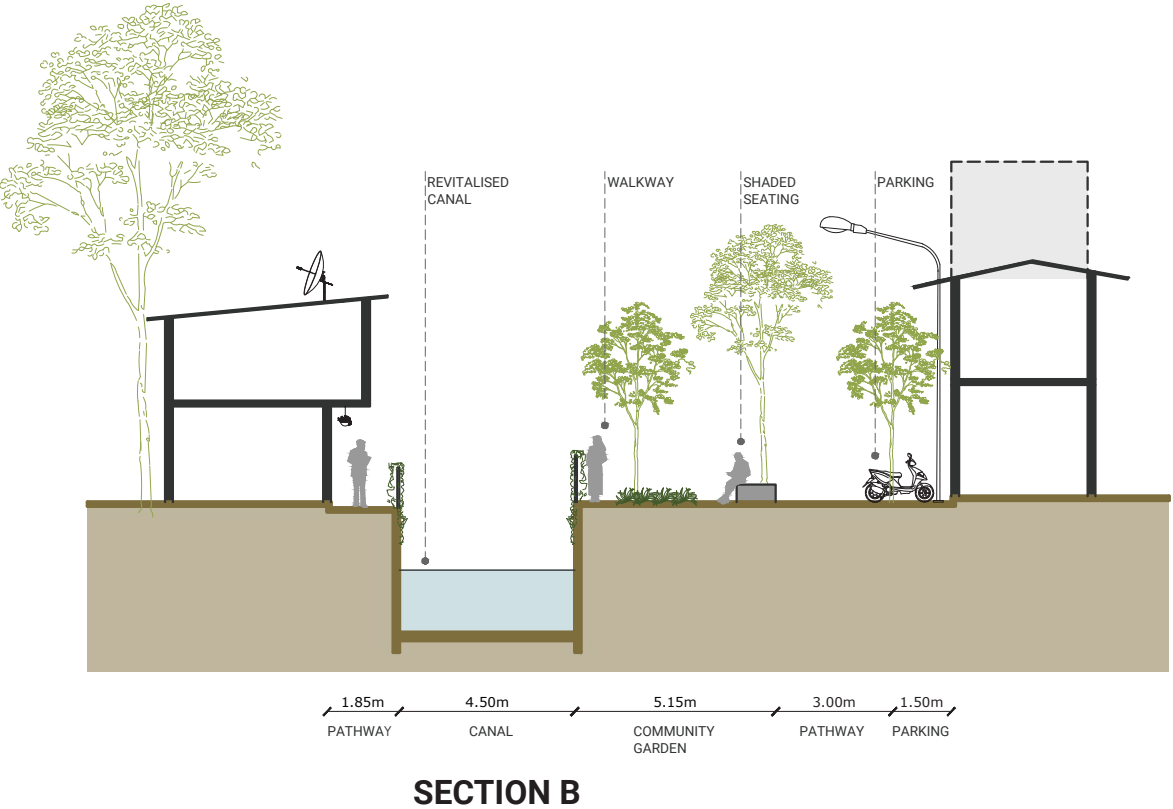
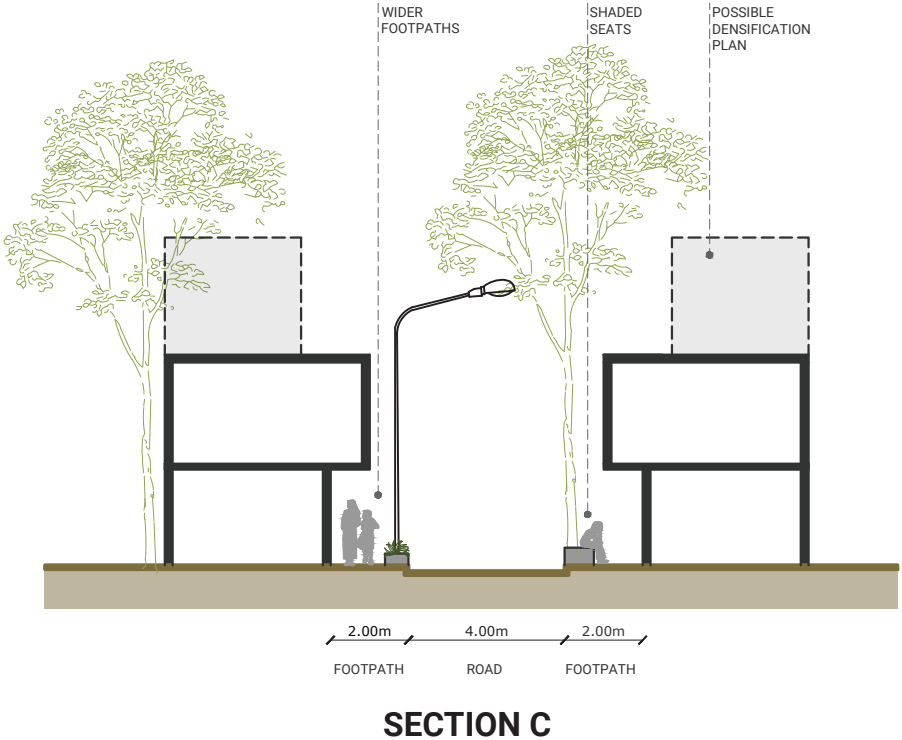


Development Process
Source: Drawn by Author

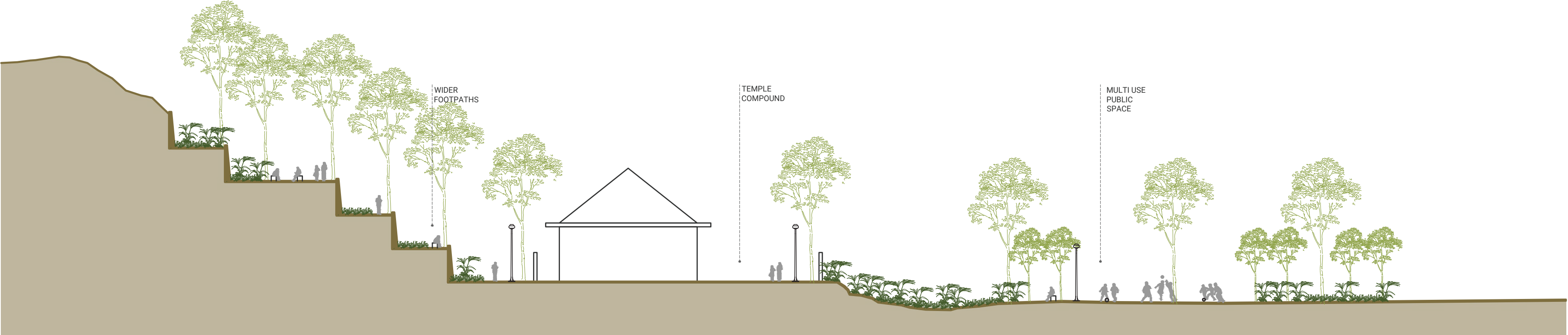
Local Scale Example



Source: Author's own image



Local Scale Example



SECTION D



BEFORE



Source: Author's own image

AFTER



Community garden and Canal revitalization
Source: Drawn by Author

BEFORE



Source: Author's own image

AFTER



Multi-functional public square

Source: Drawn by Author

The Problem

The Approach

Site Analysis

Strategic Framework

Conclusion & Recommendation

Conclusion

- Redefining “smart” by empowering citizens and using their knowledge to activate upgrading processes
- Smart City Mission acts as a leverage to initiate a continuous process of change in informal areas
- Co-production of space have higher chance of success rates than the current imposed schemes
- Process could require relative shorter time and funding than the current proposals
- Enables the current social and economic networks to stay intact and progress in place

Recommendation

- Need to be approached as a method for multiple-slums and as a city-wide upgradation process, in order to have a more coherent process
- Integrate strategic framework at national level to expand to other cities
- Use of Smart City Mission technologies to map the services and fill the gaps more efficiently, also as an aid for citizens to interact and participate

Thank you!

Any questions?

