PRODUCTIVE ADDIS

INCREASING ACCESSIBILITY TO LOCAL INCOME GENERATION BY DESIGNING A PRODUCTIVE OPEN SPACE SYSTEM

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P5 PRESENTATION
COMPLEX CITIES
ROBERTO ROCCO
STEFAN VAN DER SPEK
31-10-2018

PROLOGUE: MY VIEW ON ADDIS ABABA

Kebele sefer

Condominium

Accessibility

Open space?

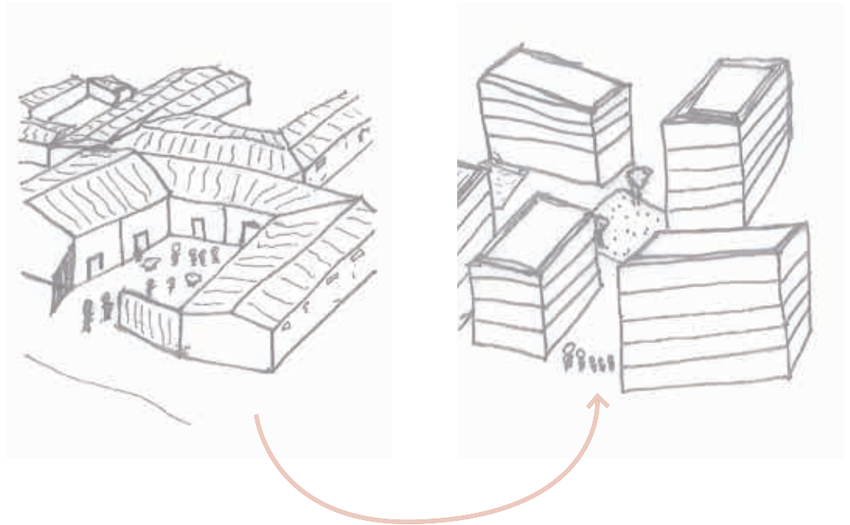
PROLOGUE: MEET THE MAIN CHARACTERS:

Haile Kassahun - 40 years, 6 kids

Rural Oromya -> Urban Addis

Betty Bekele - 30 years

Kebele -> condominium



People of Addis, Tumblr, 2018

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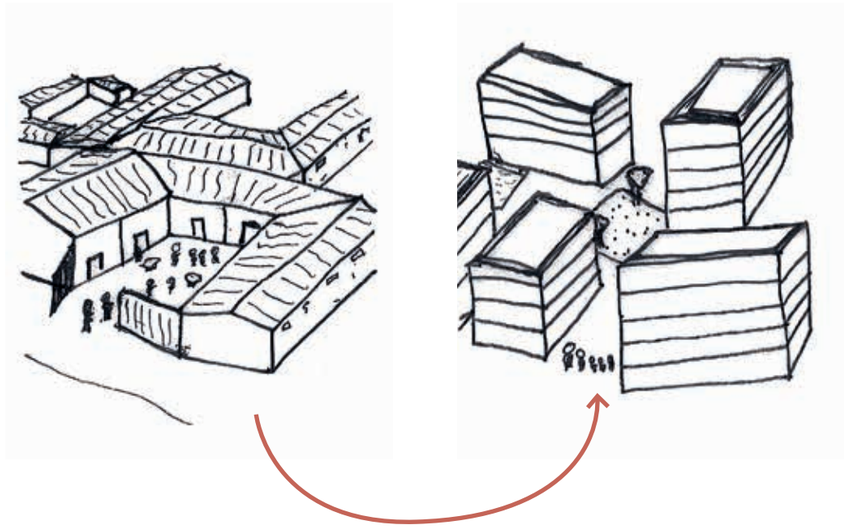


People of Addis, Tumblr, 2018

TABLE OF CONTENTS

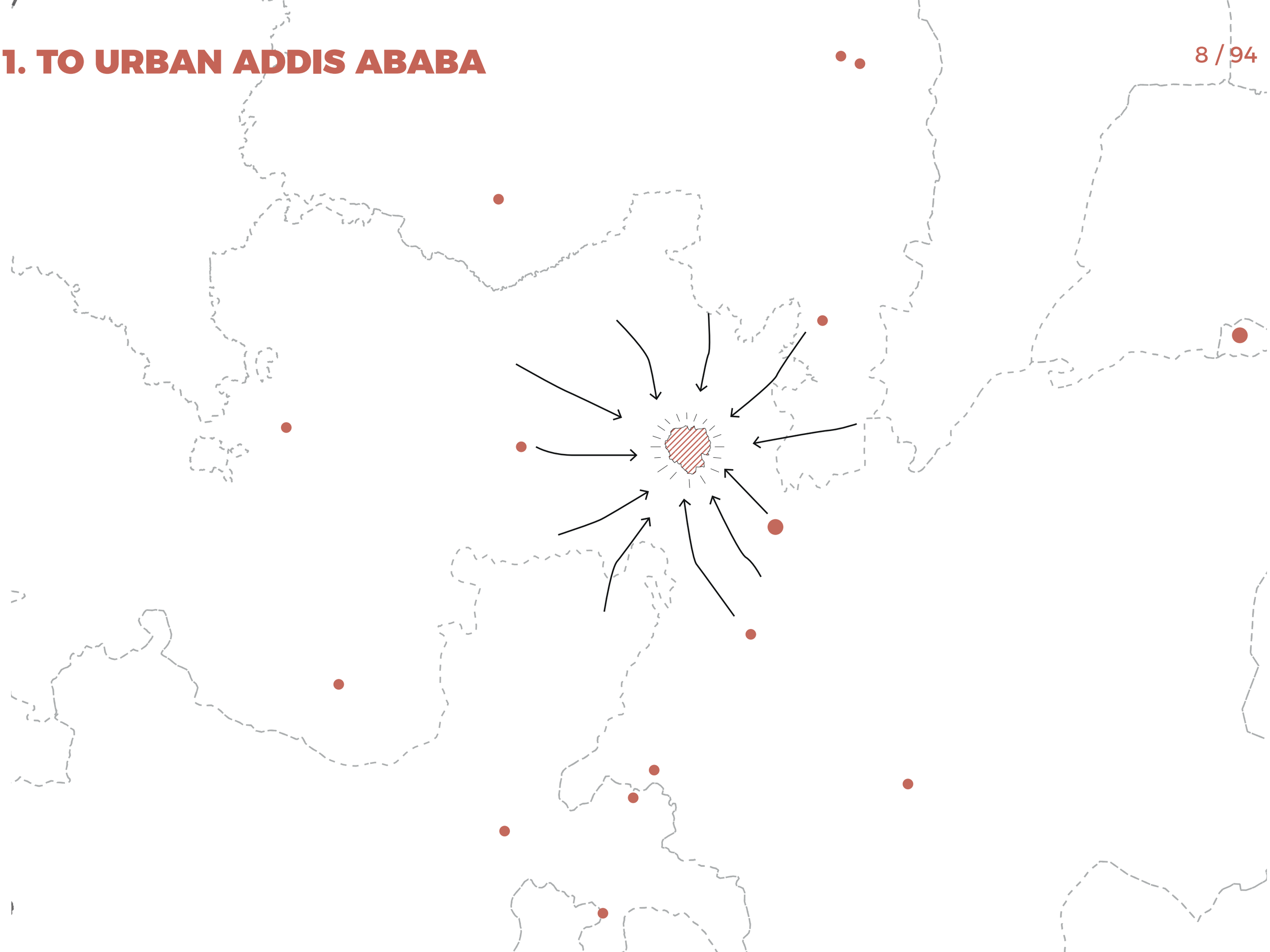
1. FROM RURAL ETHIOPIA, VIA THE KEBELE, TO THE CONDOMINIUM

“[...] The migrant is not coming to the city for housing. He is coming for a job. For survival. .”
(Charles Correa)

Van Andel, Van Gameren and van der Putt, 2015)

1. FROM RURAL ETHIOPIA

1. TO URBAN ADDIS ABABA



1. ADDIS ABABA TODAY

N

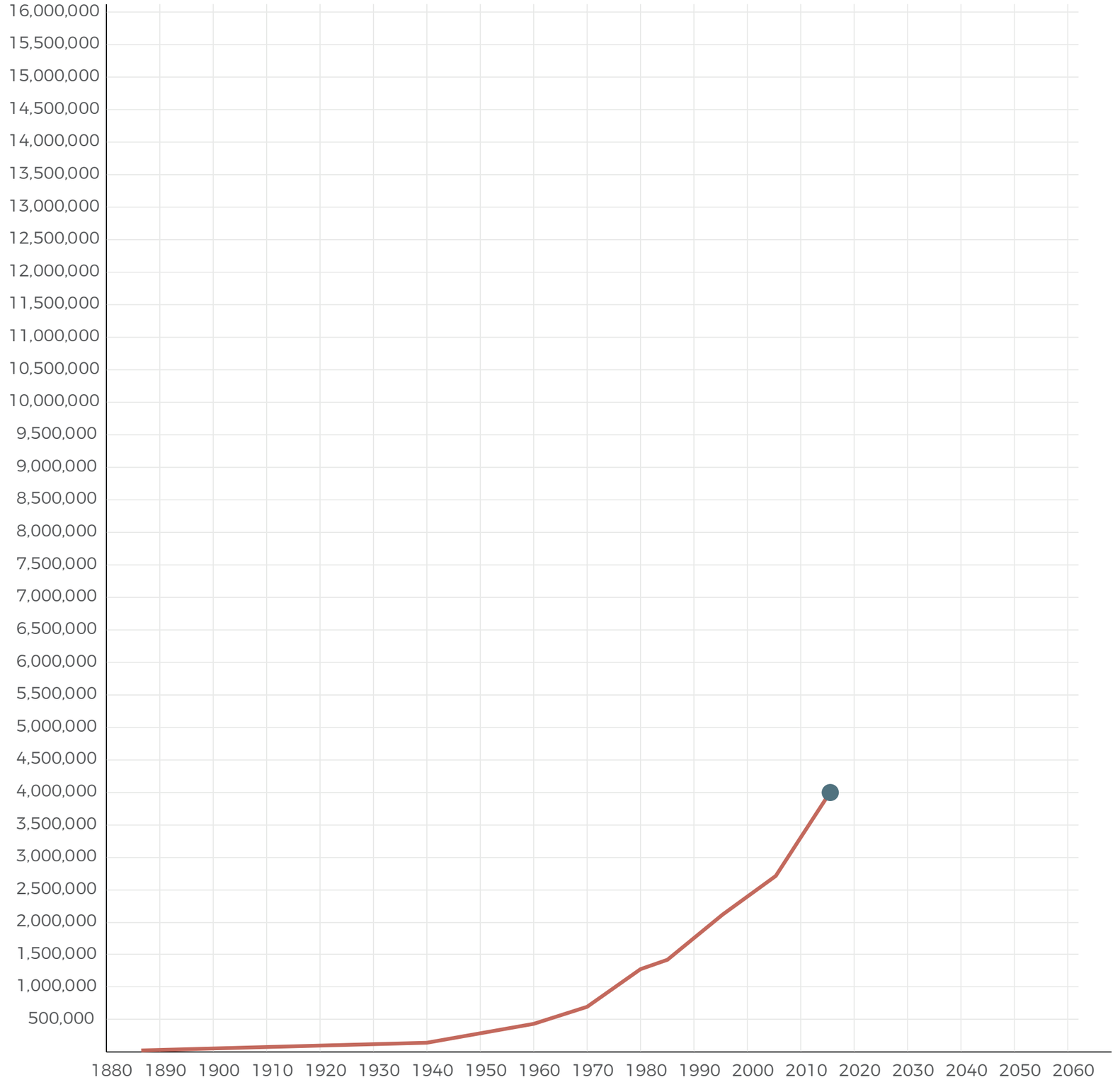
0 1 2 5 10 km

1. ROTTERDAM REGION REFERENCE

N

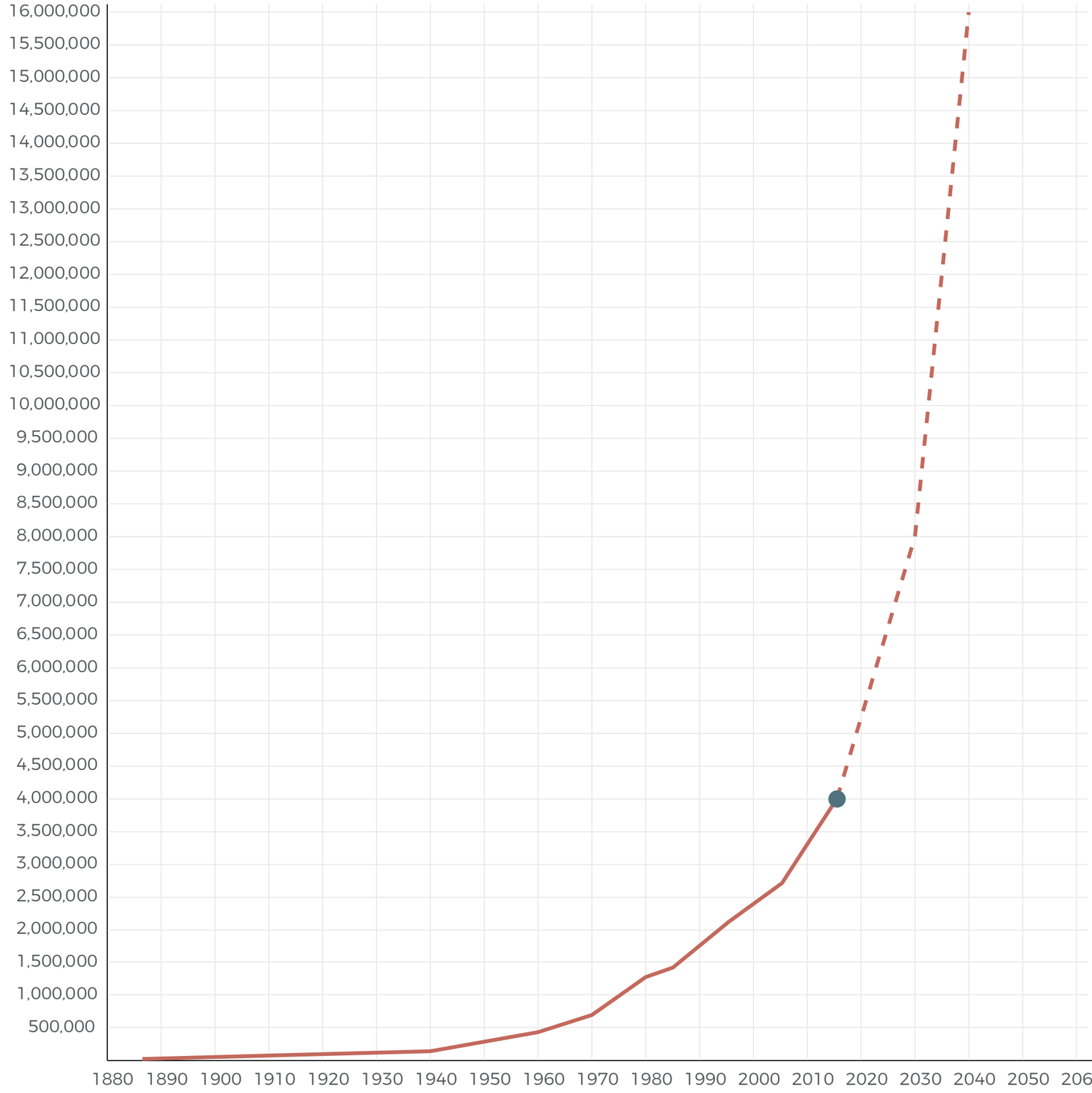
0 1 2 5 10 km

1. ADDIS ABABA: POPULATION GROWTH



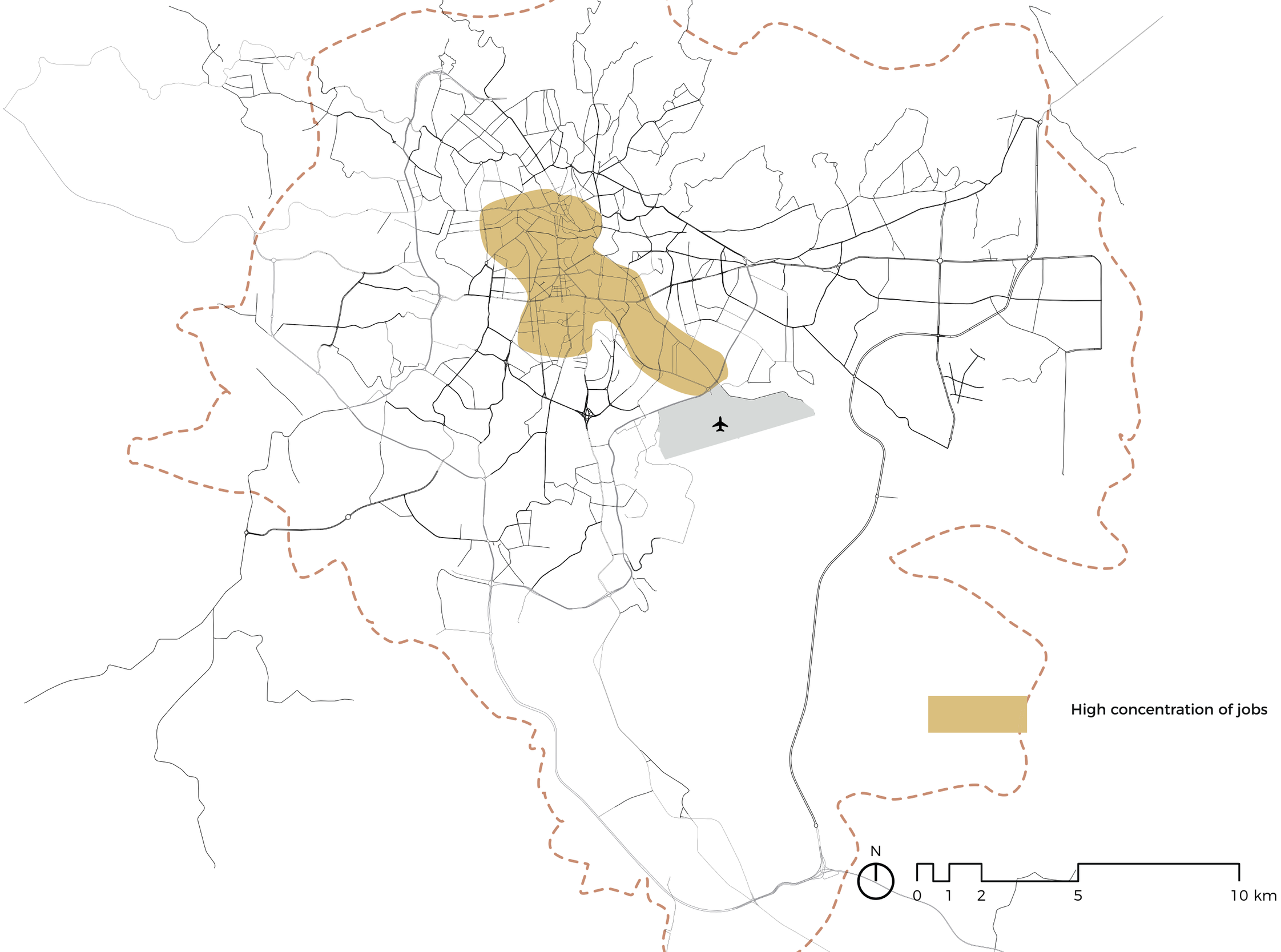
CSA, 2008; UN-Habitat, 2017

1. ADDIS ABABA: POPULATION GROWTH



CSA, 2008; UN-Habitat, 2017

1. POOR ACCESS TO INCOME GENERATION



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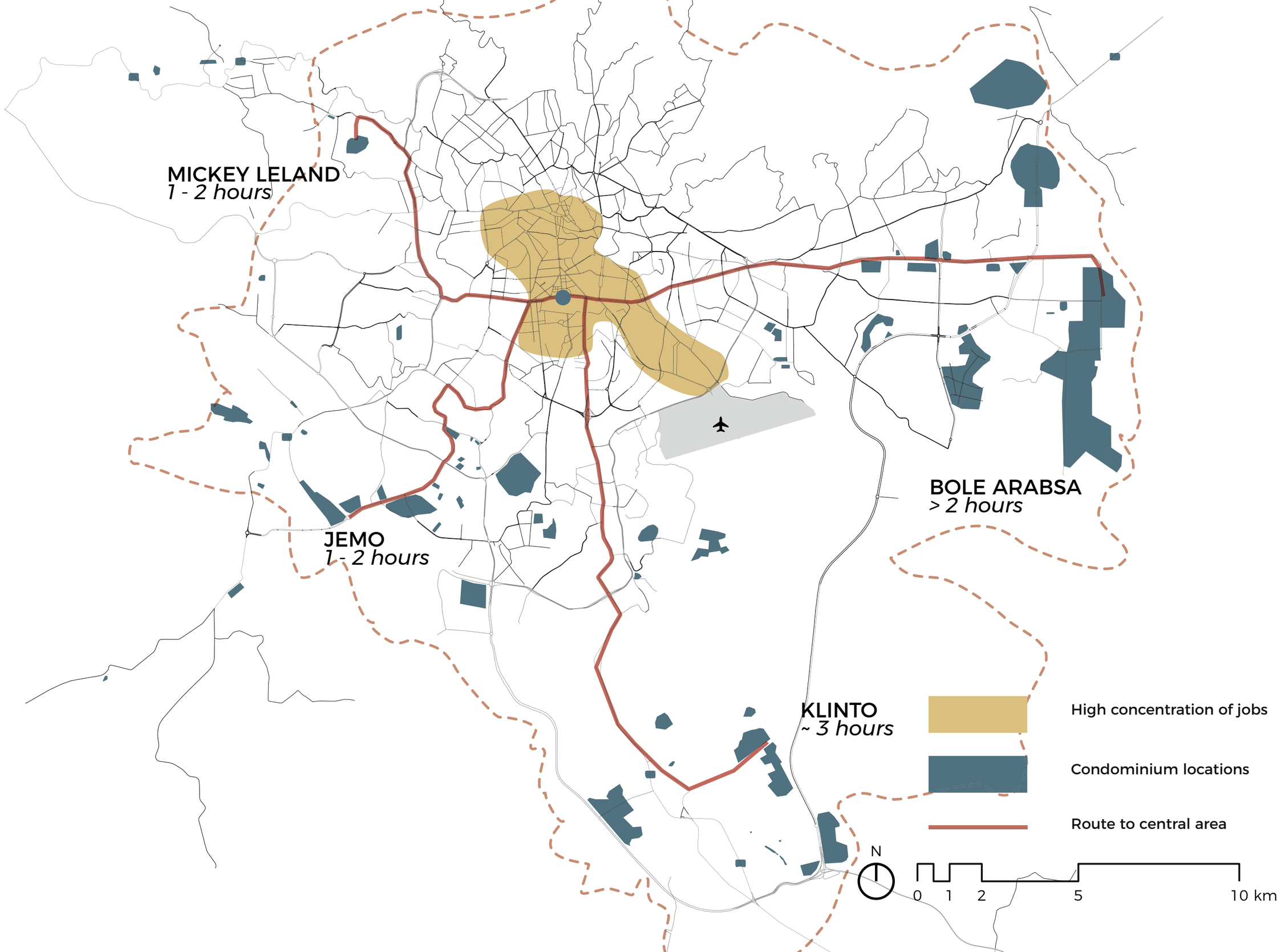


1. INCOME GENERATION IN ADDIS ABABA

CATEGORIES		INCOME GENERATING PRACTICES	SPATIAL
Formal	**Commercial**	Coffee shop owner/employee Shop owner/employee Restaurant owner/employee Market	*Building*
	Manufacturing	Construction material Recycling	*Building*
	Service	Civil servant (e.g. teacher) Private employee (e.g. banker)	*Building*
		Minibus owner/operator	*Minibus/taxi*
	Agriculture	Farmer Pastoralist	*Private compound/ open field*
Informal		Streetvendor Car cleaner Shoe shiner	*Sidewalk* *Large open space (e.g. Meskel sq.)*
From others		Pension From family members Subletting	*Private compound*

1. PRIVATE COMPOUND: SMALL SCALE

Used for daily activities and small scale income generation

1. OTHER OPEN SPACE IN THE SEFER

Empty spaces, unused

1. MAIN STREET OPEN SPACE

Main streets used for informal income generation

http://capitalethiopia.com/wp-content/uploads/2017/07/Road-market.jpg

1. MESKEL SQUARE: MOST PUBLIC SPACE

1. CONDOMINIUM OPEN SPACE? NO

Unused or inaccessible open space

1. PROBLEM ANALYSIS AND POTENTIALS: CONCLUSION

high travel costs, **poor access** to **local** income generation.

However, the **potential** lies in the underused **open spaces in the sefer**. Opportunity to connect these spaces and make them **productive**!

HYPOTHESIS:

A PRODUCTIVE OPEN SPACE SYSTEMS CONTRIBUTES TO THE INCREASED ACCESS TO LOCAL INCOME GENERATION.

2. PRODUCTIVE OPEN SPACE SYSTEM [POSS]; VISION AND METHDOLOGY

2. POSS: HAILE'S STREET BEFORE

2. POSS: HAILE'S STREET AFTER

2. POSS: BETTY'S SPACE BEFORE

2. POSS: BETTY'S SPACE AFTER

2. POSS: OVERVIEW

Social

Producing

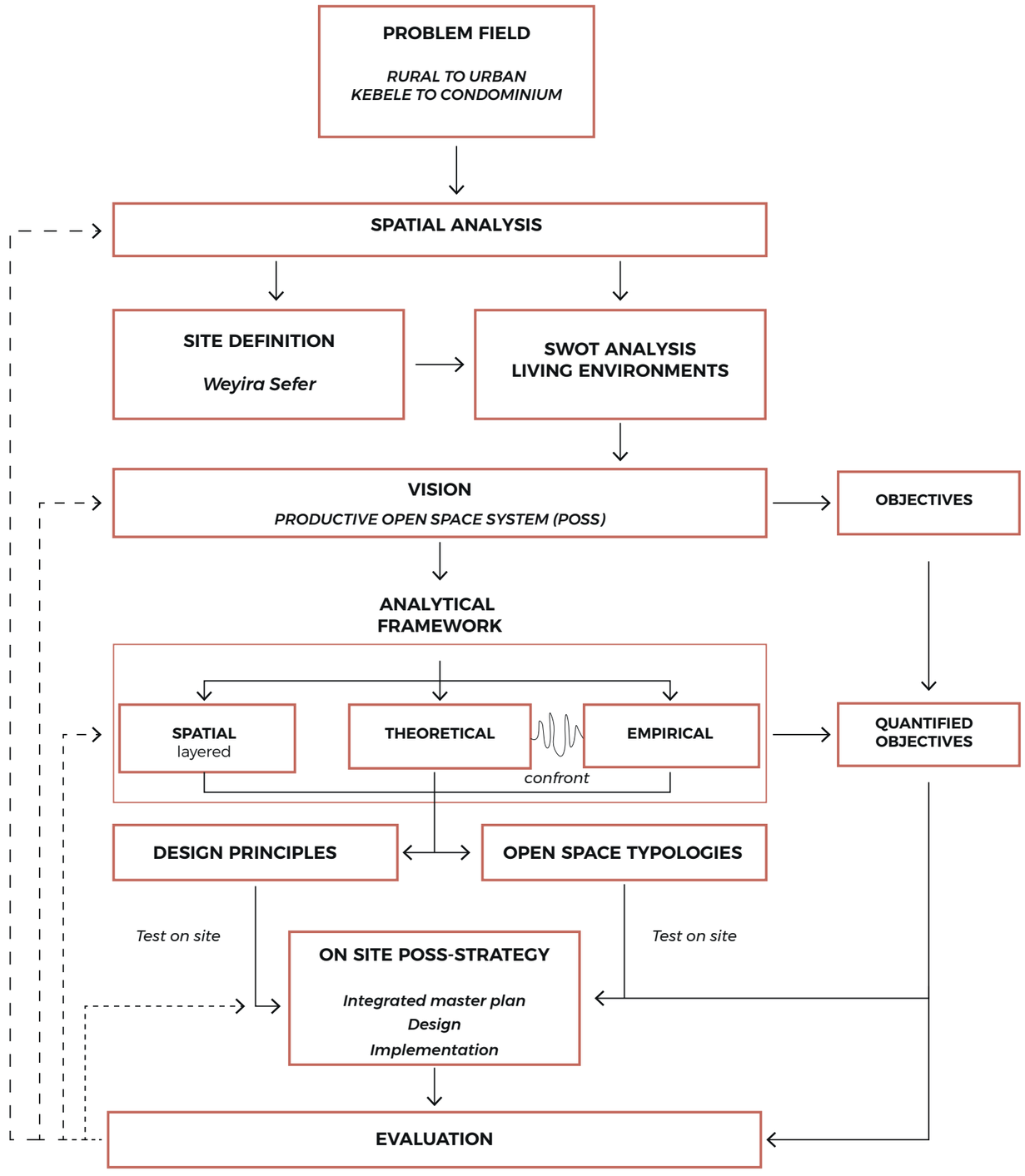
Commercial

Producing

Commercial

Social

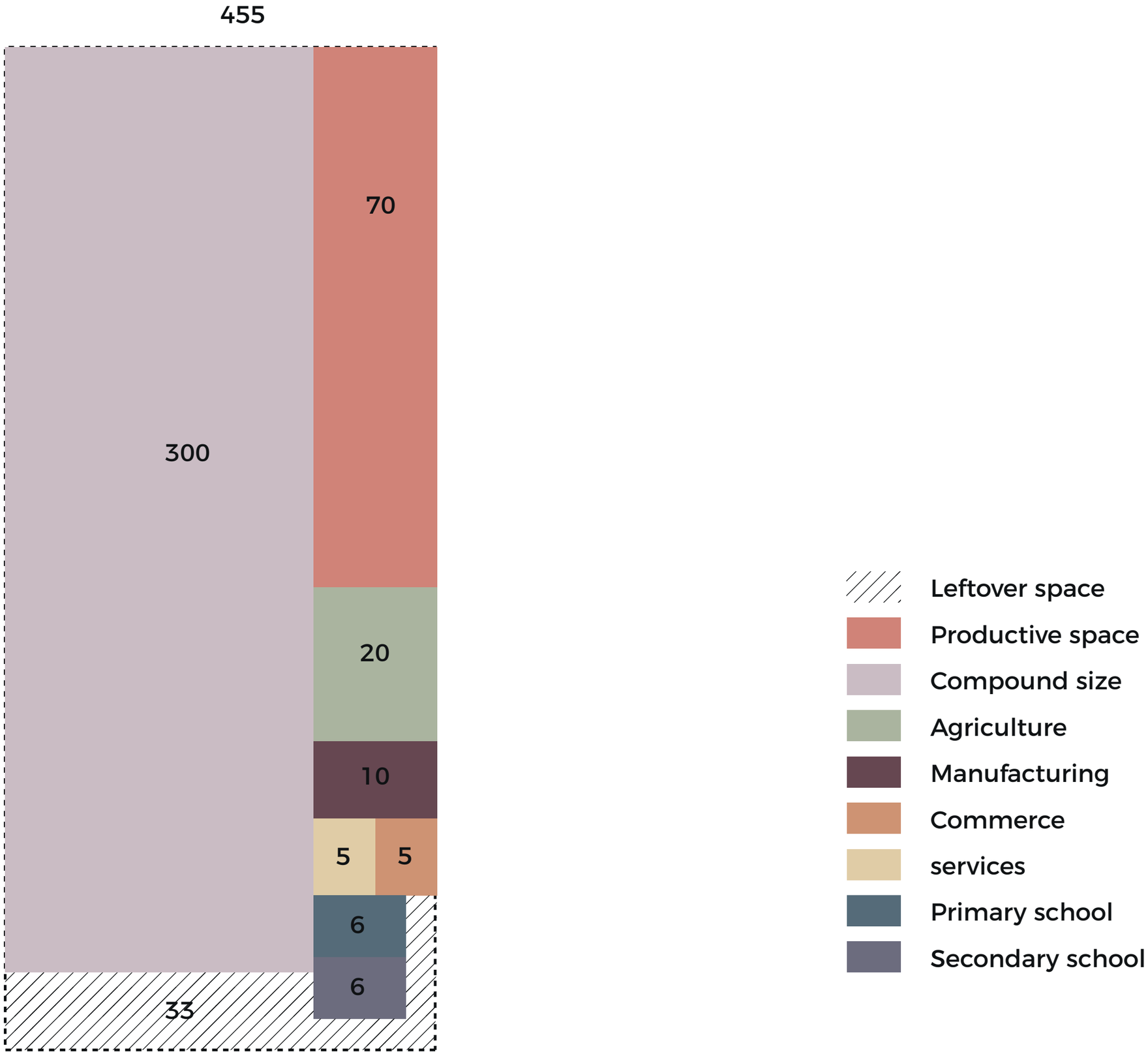
2. POSS: METHODOLOGY



2. POSS: QUANTIFIED OBJECTIVES

LAYER	PROBLEM	PARAMETERS	OBJECTIVES
POSS	Unused open space	% open space	20 % open space / total
	High travel costs (money and time)	travel time	1/2 * [current travel time]
INCOME GENERATION	Limited access to local income generation	amount of jobs in sefer	> 25 % of working population job in sefer
PUBLIC FACILITIES	Limited access to schools	amount of schools/ inhabitants	1:250 primary school 1:1200 secondary school
	Limited access to health facilities	amount of health centers/inhabitants	1:1000 health centers
HOUSING	Need to accommodate high population growth	population density	150 % * [current inhabitants]

2. POSS: SPACE FOOTPRINT PER COMPOUND (16 INHABITANTS)



2. POSS: SPACE FOOTPRINT 96 INHABITANTS

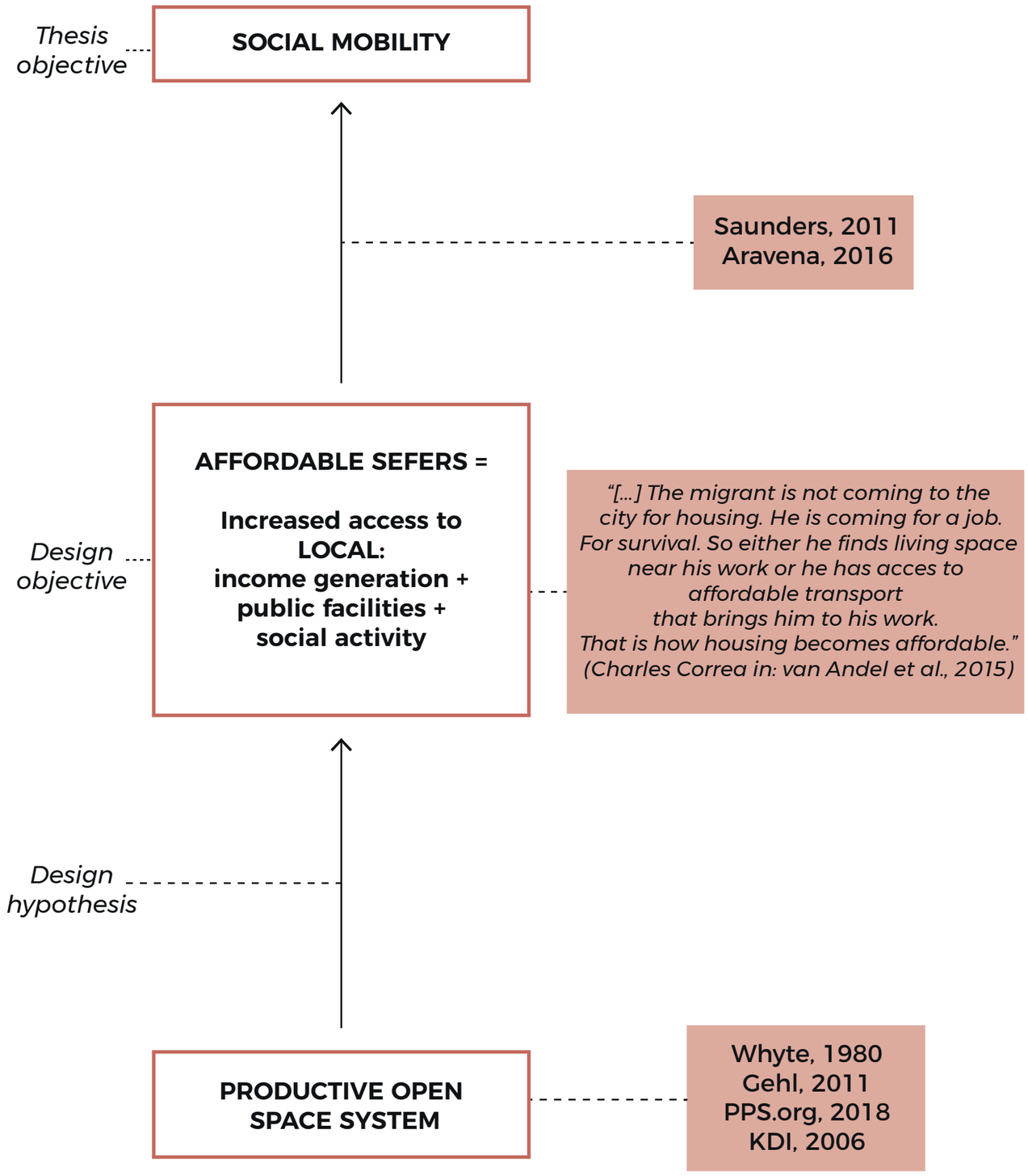
2. POSS: SPACE FOOTPRINT 800 INHABITANTS

3. THEORY MEETS EMPIRICAL: DESIGN PRINCIPLES

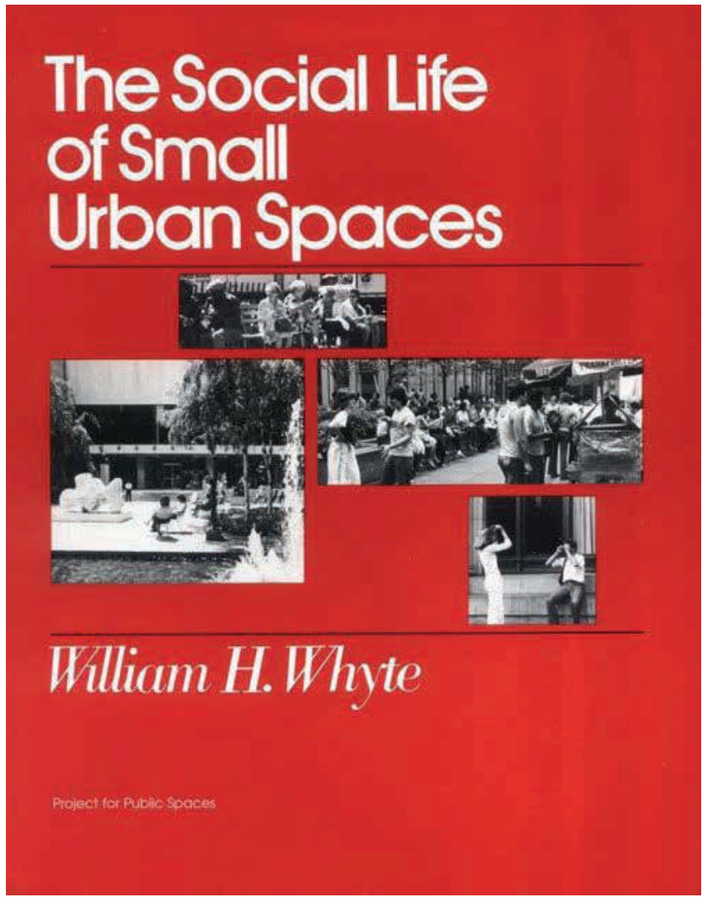
“What attracts people most, it would appear, is other people.”
(Whyte, 1980)

3. THEORETICAL FRAMEWORK

“WHAT DESIGN ELEMENTS ARE NEEDED TO CREATE PRODUCTIVE OPEN SPACE SYSTEM?”



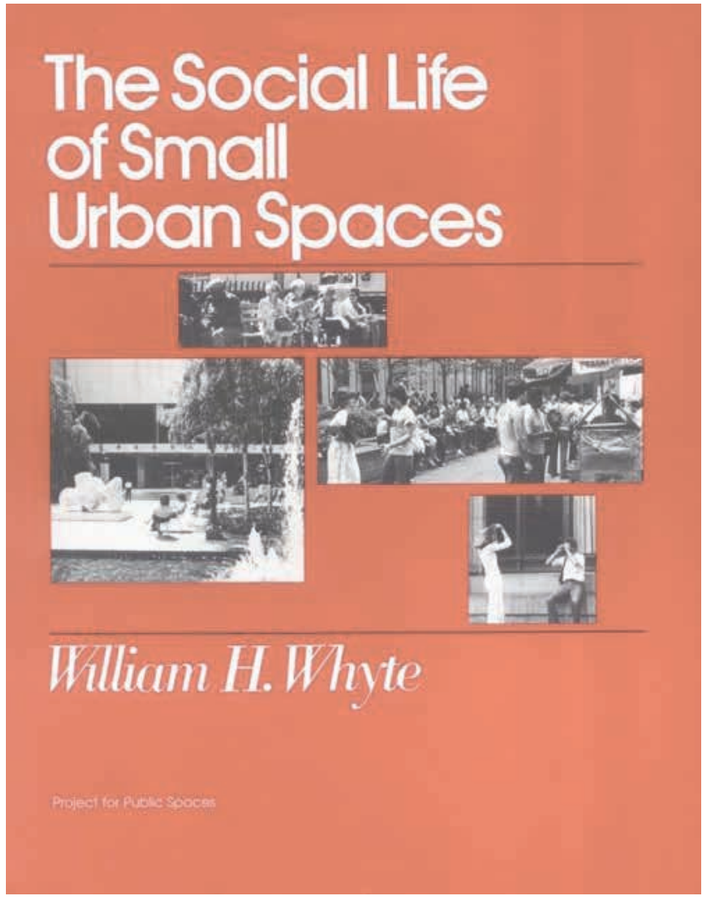
“WHAT ELEMENTS MAKE A SUCCESSFUL OPEN SPACE?”



Spaces in the sun most popular (Whyte, 1980)

Whyte, 1980

3. CONFRONTING THEORY WITH EMPIRICAL DATA

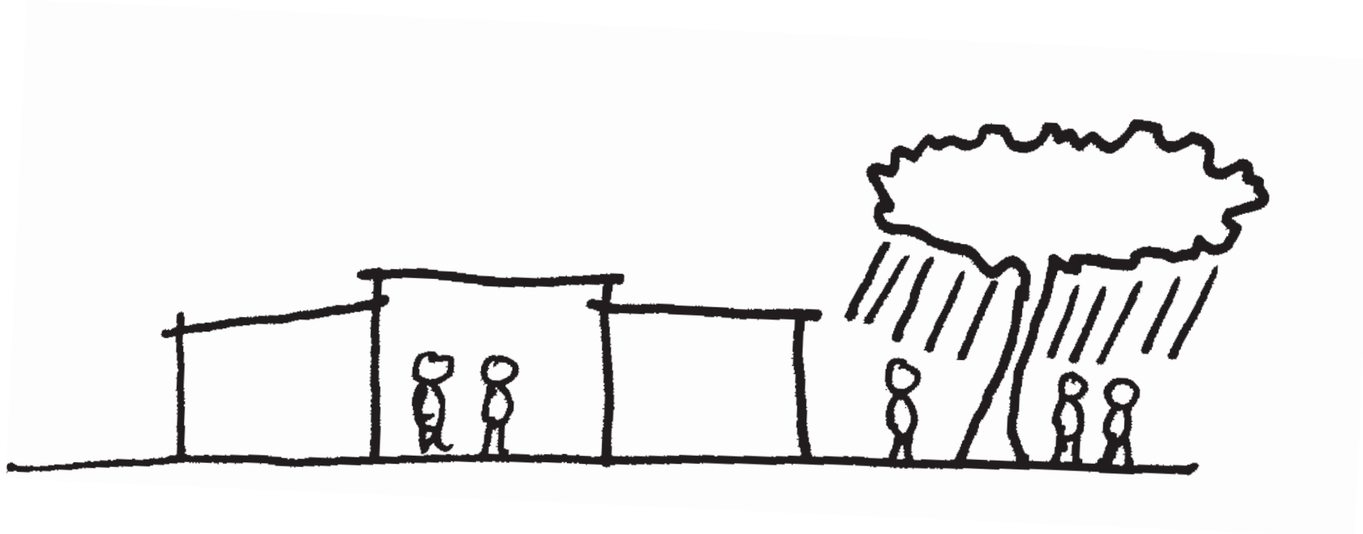


Whyte, 1980

https://fulbrightmekelle.files.wordpress.com/2014/01/umbrellas-of-timkat.jpg

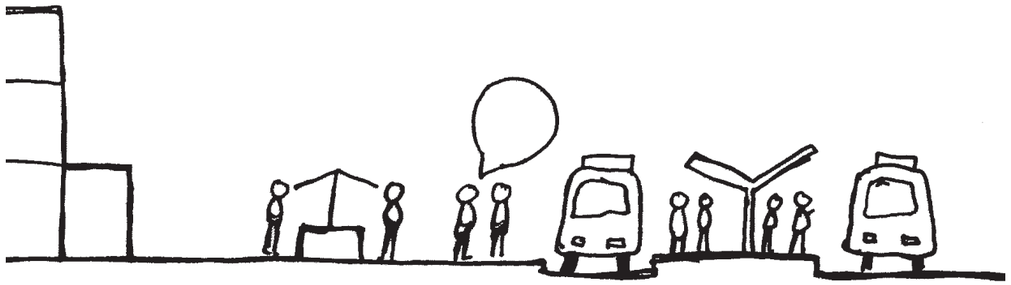
Reality in Ethiopia

3. DESIGN PRINCIPLES: SHELTER ATTRACTS ACTIVITY



http://www.kounkuey.org/Kibera_PPS1.html#

3. DESIGN PRINCIPLES: TRANSIT AND COMMERCIAL SPACE



https://www.nationalobserver.com/2017/07/13/news/tanzanias-dar-es-salaam-makes-history-sustainable-transit-award

3. DESIGN PRINCIPLES: SANITATION UNIT

http://www.kounkuey.org/Kibera_PPS1.html#

3. DESIGN PRINCIPLES: INCREMENTAL HOUSING DEVELOPMENT

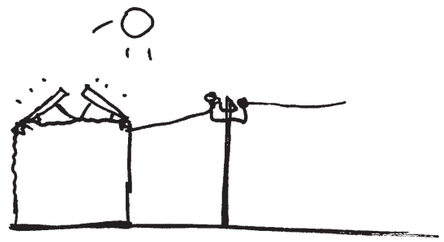
“Empower Shack”

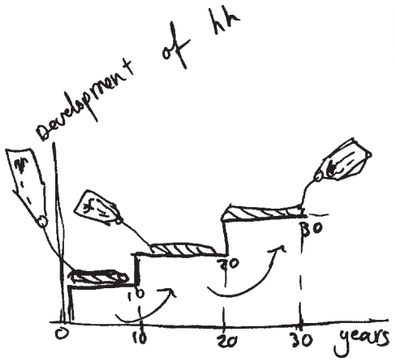
http://u-tt.com/project/empower-shack/

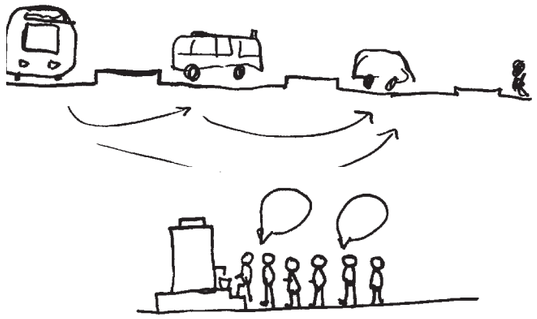
Belapur housing

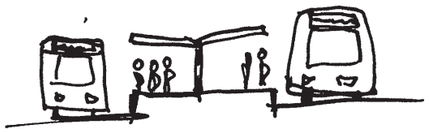
https://indianexpress.com/article/india/india-others/breaking-wallsin-an-equal-space/

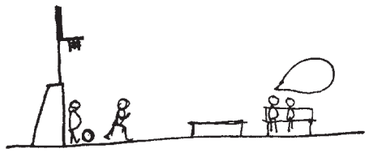
3. DESIGN PRINCIPLES: OVERVIEW

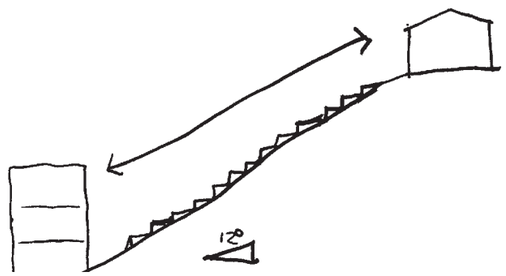


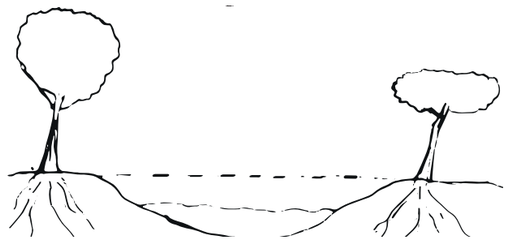


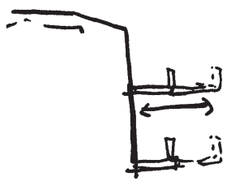


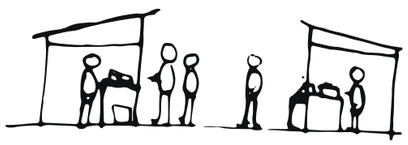


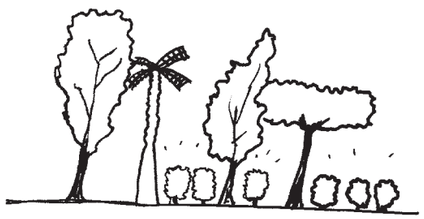


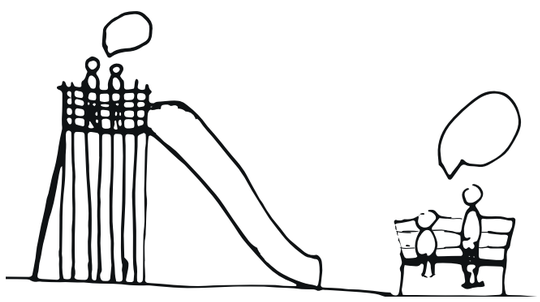


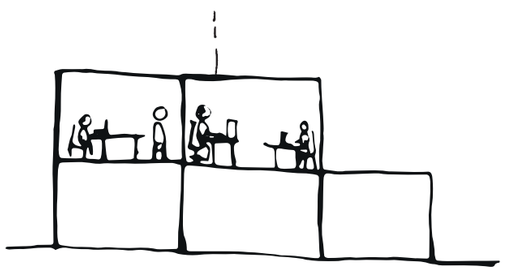


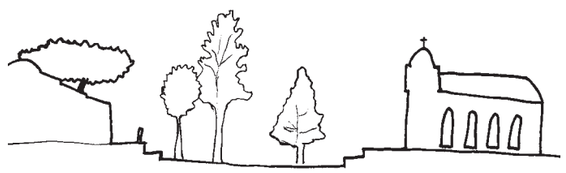


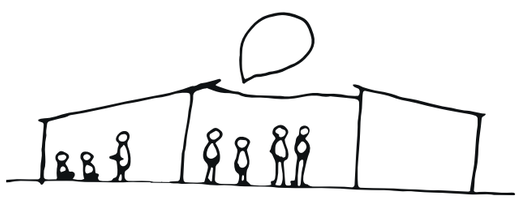






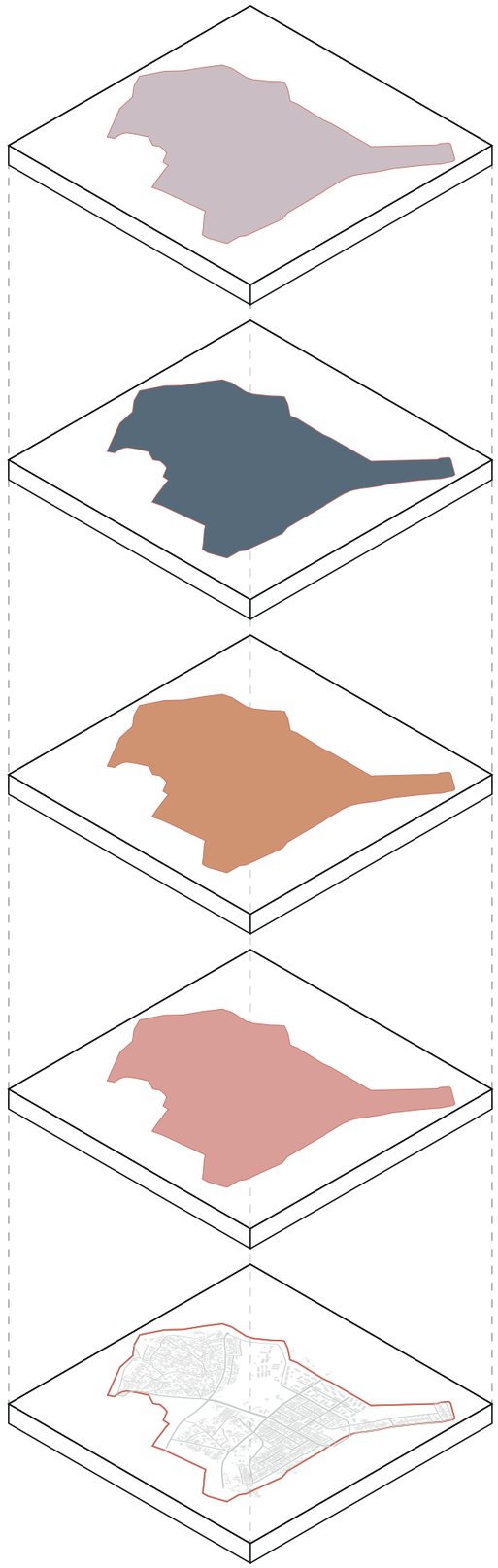






4. WEYRIA SEFER: SPATIAL ANALYSIS

4. LAYERED ANALYSIS AND DESIGN APPROACH



LAYER 4: POPULATION

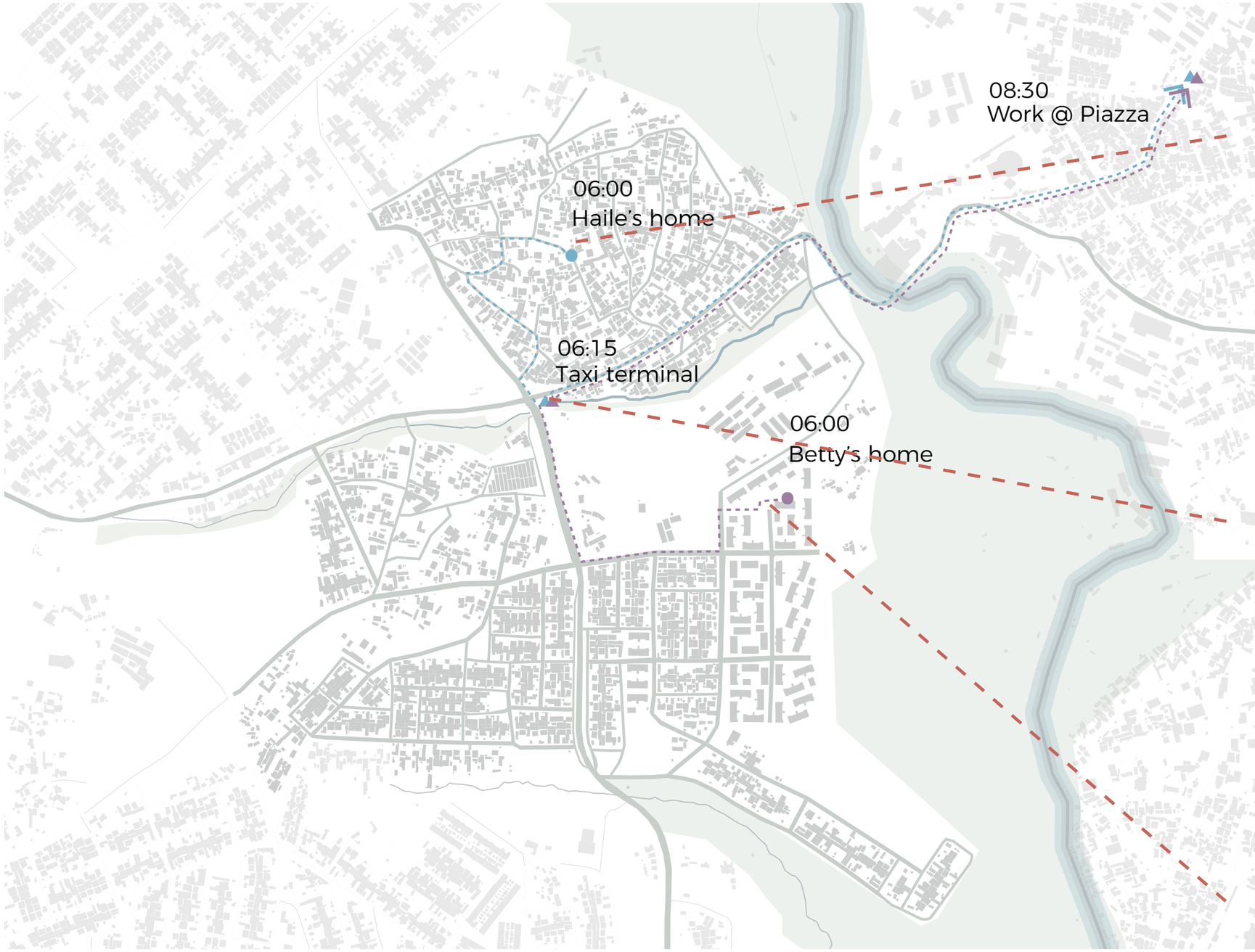
LAYER 3: EDUCATION + HEALTH

LAYER 2: LOCAL INCOME GENERATION

LAYER 1: PRODUCTIVE OPEN SPACE SYSTEM

LAYER 0: CURRENT SITUATION

4. WEYIRA: BASE

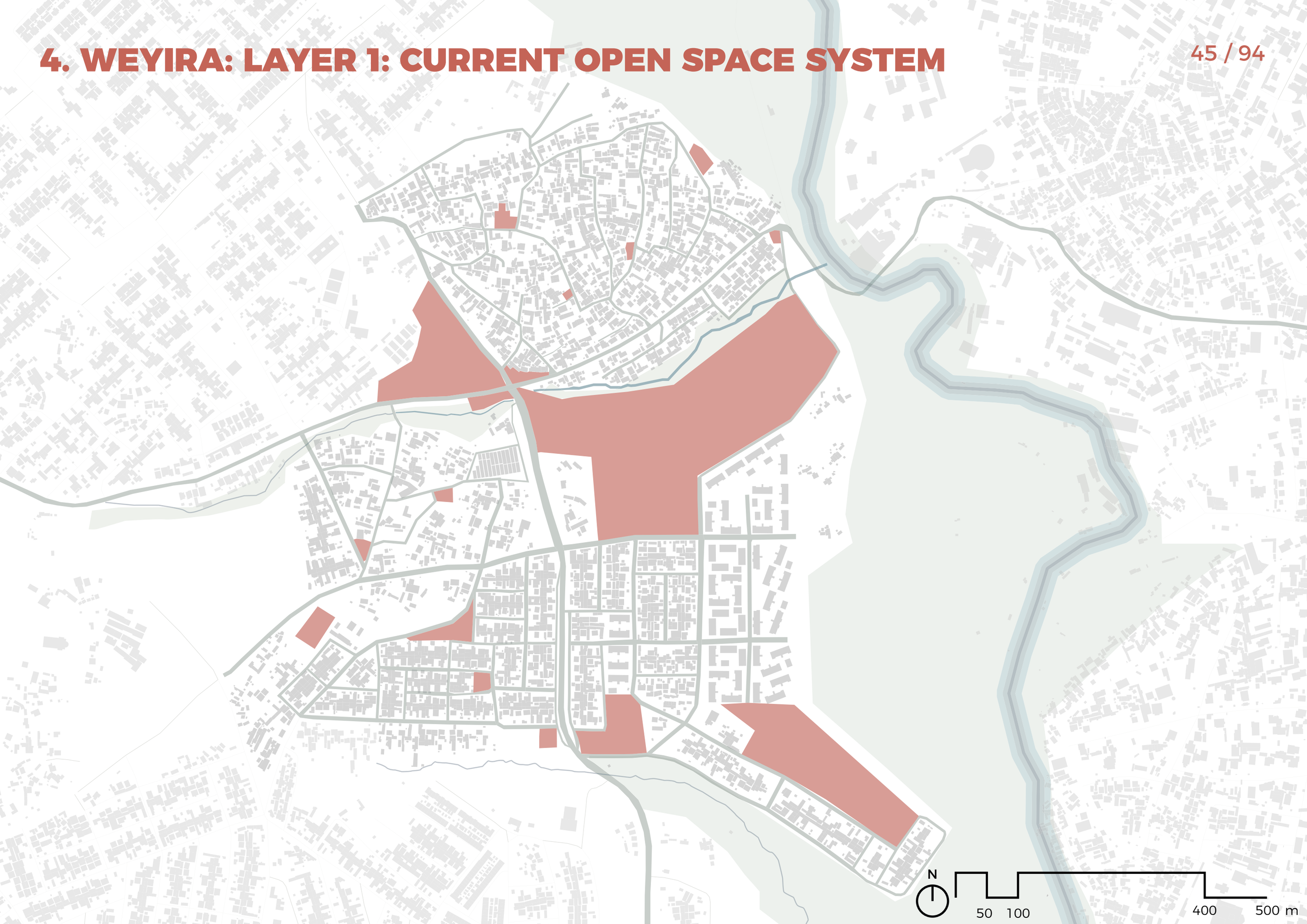


Haile's home

Terminal

Betty's home

4. WEYIRA: LAYER 1: CURRENT OPEN SPACE SYSTEM



4. WEYIRA: LAYER 1: CURRENT OPEN SPACE SYSTEM

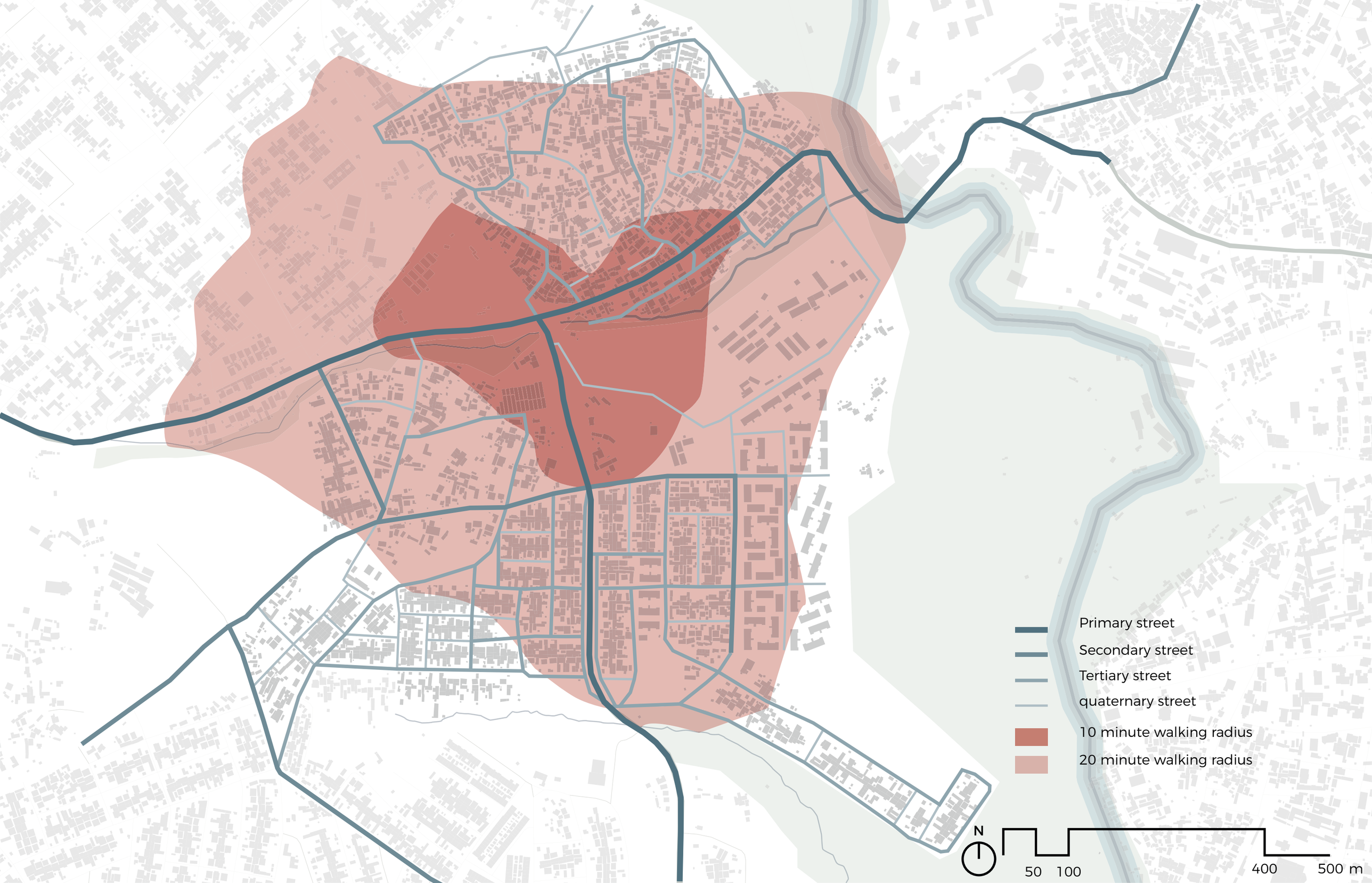
Open space for goats

Wasted land

Open space as dump site

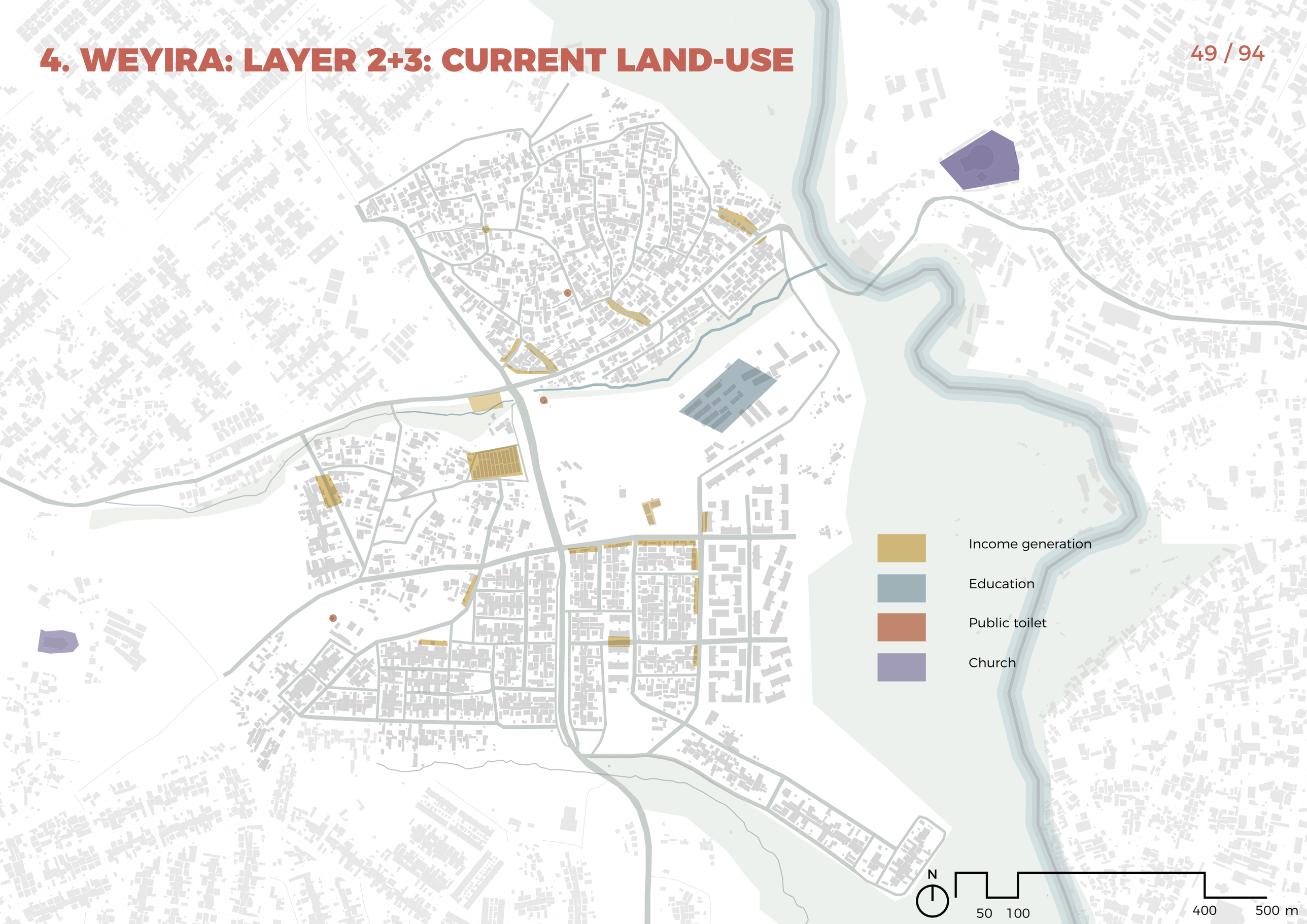
Inaccessible open condominium space

4. WEYIRA: LAYER 1: CURRENT OPEN SPACE SYSTEM



4. WEYIRA: LAYER 1: CURRENT OPEN SPACE SYSTEM

4. WEYIRA: LAYER 2+3: CURRENT LAND-USE



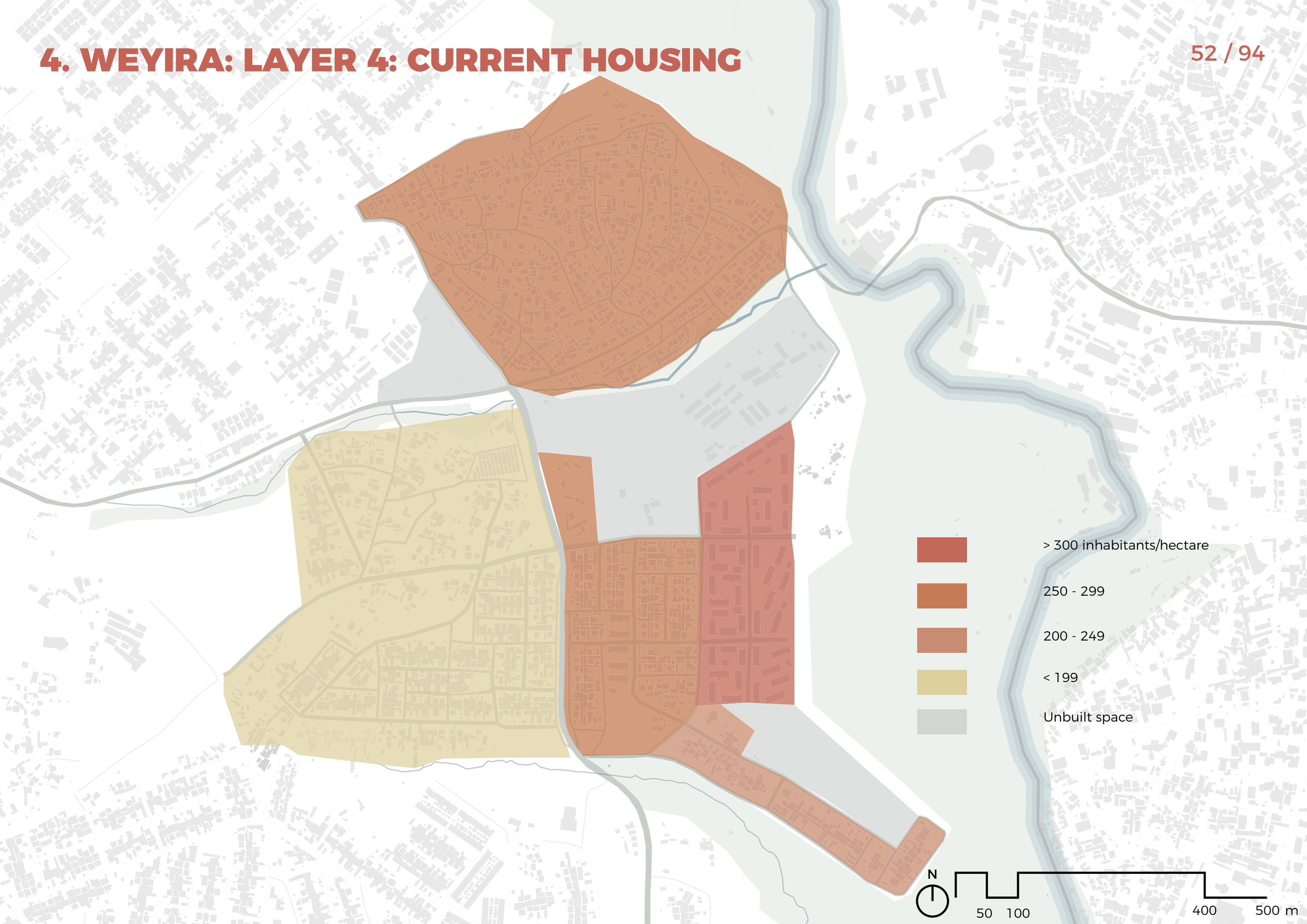
4. WEYIRA: LAYER 2+3: CURRENT LAND-USE

4. WEYIRA: LAYER 2+3: CURRENT LAND-USE

St. Giorgis church

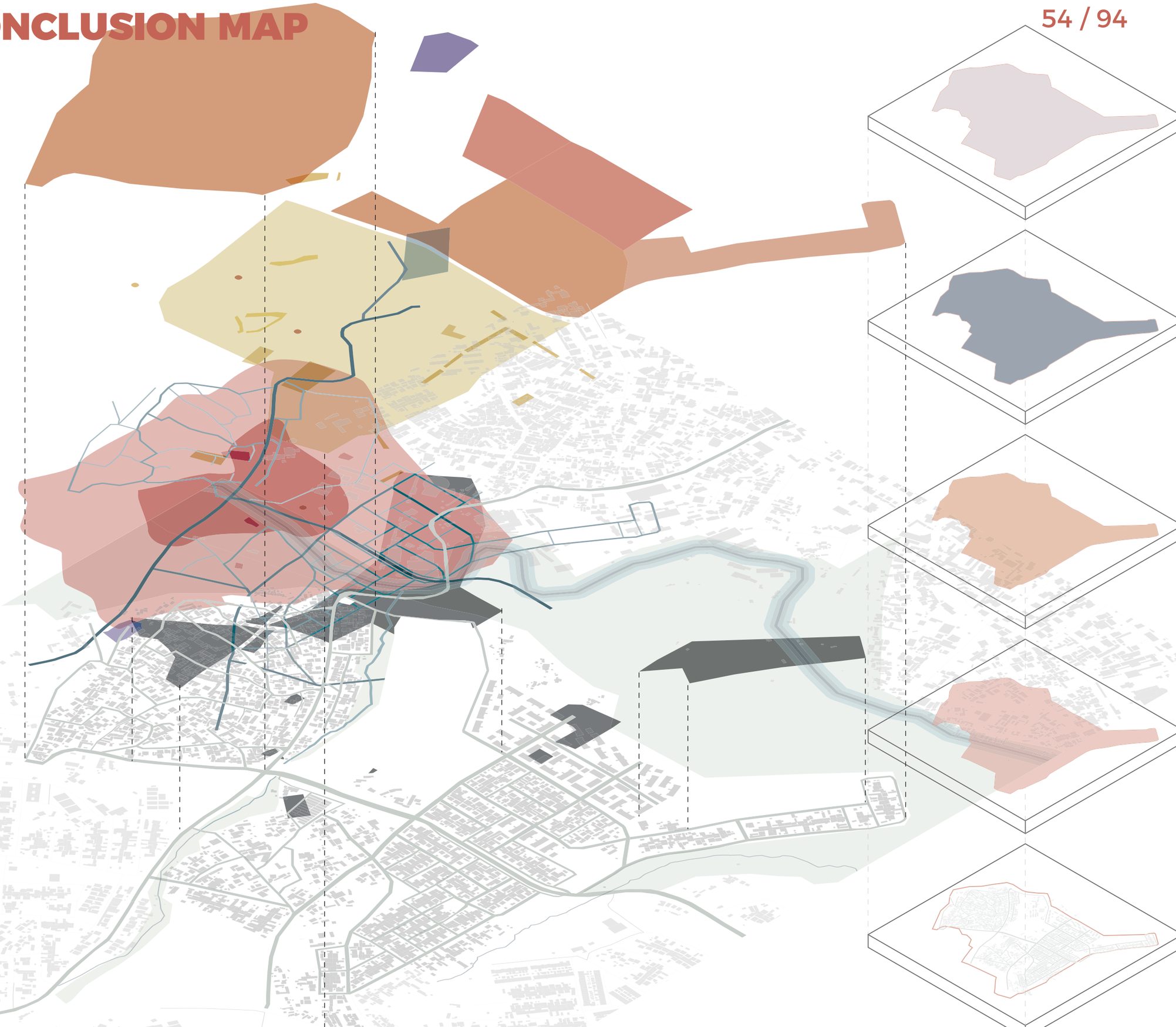
Public toilet - terminal

4. WEYIRA: LAYER 4: CURRENT HOUSING

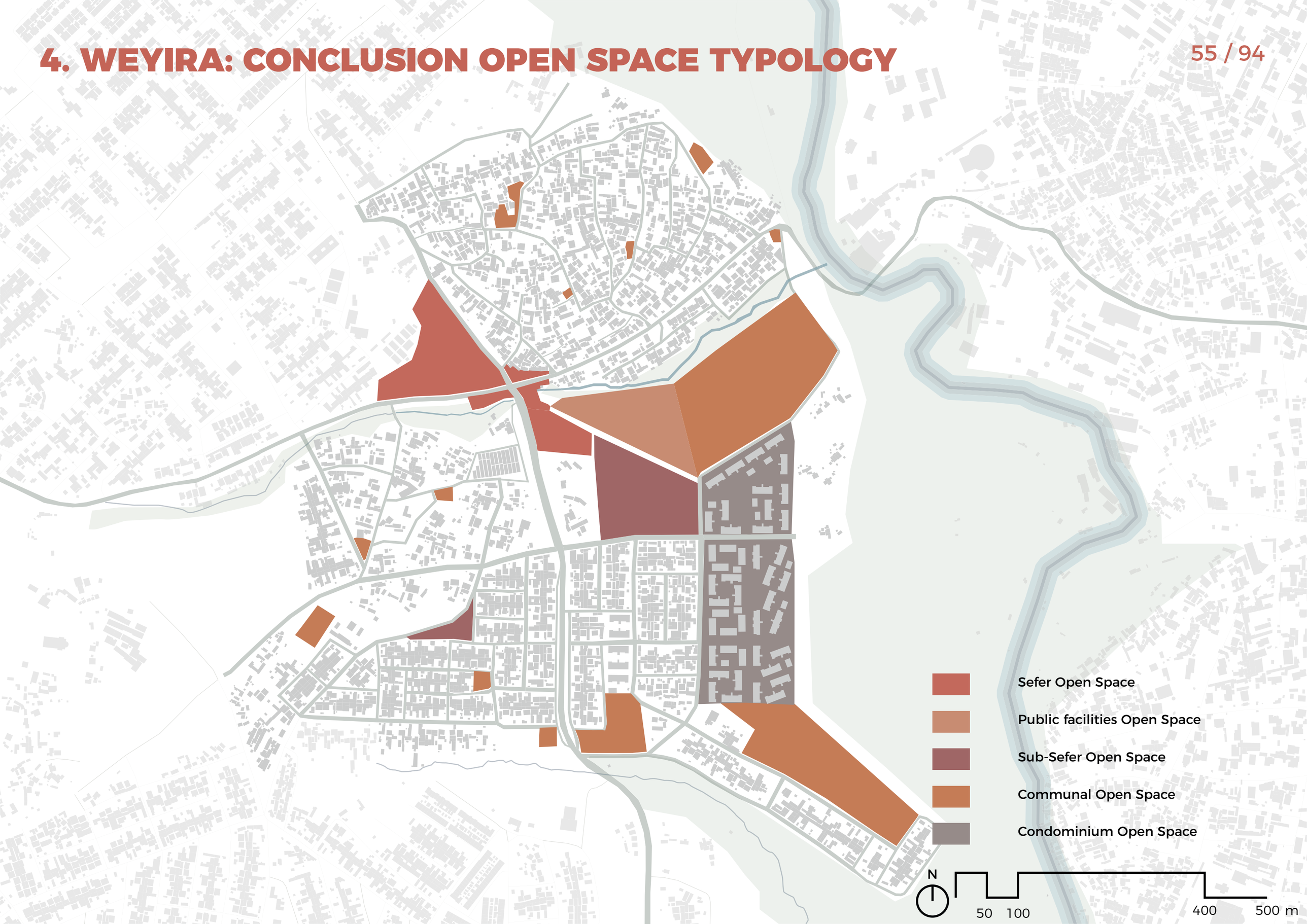


4. WEYIRA: LAYER 4: CURRENT TYPOLOGIES

4. WEYIRA: CONCLUSION MAP

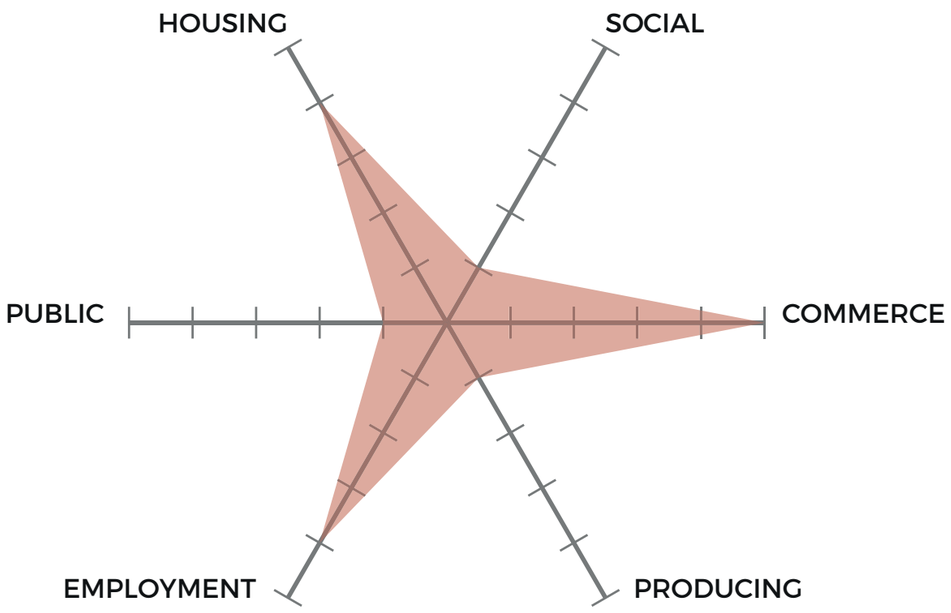


4. WEYIRA: CONCLUSION OPEN SPACE TYPOLOGY

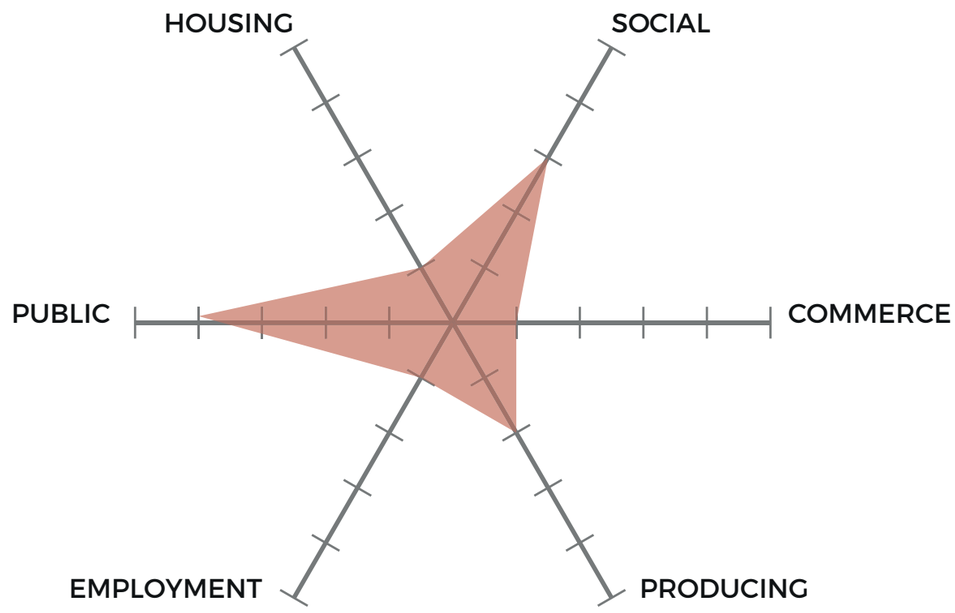


4. WEYIRA: TYPOLOGY --> DESIGN

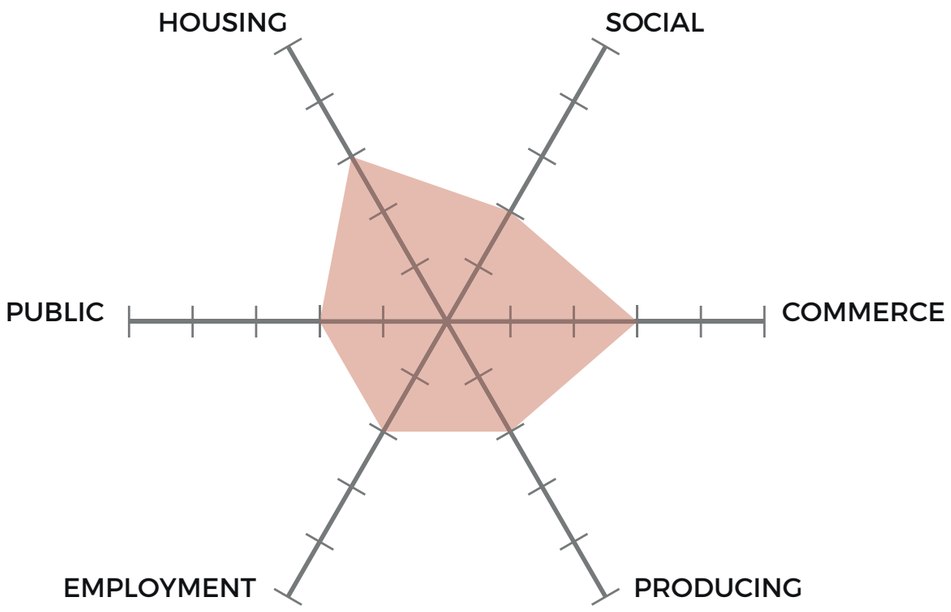
Sefer OS



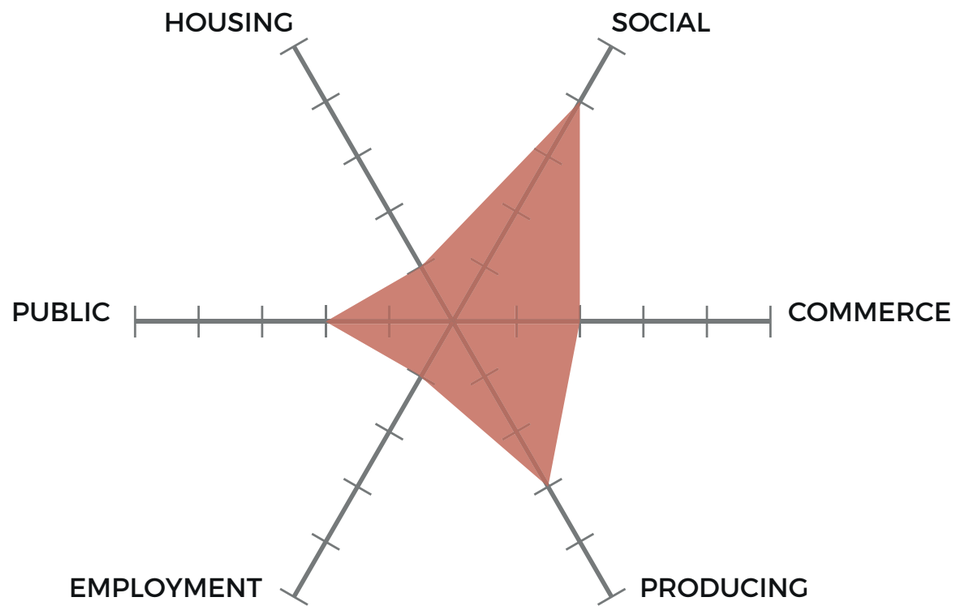
Public facilities OS



Sub-sefer OS



Community OS

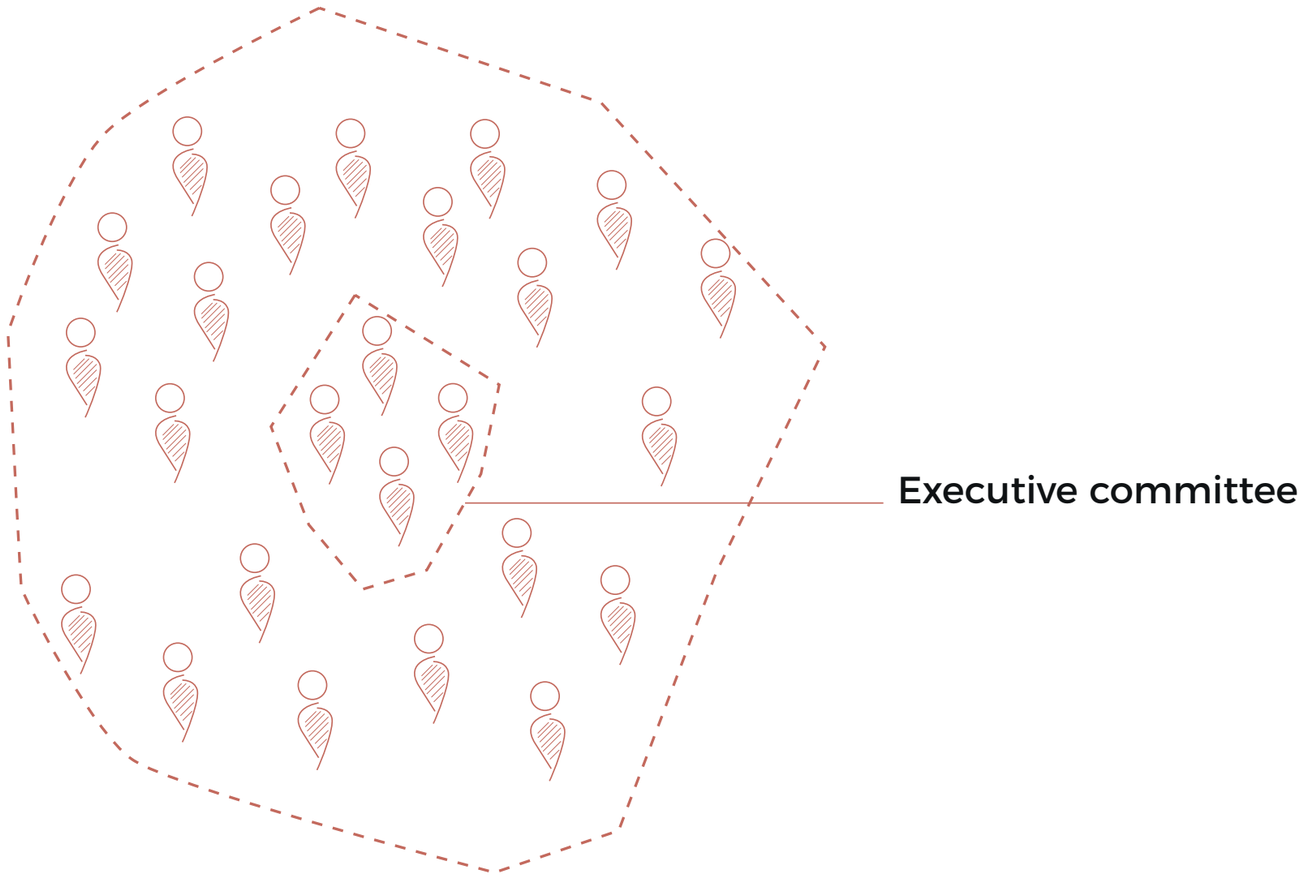


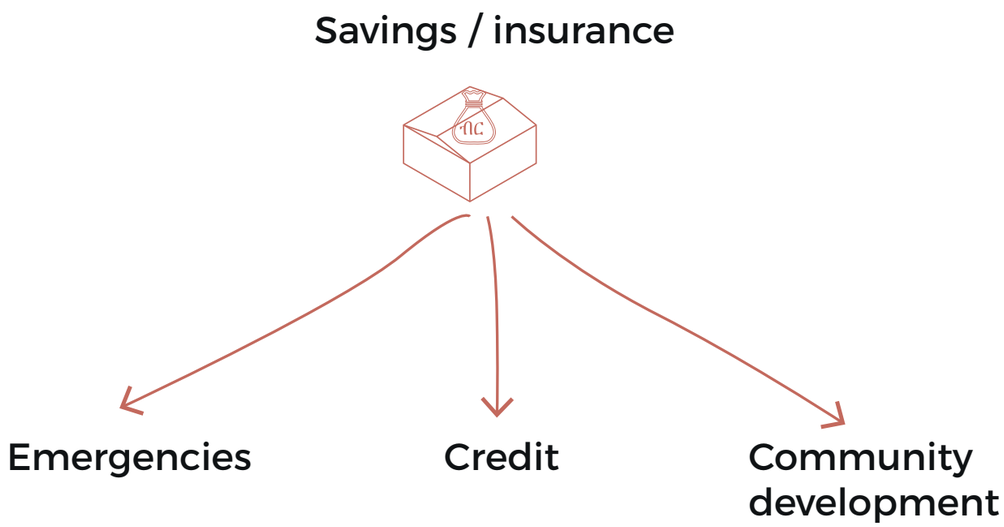
5. POSS STRATEGY: IMPLEMENTATION AND DESIGN

5. LOCAL GOVERNANCE: CURRENT SITUATION

SCALE	REPRESENTATIVE GOVERNMENT	PLANNING
	National: government	National Planning Commission (NPC)
	State: Addis Ababa autonomous region	Addis Ababa planning commission
		Derived from the 2017 Master plan
	Sub-city: Kolfe Keranyo	Local Development Plan
	Woreda: 6	
	?	

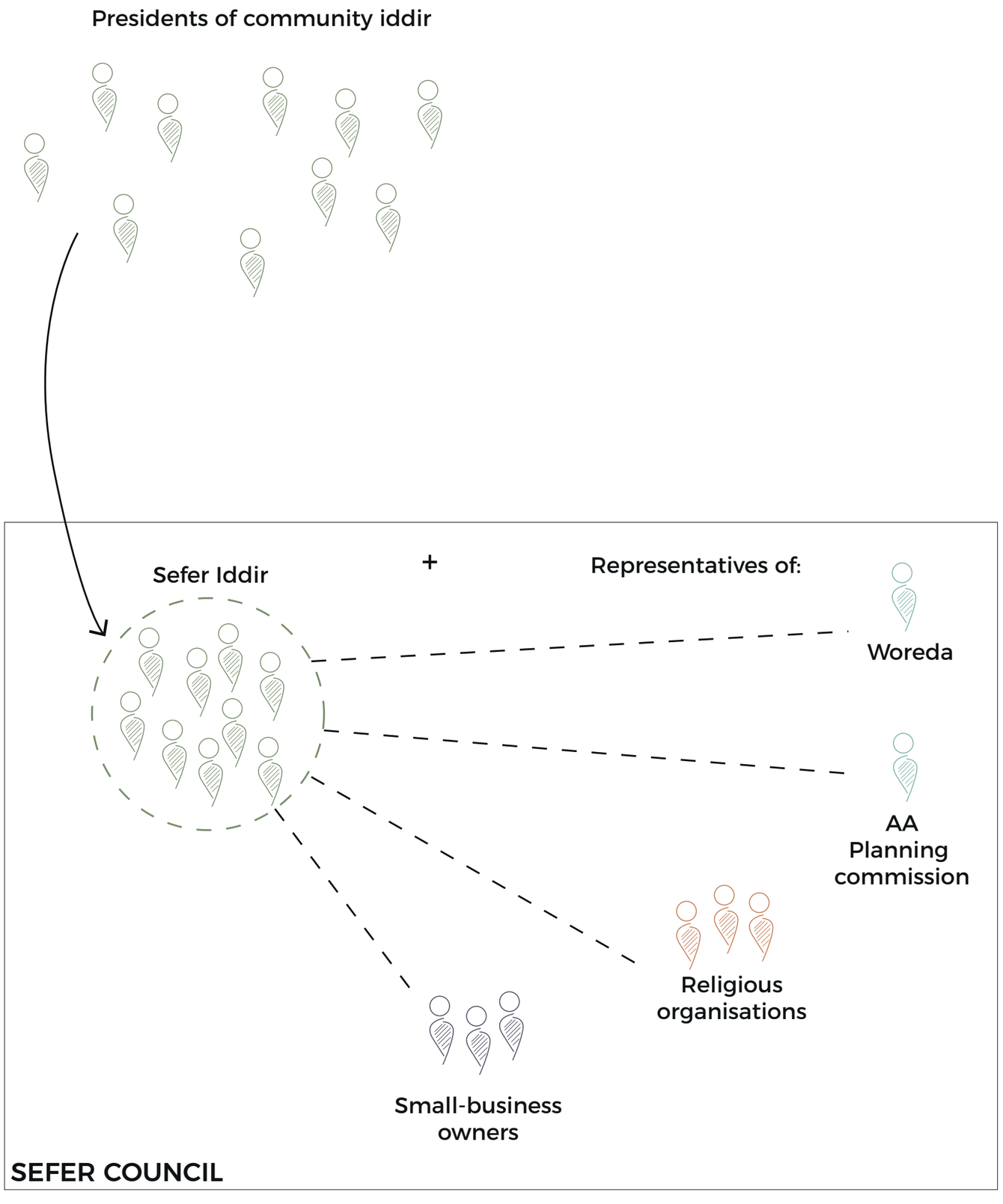
5. LOCAL GOVERNANCE: IDDIR





5. LOCAL GOVERNANCE: SPATIAL REPRESENTATION

5. LOCAL GOVERNANCE: SEFER COUNCIL PROPOSAL



5. LAYERED DESIGN: 1_POSS

Main stakeholders:

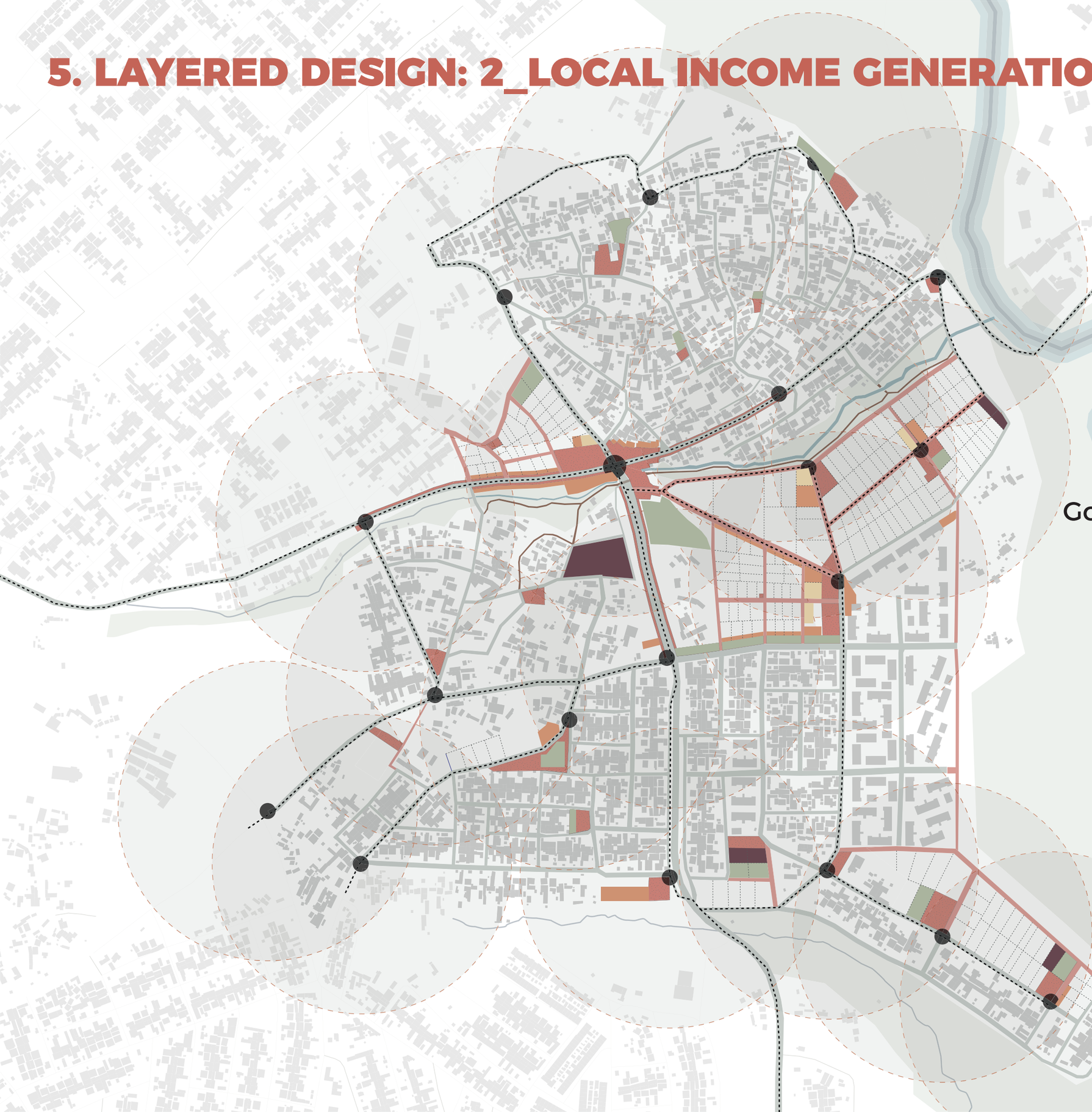
Ministry of infrastructure
Anbessa bus company
Private firms
Collectives
local workers
local community

Minibus stop
Transport connection
200 meter walking radius
Productive Open Space
New roads

N

50 100 400 500 m

5. LAYERED DESIGN: 2_LOCAL INCOME GENERATION



Main stakeholders:

Private firms
NGO's (Urban Harvest)
University (EiABC)
Minibus operators
Government for basic structures

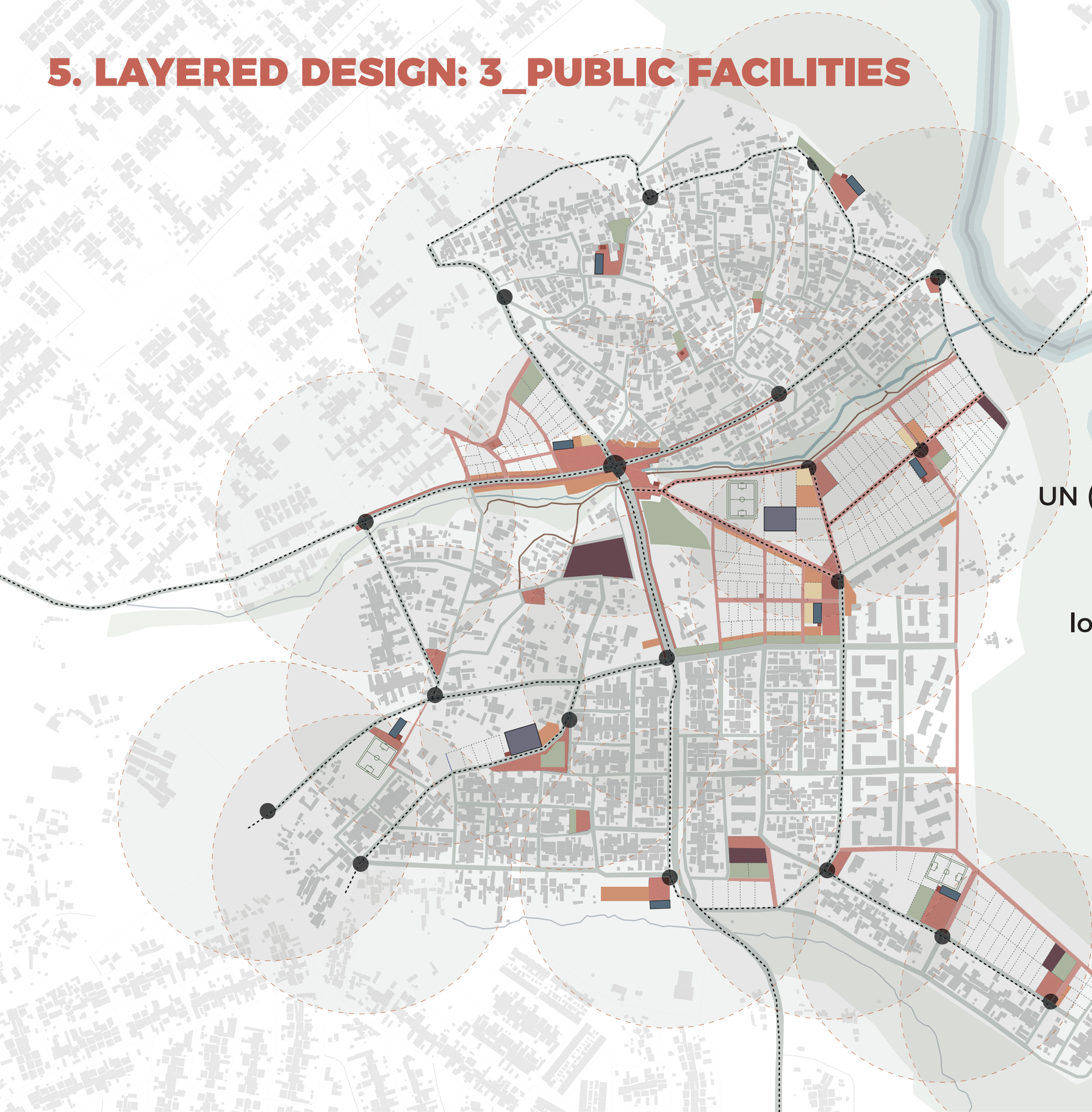
Collectives
local workers
local community
local entrepreneurs
IceAddis (incubator)
Orange Corners
Universities

Agriculture
Manufacturing
Commercial
Service

N

50 100 400 500 m

5. LAYERED DESIGN: 3_PUBLIC FACILITIES



Main stakeholders:

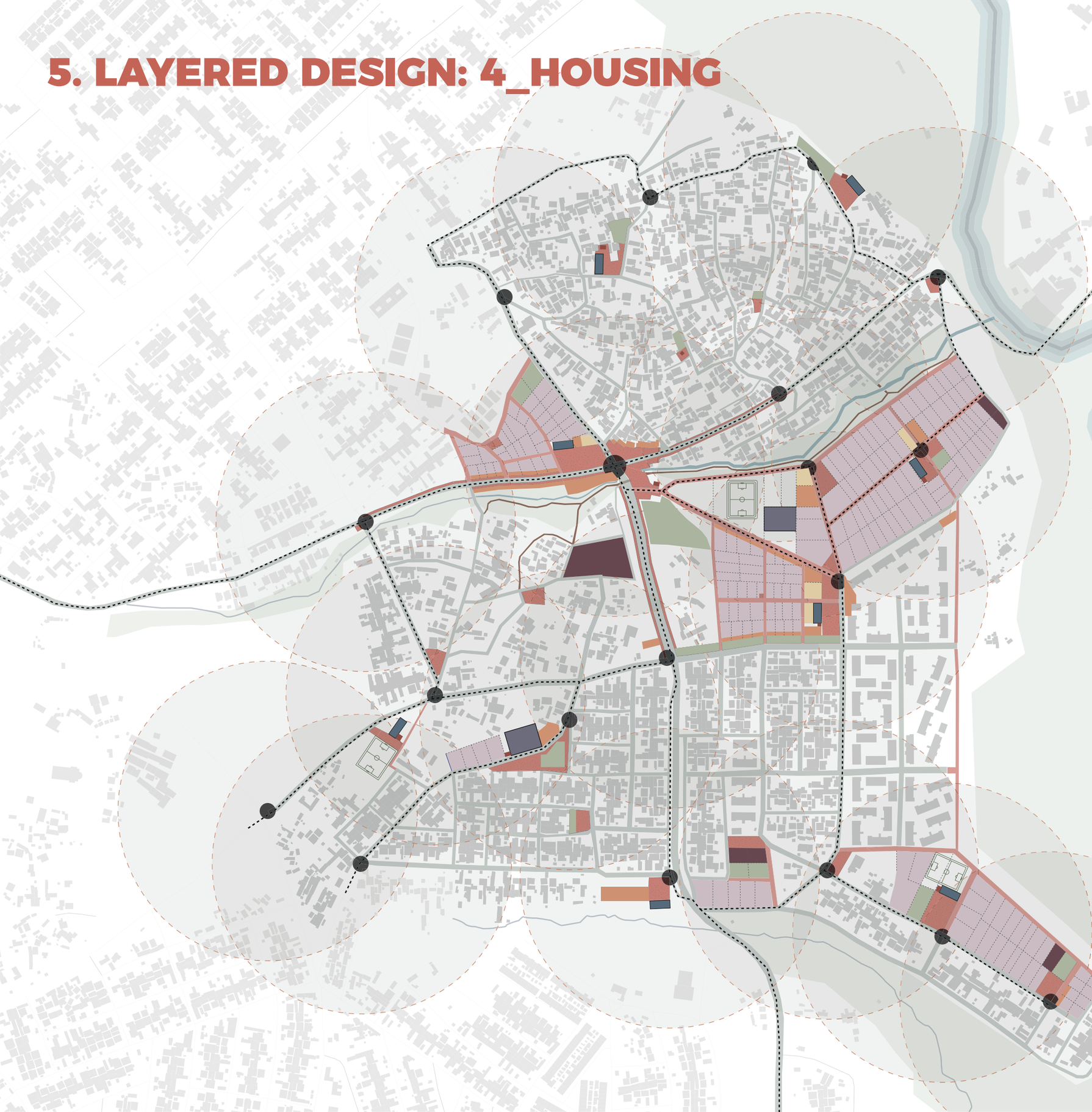
Ministry of health
Ministry of education
UN (Sustainable Development Goal)
The Worldbank
NGO's
Start-ups
local teachers, nurses, doctors...

Primary school
Secondary school
Health and sanitation center

N

50 100 400 500 m

5. LAYERED DESIGN: 4_HOUSING



Main stakeholders:

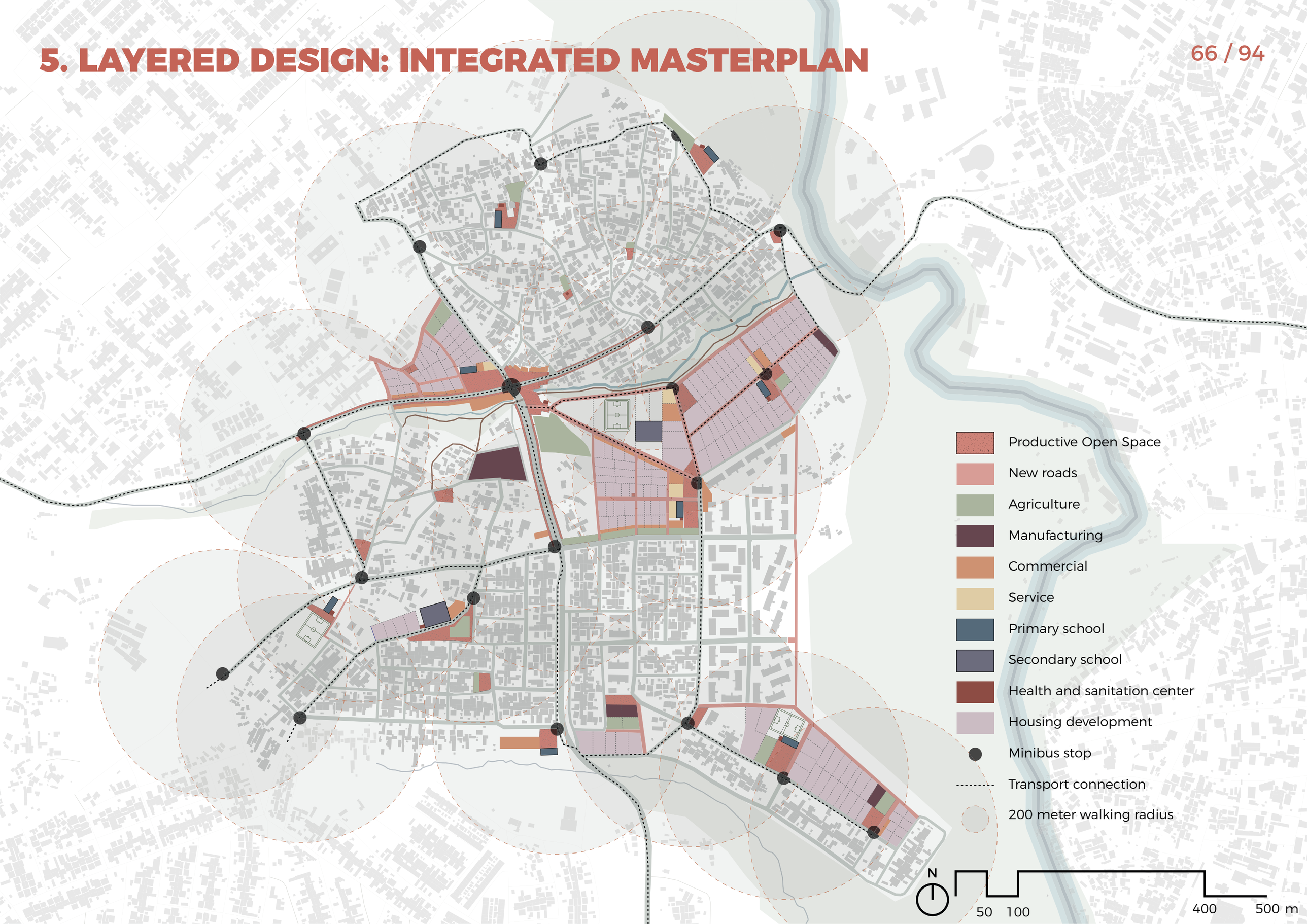
Private developers
Social housing corporations
Residents
Collectives
Private firms
Collectives
EiABC
Network of local workers

Housing development

N

50 100 400 500 m

5. LAYERED DESIGN: INTEGRATED MASTERPLAN



5. DAILY LIFE TRAJECTORIES DEFINE THE ROUTE

17:30
St. Mariam

8:20
Work Betty
@ EiABC

19:00
8:00
Haile's Home

8:00
19:10
Betty's Home

8:10
17:15
Bus terminal

5. DAILY LIFE TRAJECTORIES DEFINE THE ROUTE

19:00
8:00
Haile's Home

17:30
St. Mariam

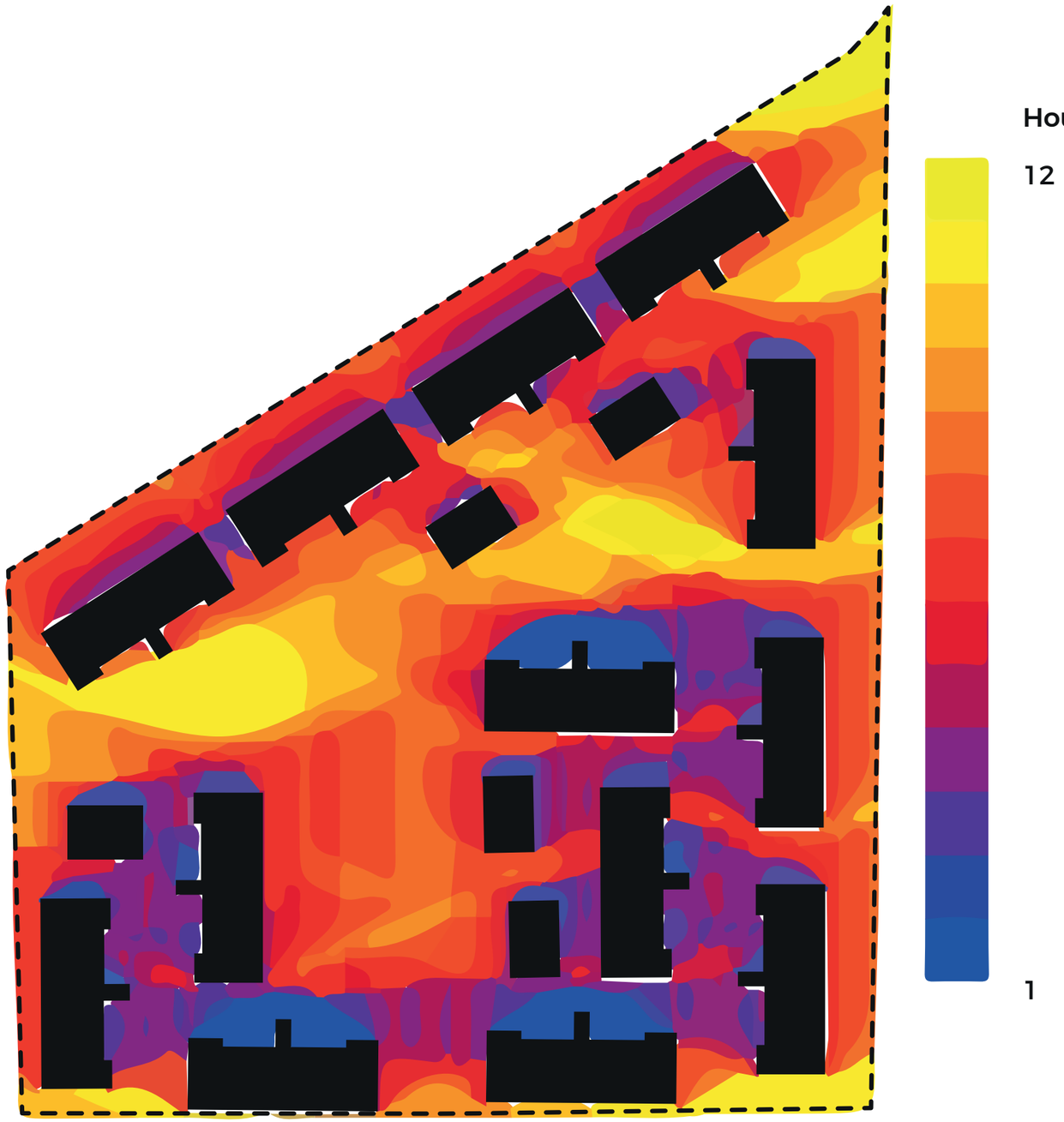
8:20

Work Betty
@ EiABC

8:00
19:10
Betty's Home

8:10
17:15
Bus terminal

5. BETTY'S HOME: BASE; BEST PLACE FOR AGRICULTURE?



Sunlight Hours analysis
mid January

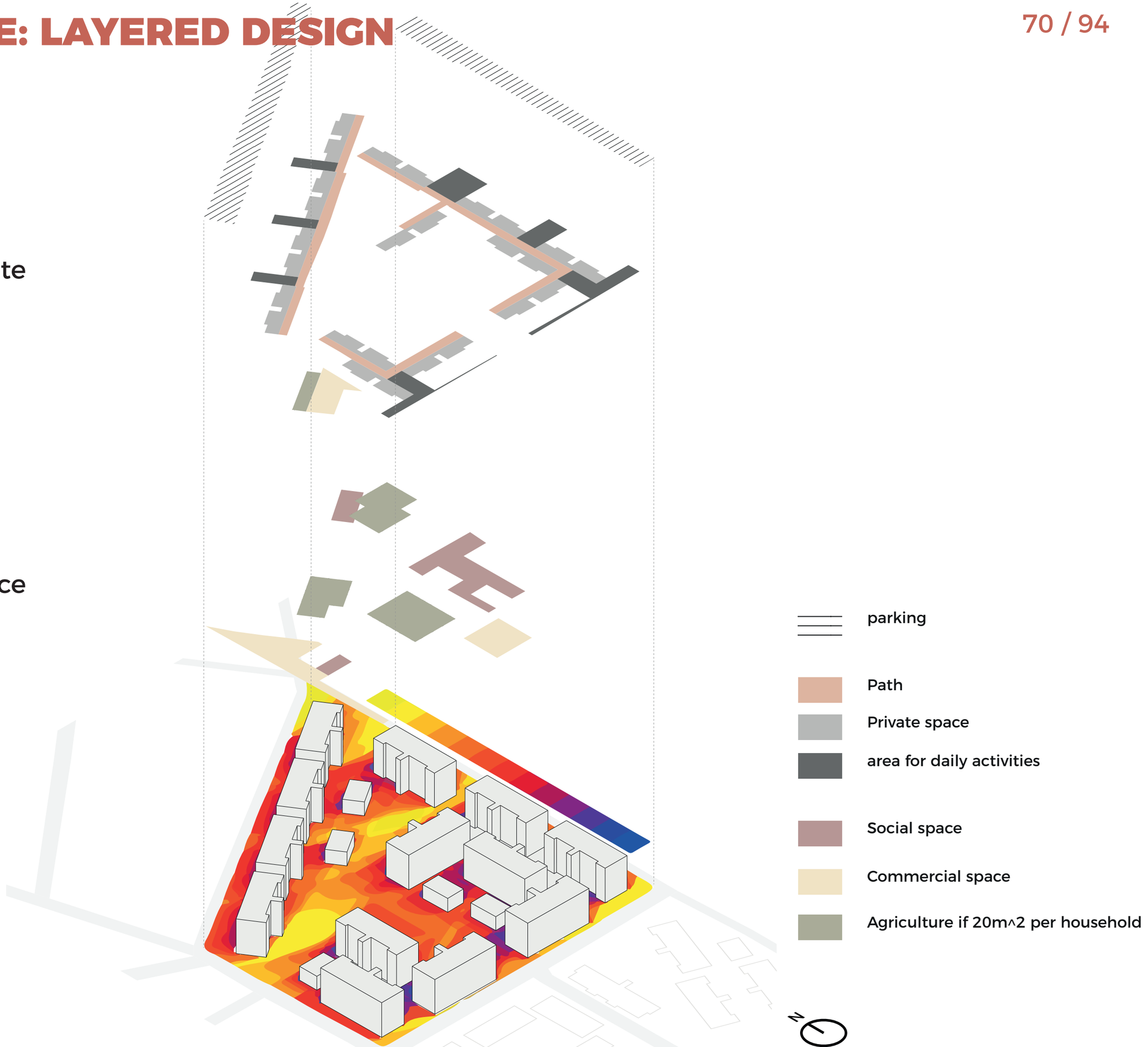
N

5. BETTY'S HOME: LAYERED DESIGN

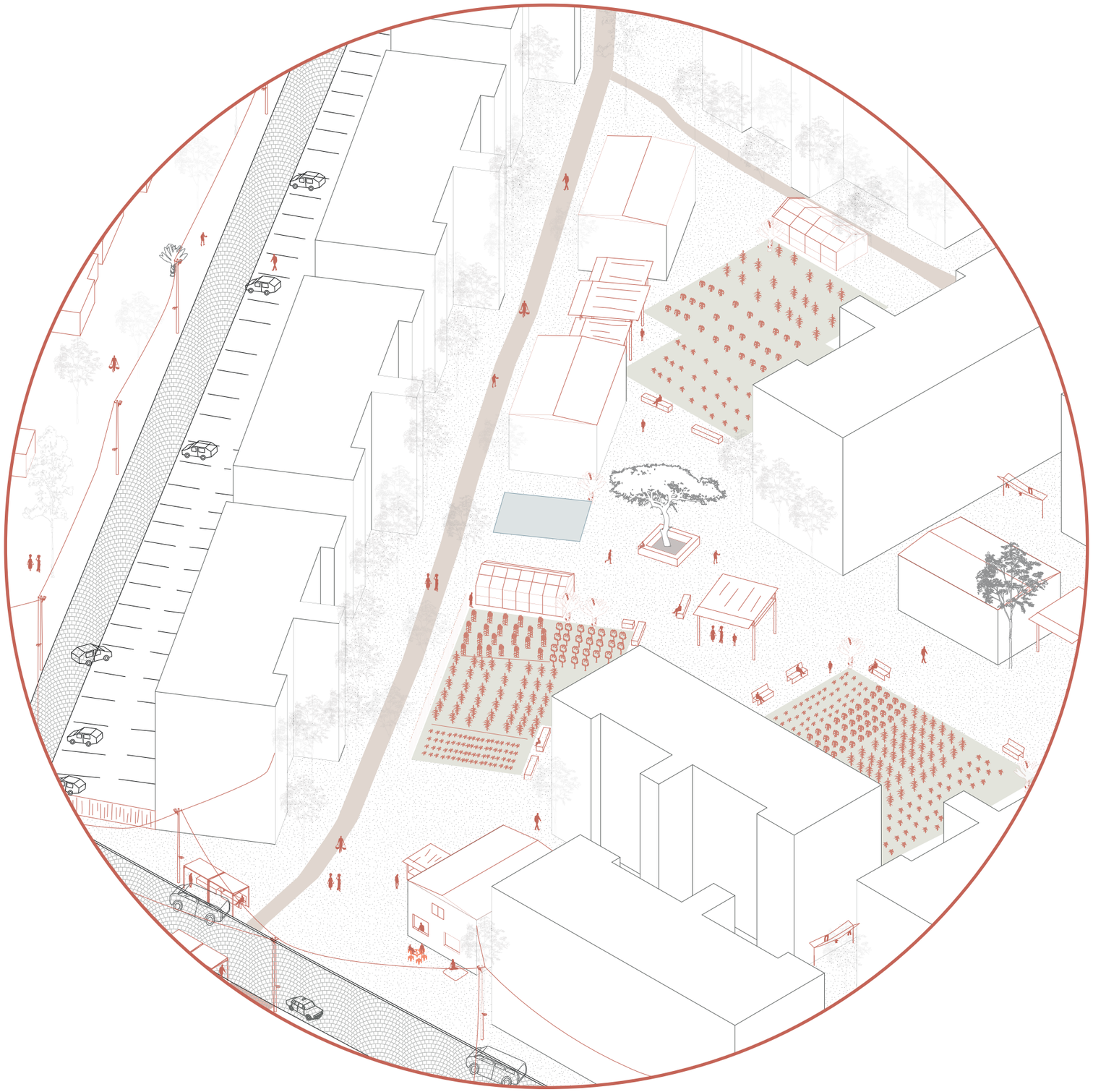
L3: Parking

L2: Daily activities: semi-private transition zone

L1: Productive Open Space System

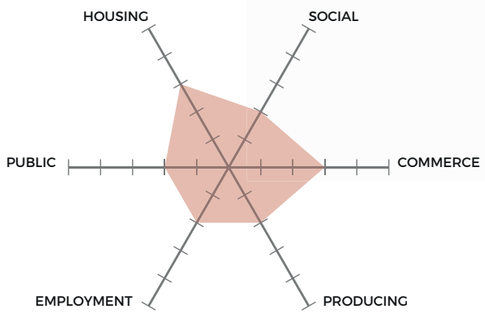


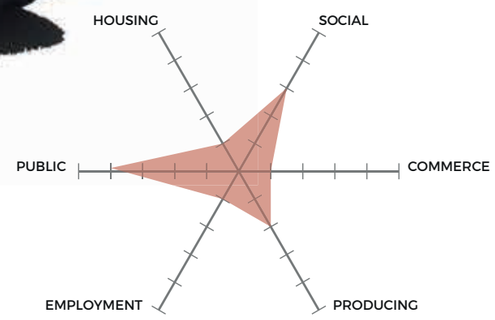
5. BETTY'S HOME: OVERVIEW



5. BETTY'S HOME: ENTRANCE TO THE CONDOMINIUM

5. FROM BETTY TO TERMINAL: PUBLIC CORRIDOR



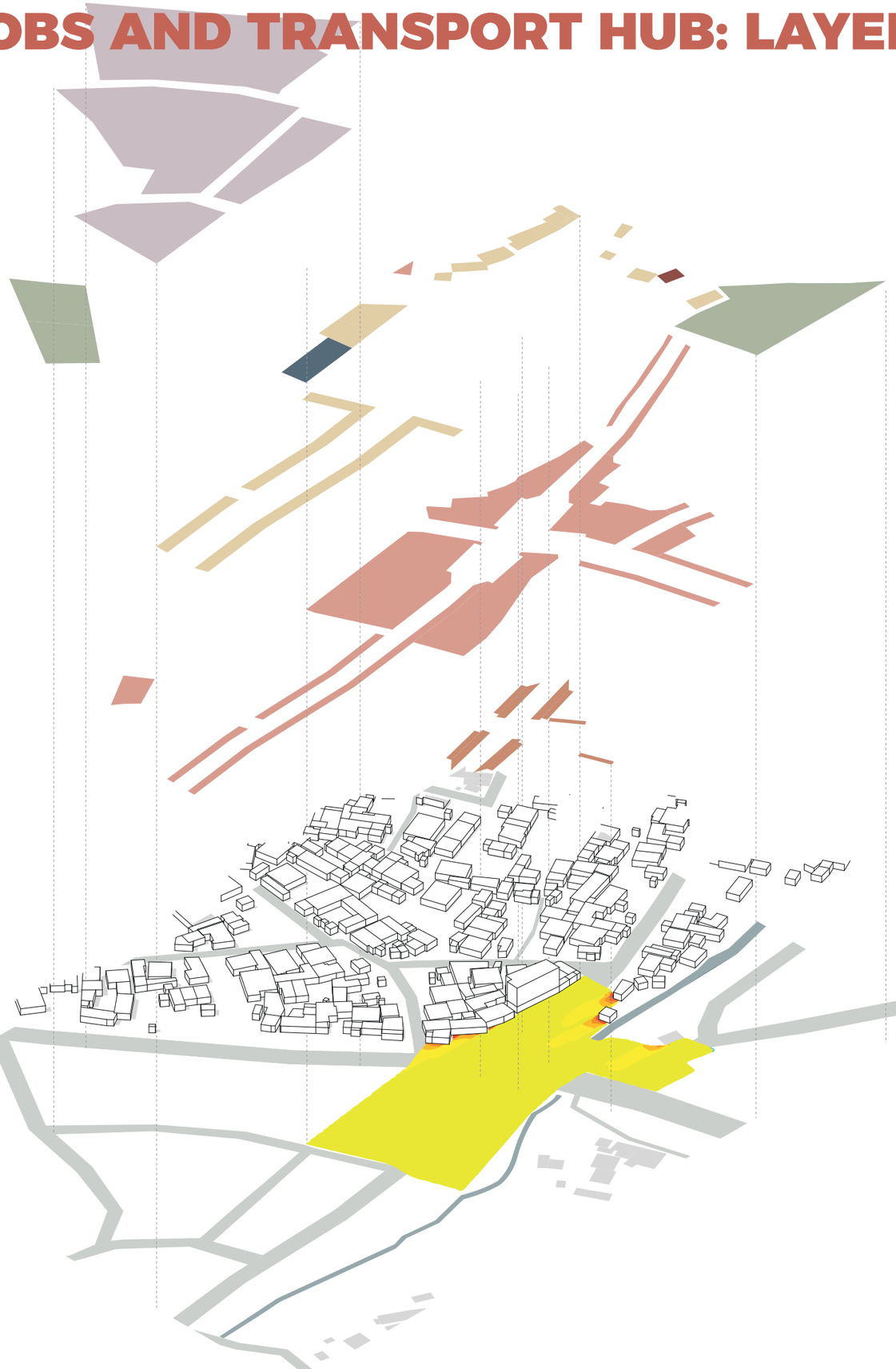


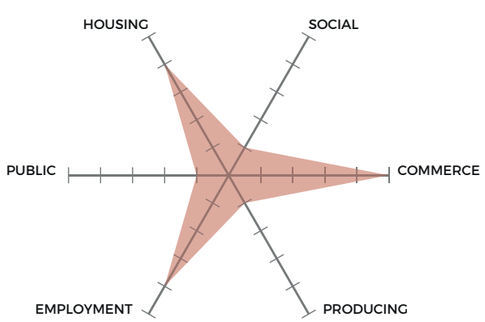
5. NEW TERMINAL: JOBS AND TRANSPORT HUB: LAYERED

L3: Housing development

L2: Land-use; employment and education

L1: Productive Open Space System





Housing

Agriculture

Employment: service or commerce

Education

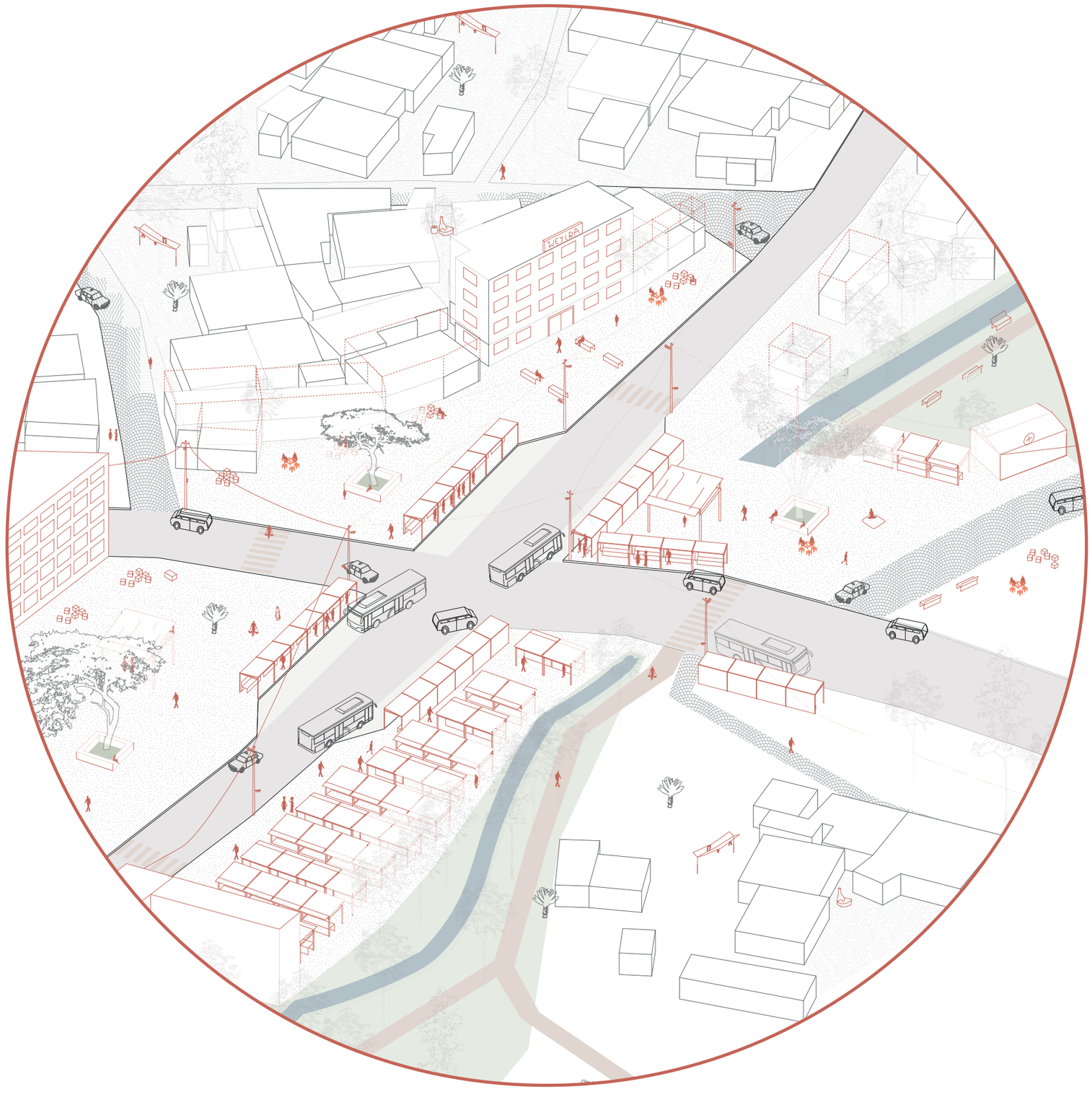
Health

Productive open space

Bus stop

N

5. NEW TERMINAL: JOBS AND TRANSPORT HUB: OVERVIEW

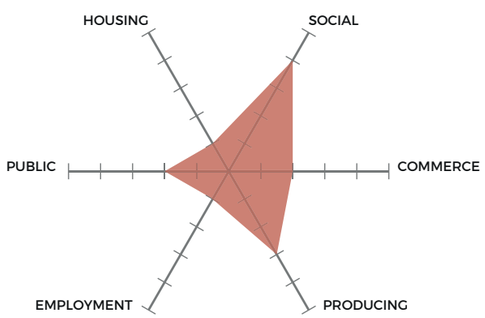


5. NEW TERMINAL: JOBS AND TRANSPORT HUB: IMPRESSION

5. HAILE'S HOME: LAYERED DESIGN

L2: Public facilities

L1: Productive Open Space System



Education

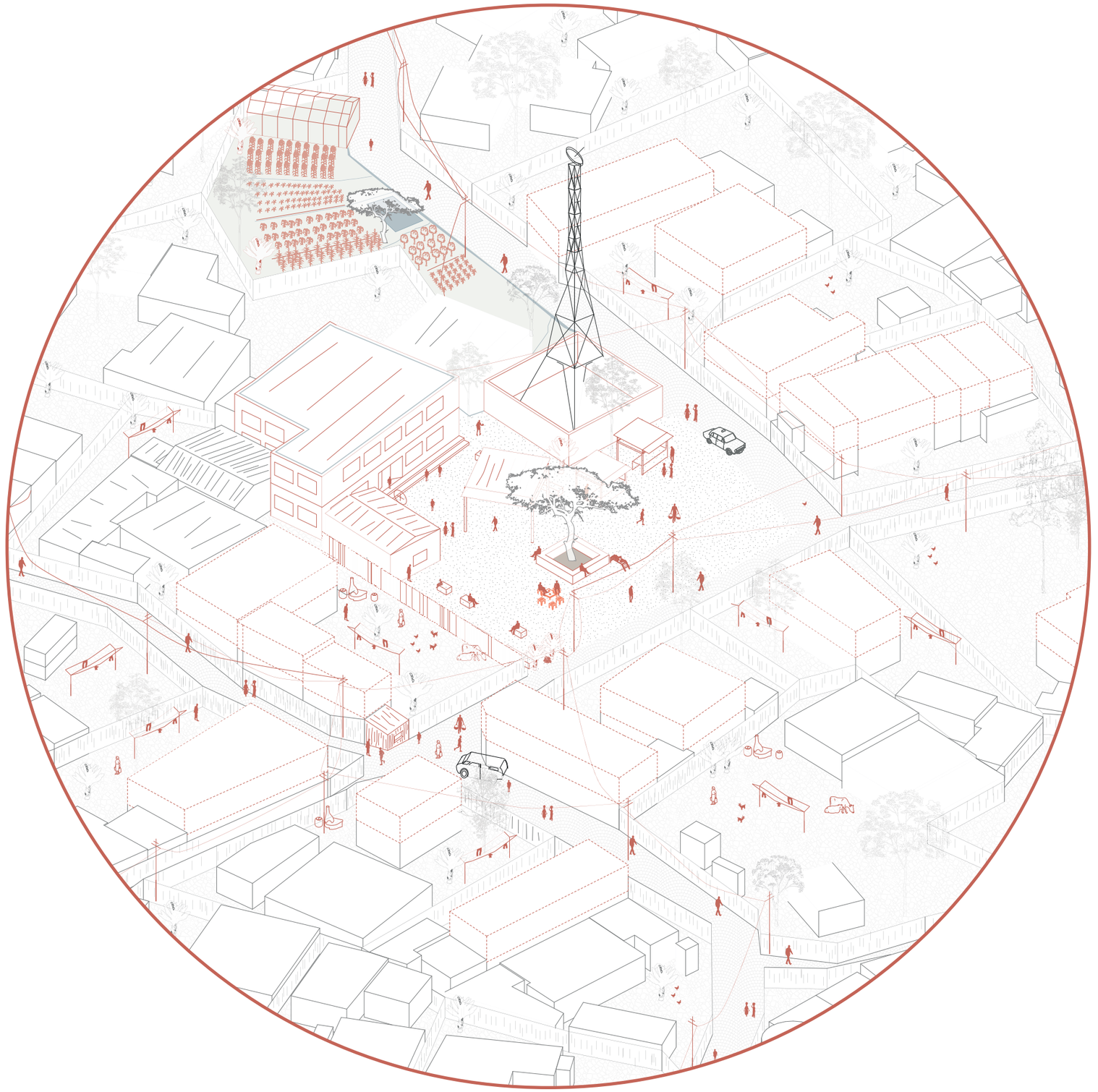
health center

Social - commerce space

Agriculture

N

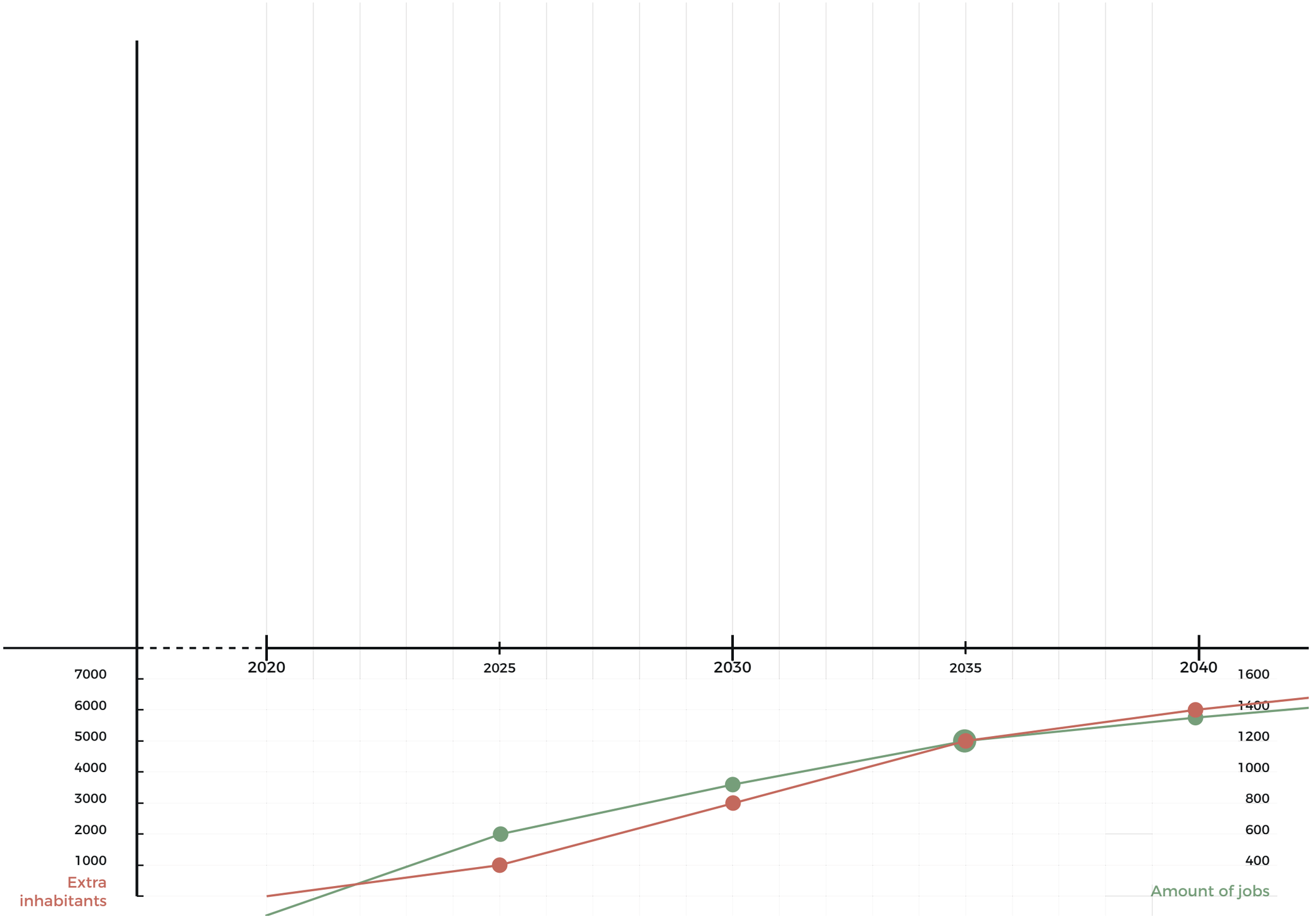
5. HAILE'S HOME: OVERVIEW



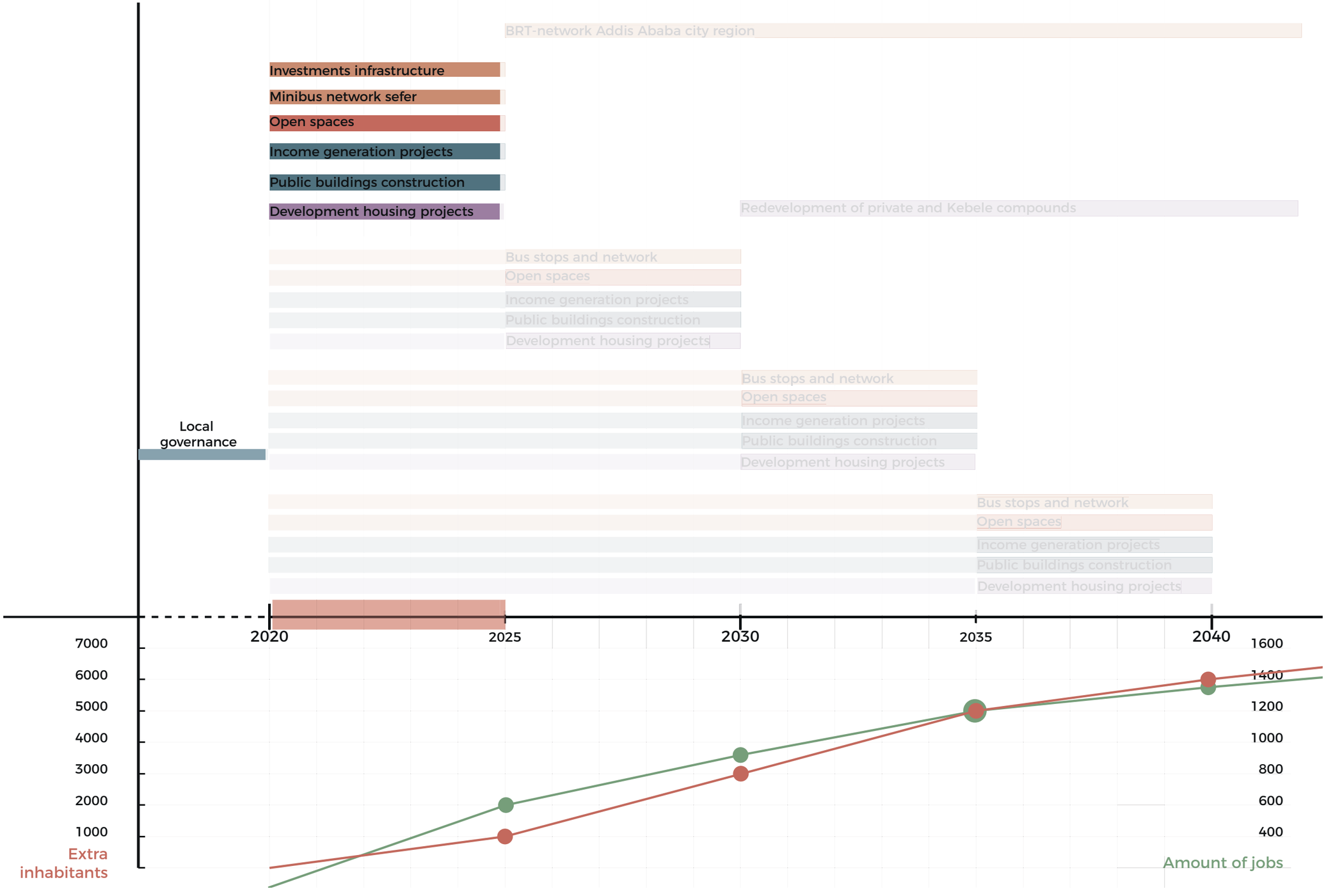
5. HAILE'S HOME: COMMUNAL SPACE

6. PHASING AND PERFORMANCE: WHAT IS ACHIEVED?

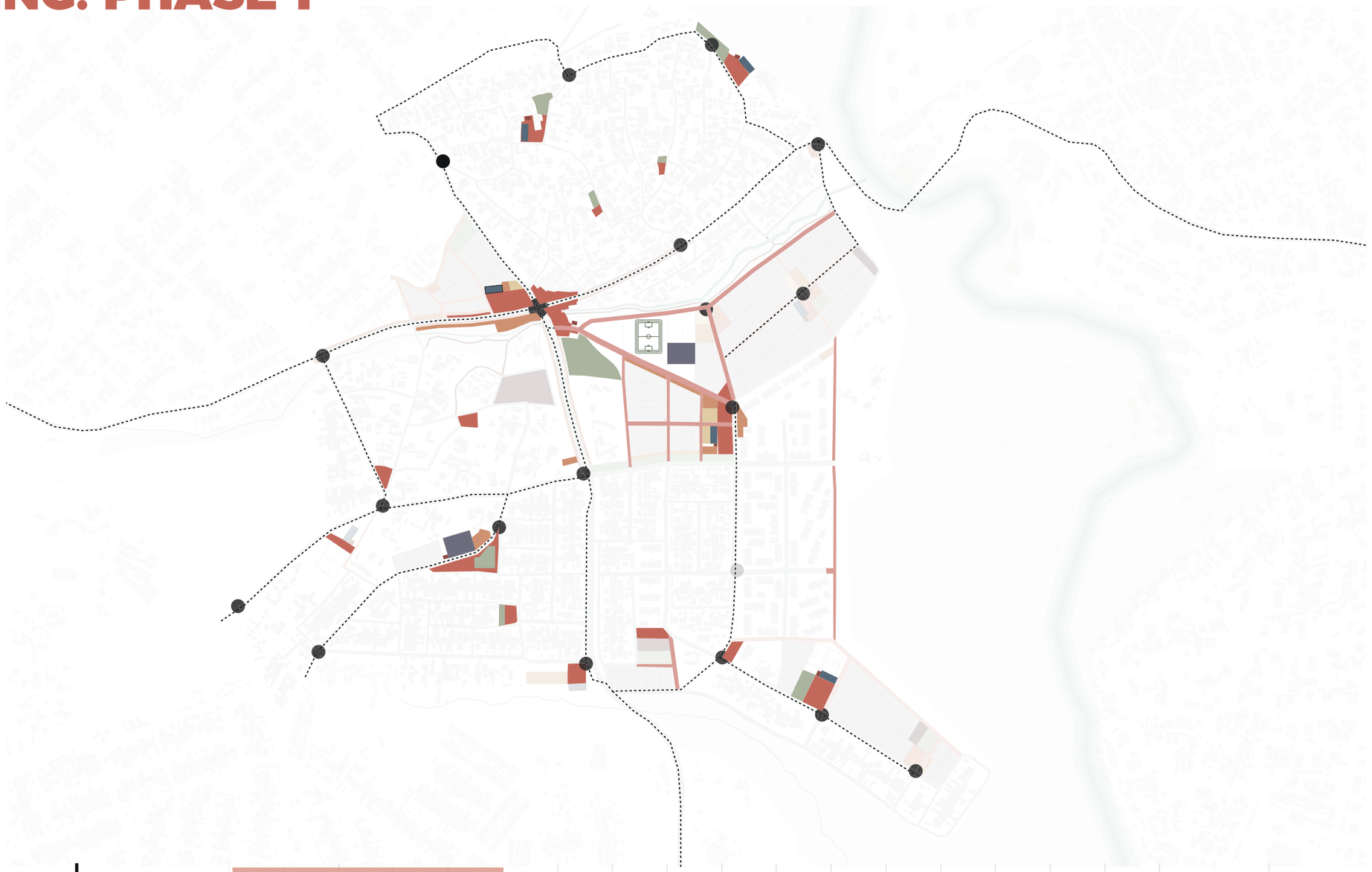
6. PHASING

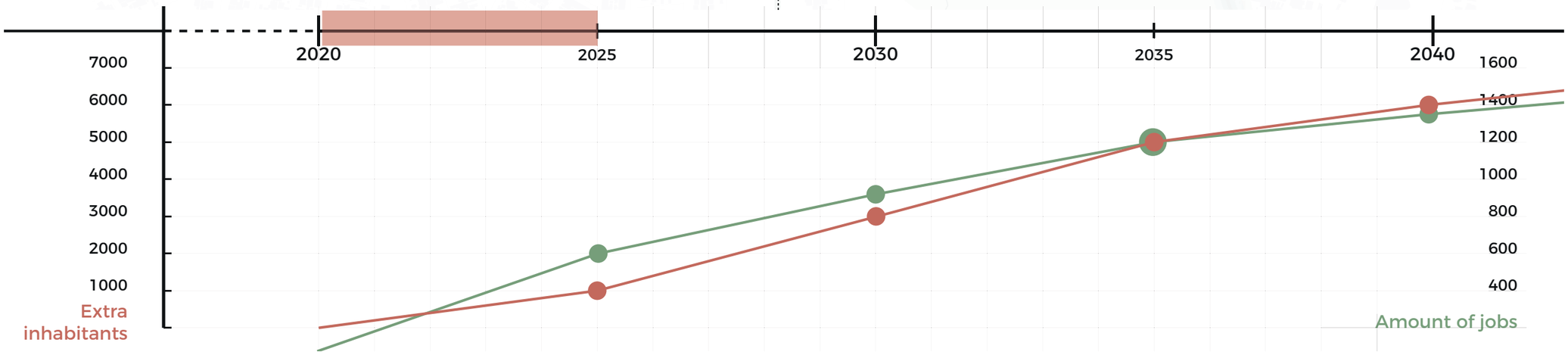

2020
2025
2030
2035
2040
7000
6000
5000
4000
3000
2000
1000
Extra inhabitants
1600
1400
1200
1000
800
600
400
Amount of jobs

6. PHASING: PHASE 1

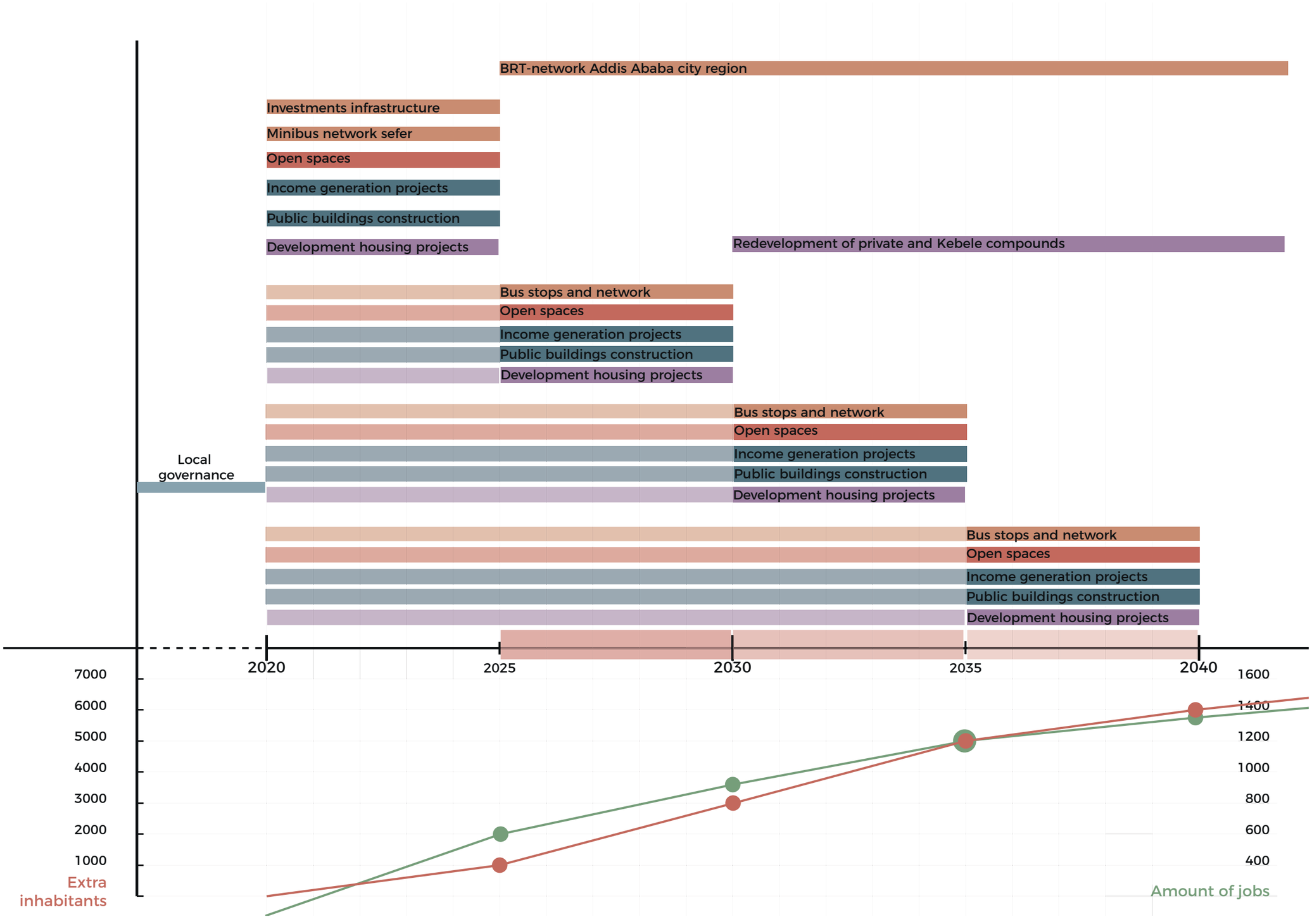


6. PHASING: PHASE 1

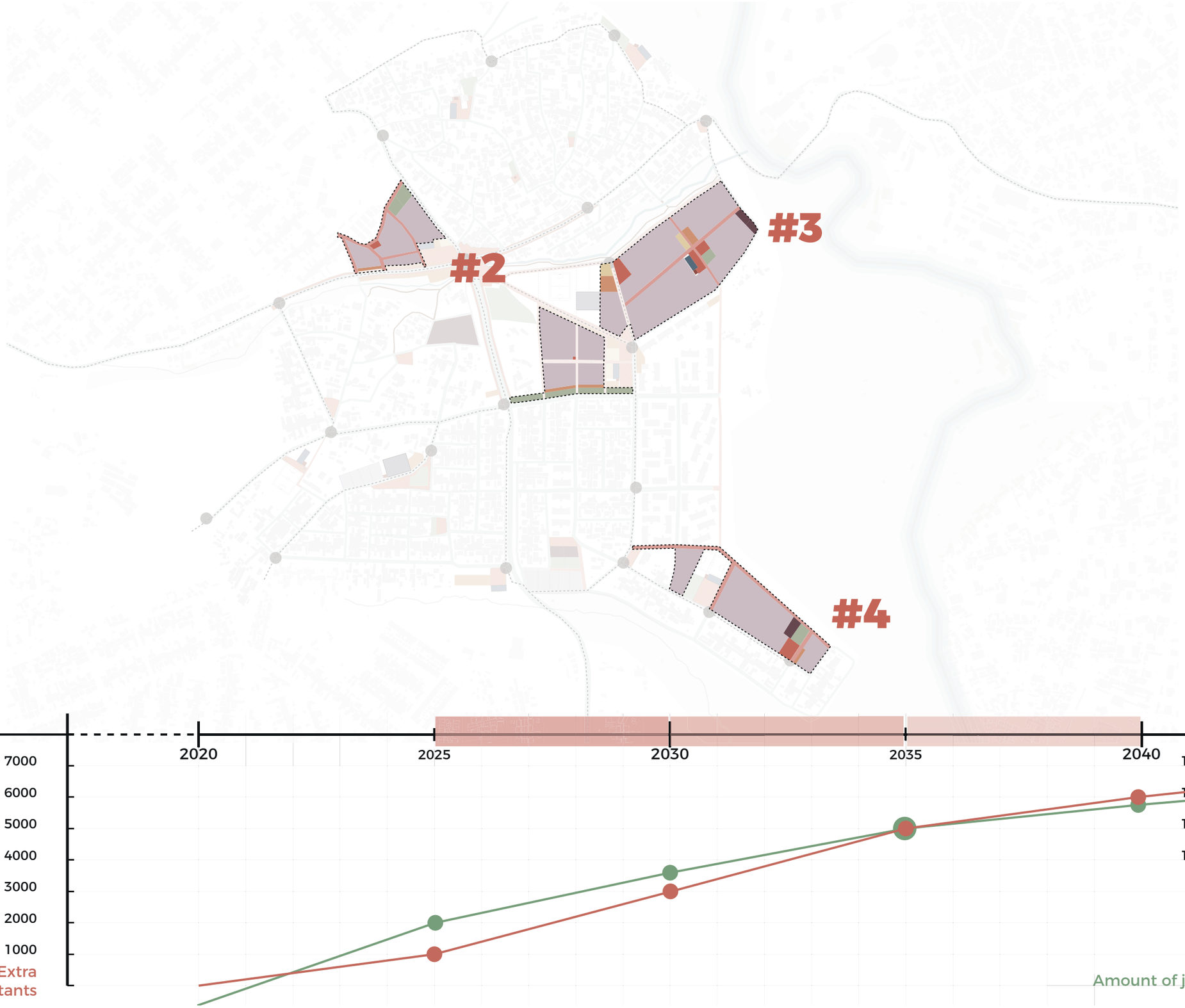




6. PHASING: PHASE 2 + 3 + 4



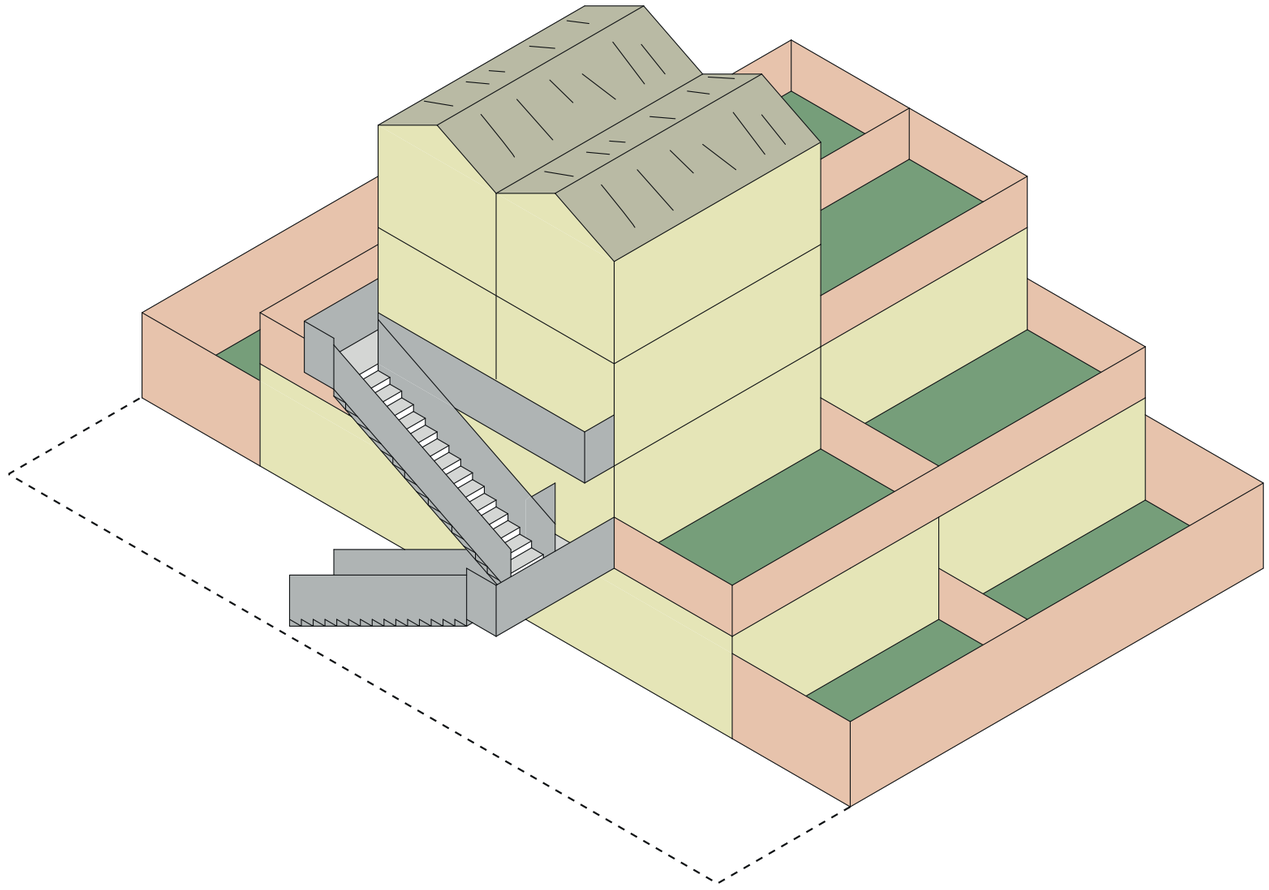
6. PHASING: PHASE 2 + 3 + 4



6. PERFORMANCE

LAYER	OBJECTIVES	SURFACE IN STRATEGY	ACHIEVED	Y / N
POSS	20 % open space / total	151.826 m²	*22 %*	
	1/2 * [current travel time]	-	*N / A*	?
INCOME GENERATION	manufacturing [10m²]: 581 jobs	5120 m²	*512 jobs*	
	agriculture [20m²]: 581 jobs	12756 m²	*637 jobs*	
	service [5m²]: 581 jobs	4502 m²	*900 jobs*	
	commercial [5m²]: 581 jobs	7274 m²	*1454 jobs*	
	2324 jobs within the sefer		*total: 3505 jobs (=38%)*	
PUBLIC FACILITIES	250 m² footprint for 250 primary students (= 2 floors)	2000 m²	*8 primary schools*	
	1200 m² footprint for 1200 secondary students (= 3 floors)	2400 m²	*2 secondary schools*	
	40 m² per sanitation unit	360 m²	*9 sanitation units*	
HOUSING	6000 inhabitants [18.75 m²]	67.096 m²	*3578 inhabitants*	

6. PERFORMANCE: OTHER HOUSING TYPOLOGIES



8 dwellings (4 inhabitants)
30m^2 open space per household
Total compound: 340 m^2

10.6 m^2 footprint / person

6. PERFORMANCE: RETURN TO THE VISION

A PRODUCTIVE OPEN SPACE SYSTEMS CONTRIBUTES TO THE INCREASED ACCESS TO LOCAL INCOME GENERATION.

6. PERFORMANCE: RETURN TO THE VISION

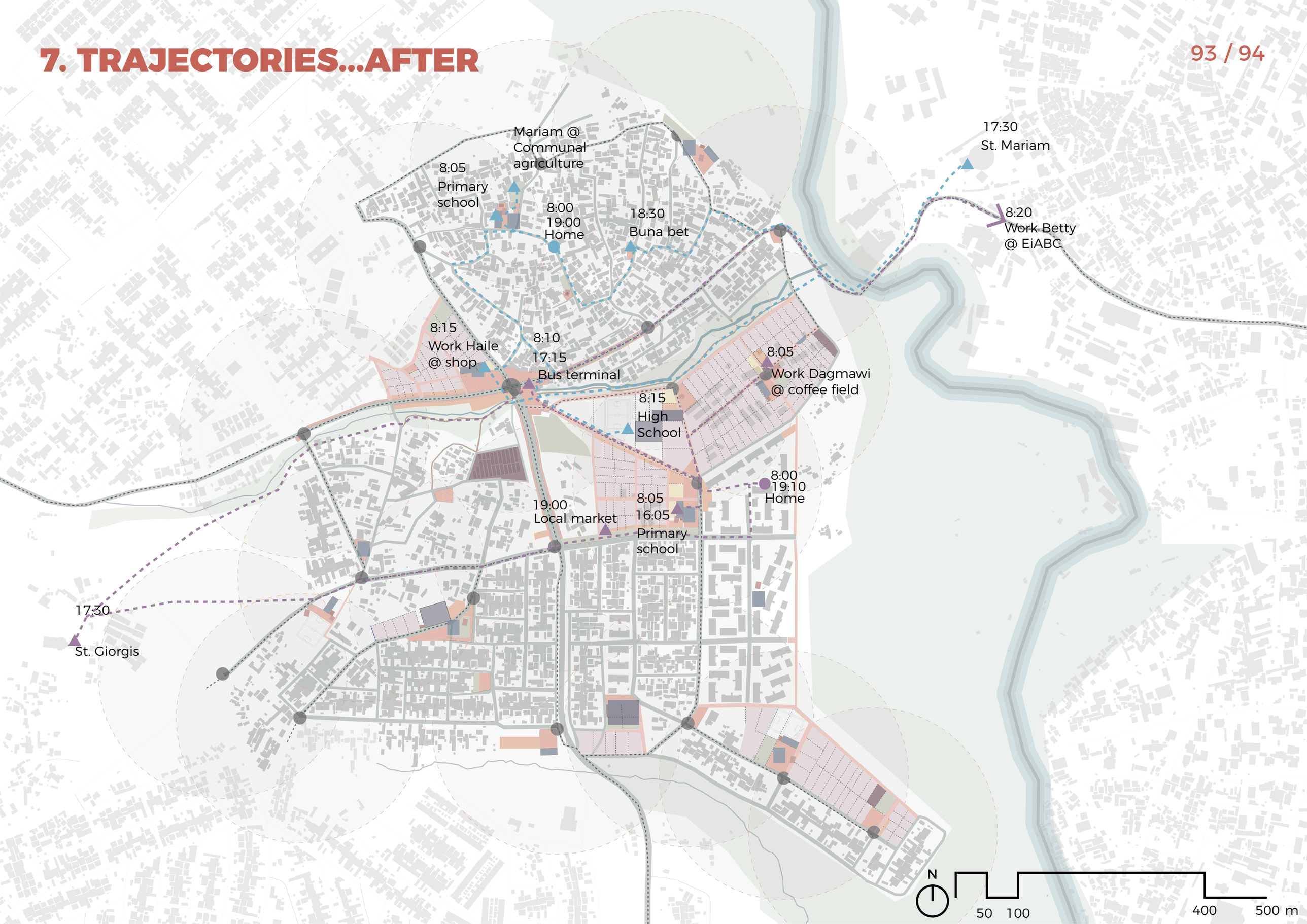
	CATEGORIES	POSS STRATEGY	CURRENT APPROACHES
ACCESSIBILITY	to income generation	>25 % within own sefer	high travel costs
	to public services	schools + health within sefer	high travel costs
	Integration	housing - employment	no integration
GOVERNANCE	Implementation	local: focus on civic sector (iddir)	top-down, only government + private actors
	use of resources	focus on human capital	lack of financial capital
	Stakeholders involvement	horizontal; all stakeholders involved whole process	vertical hierarchy
SOCIAL	mixity	mixing of income groups	creation of income enclaves
	social sustainability	existing social networks	relocation disrupts social ties
SPACE-USE	productive use	open space for productive use	open space for more buildings
	water resilience	Protective buffer zones around rivers	Protective buffer zones around rivers
HOUSING	typologies	Mixed	Copy paste and modern materials
	private space	creating private open spaces	No private open space

6. REGIONAL DREAM

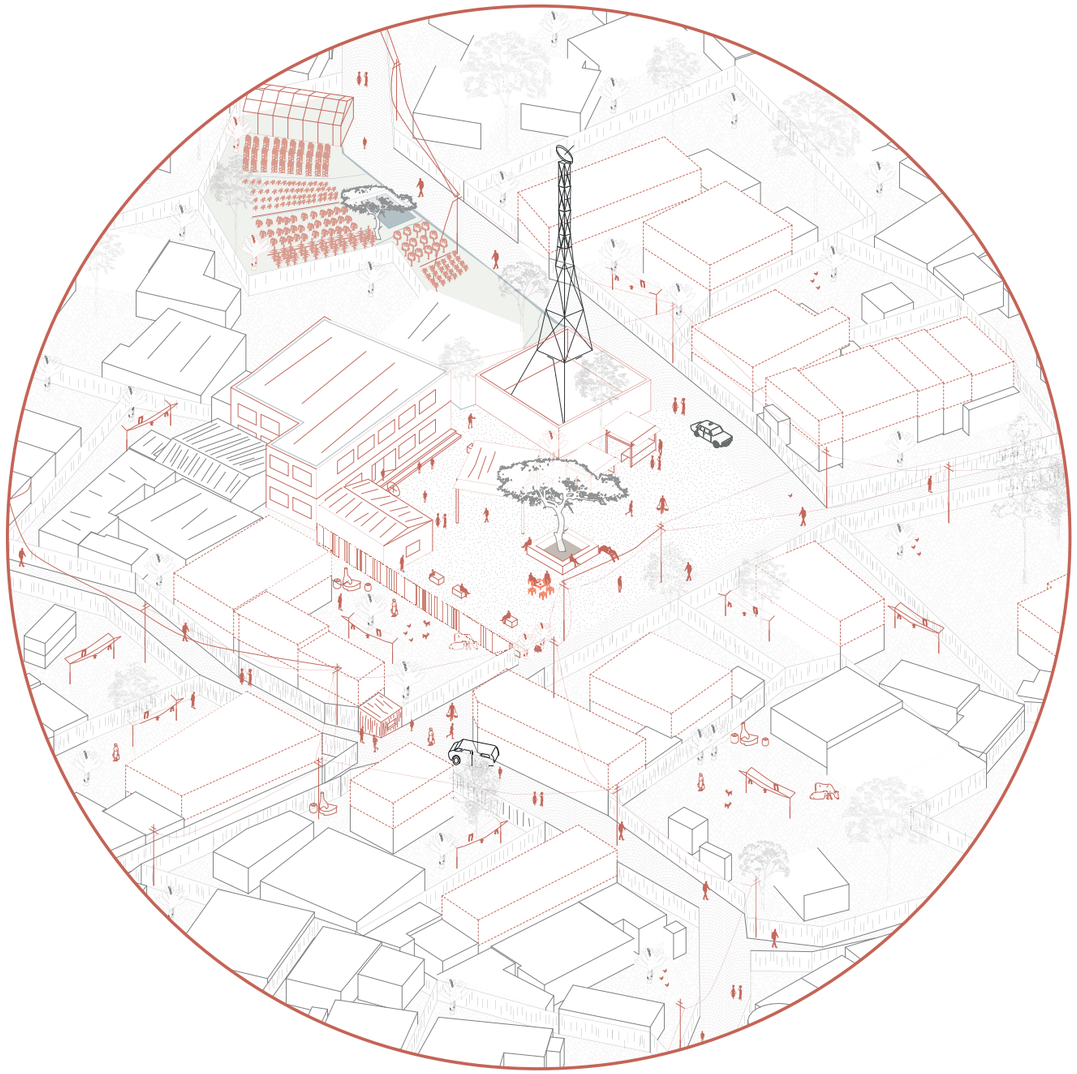
6. REGIONAL DREAM

7. EPILOGUE:
TEN YEARS LATER

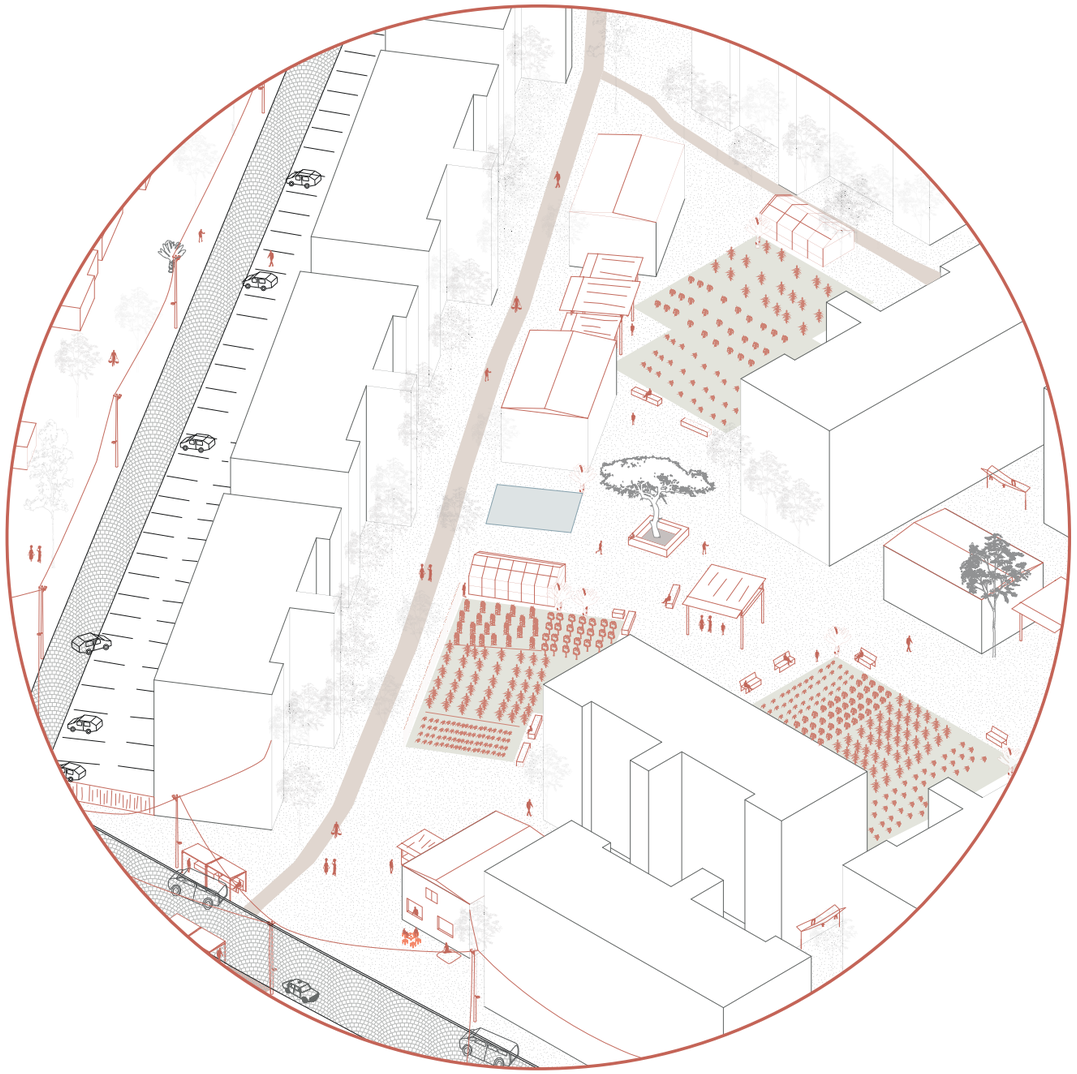
7. TRAJECTORIES...AFTER



7. TEN YEARS LATER: HAILE AND BETTY'S IMPROVED LIFE



Haile



Betty