

Living on the Edges of a Border City

The case of Cúcuta and El Rodeo

Living on the Edges of a Border City

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1. Borders and Edges

2. What if Cucuta...?

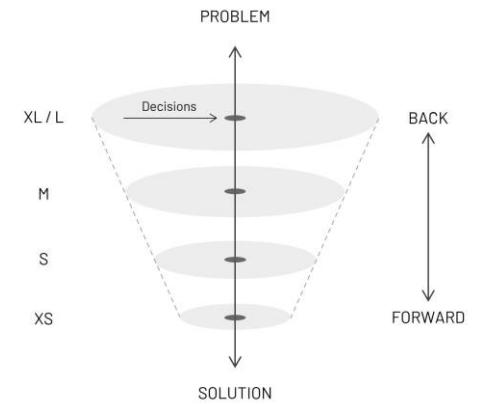
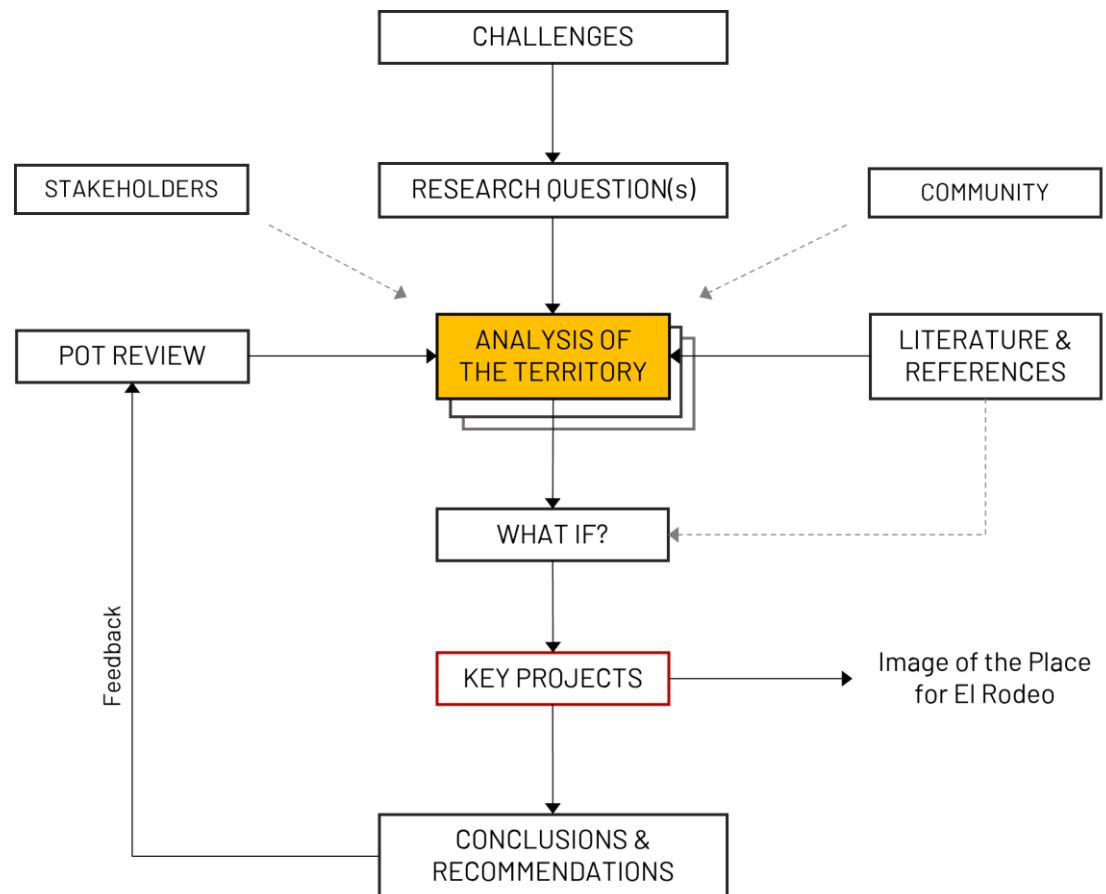
3. Application

Introduction video

Research Question

How to achieve an inclusive urban development in the edges
of a border city with rapid social and economic transformations?

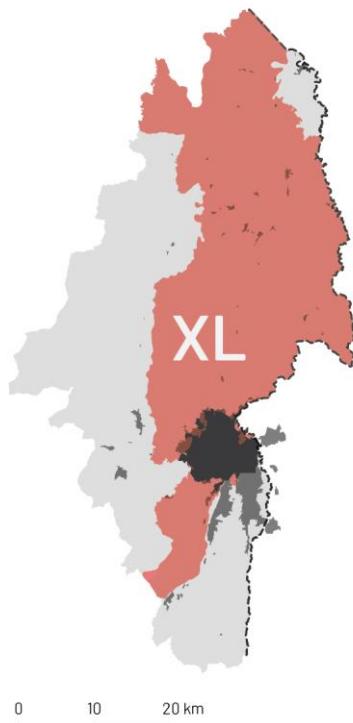
Methodology



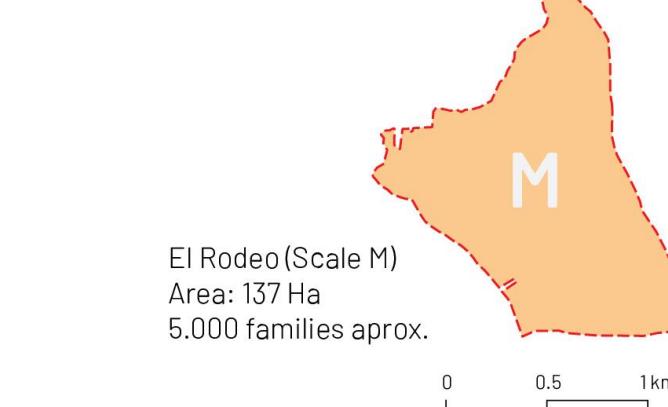
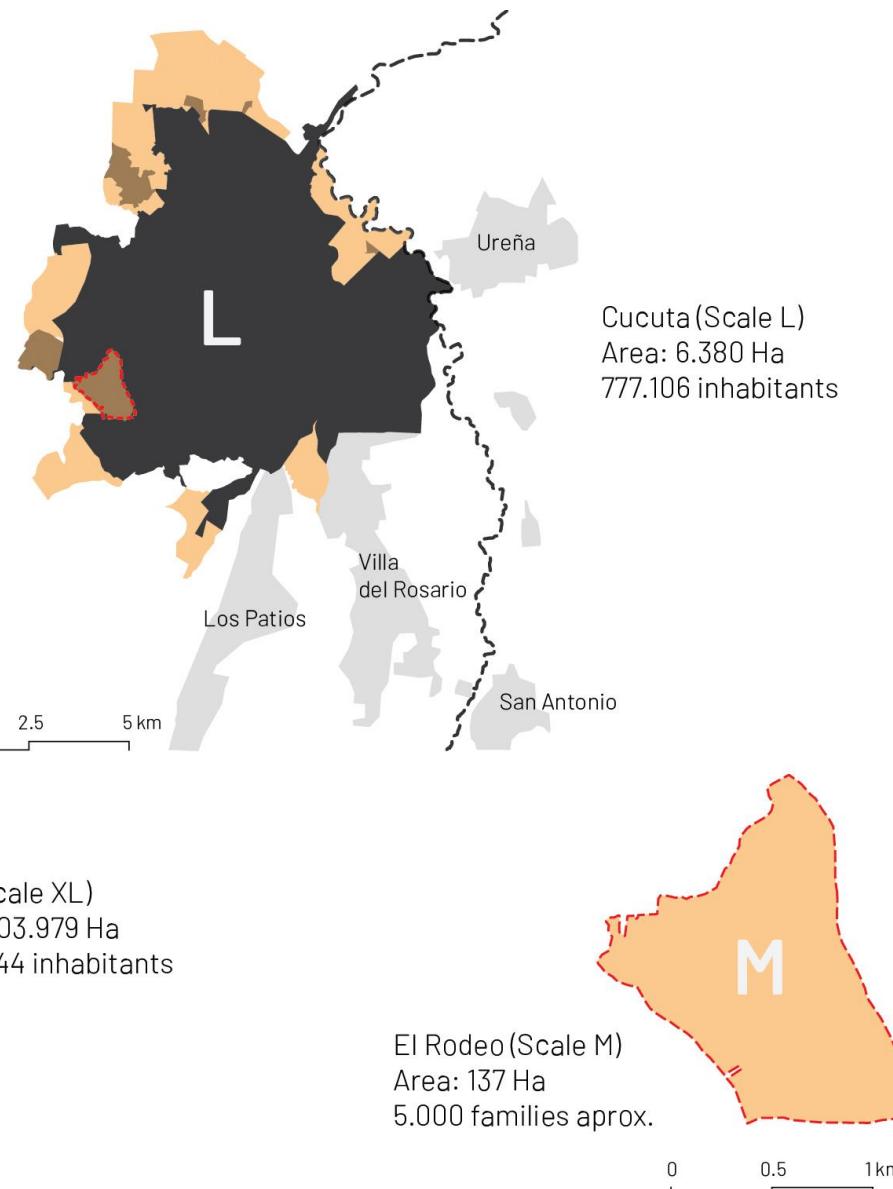
Process of abduction from the problem to the solution, passing through different scales and phases. Based on (Nijhuis, 2020), interpreted by the author.

Multi-scalar approach

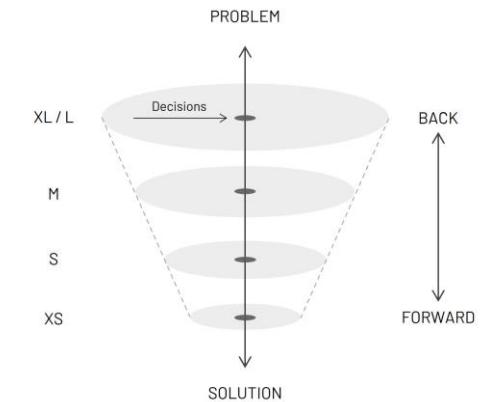
- National Border
- Light grey: Cucuta Metropolitan Area(AMC)
- Red: Municipality of Cucuta
- Black: Cucuta Urban perimeter
- Grey: Other urban areas
- Orange: Expansion areas Cucuta
- Dark Orange: El Rodeo



AMC (Scale XL)
Area: 203.979 Ha
1.034.044 inhabitants



Border and Edges



Process of abduction from the problem to the solution, passing through different scales and phases. Based on (Nijhuis, 2020), interpreted by the author.

Segregation at different scales

Border = National level

Edges = Local level

Border

'And while it is isolated by the topography of the rest of the Republic, the Zulia River that runs to the edge of its lands, puts Cucuta in immediate and very easy communication with Maracaibo [Venezuela].'

Vicente Herrera, Governor of Norte de Santander, 1858



Location of Cucuta, Colombia. Source: Esri.

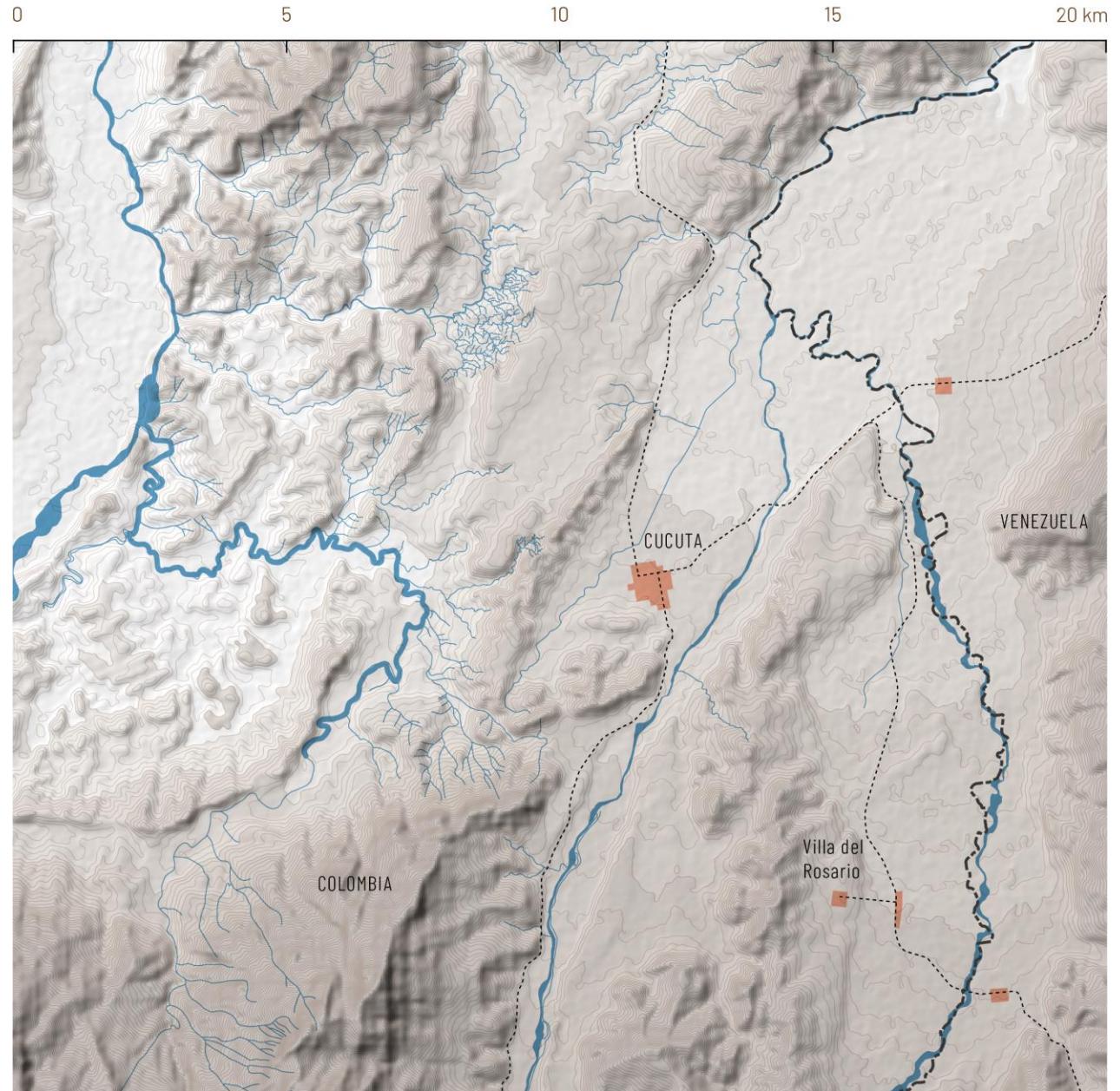
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Landscape and Border

Rivers as opportunity and not as a barrier.



Map: The territory of Cucuta by mid XIX century
Source: Developed by the author with DEM from USGS and layers from POT Cucuta and historic maps Chamber of Commerce Cucuta.



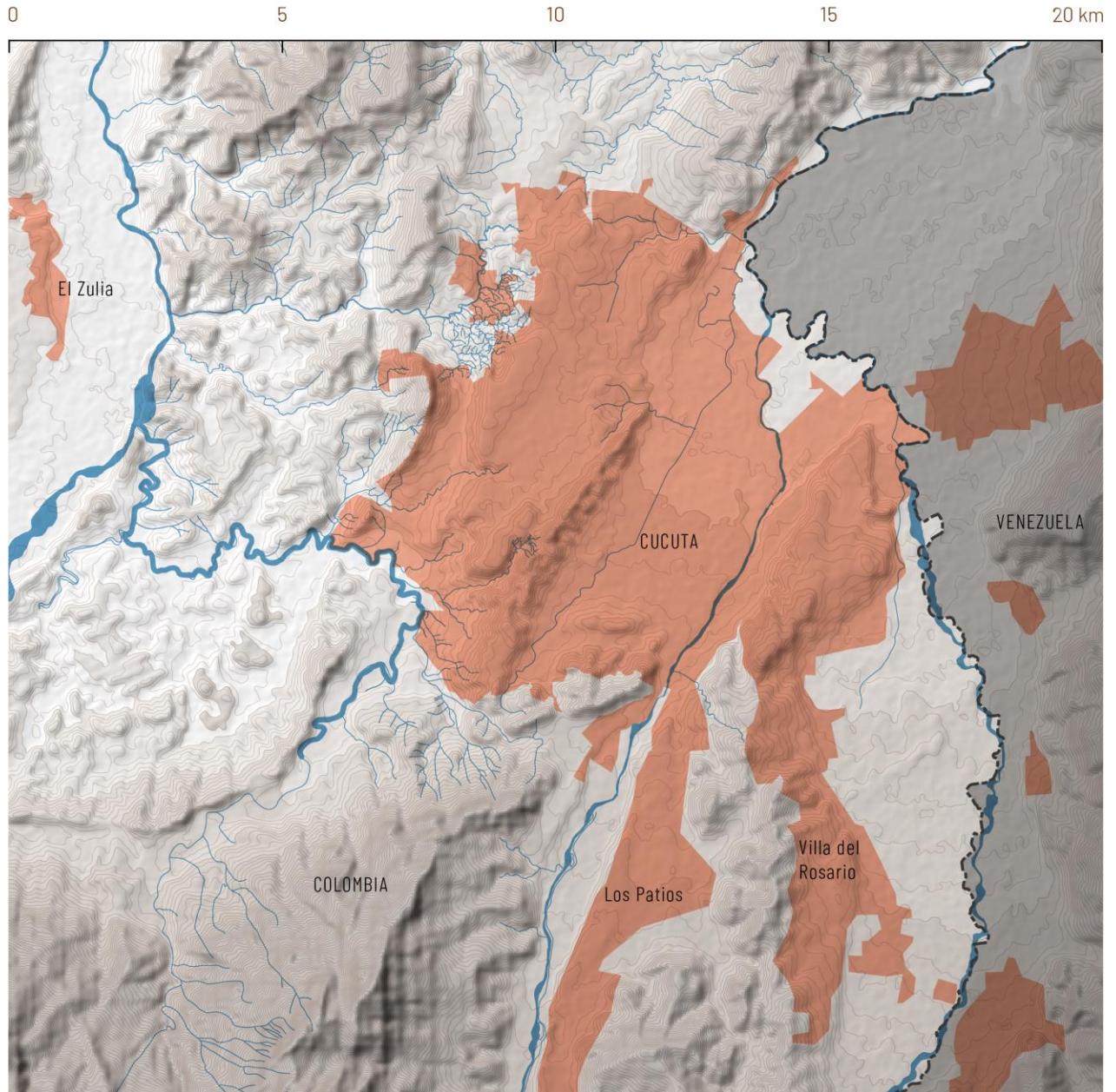
Border

Cucuta and the permeability of the border



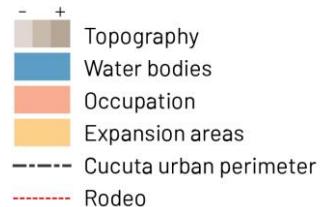
Map: The territory of Cucuta in 2020

Source: Developed by the author with DEM from USGS and layers from POT Cucuta.



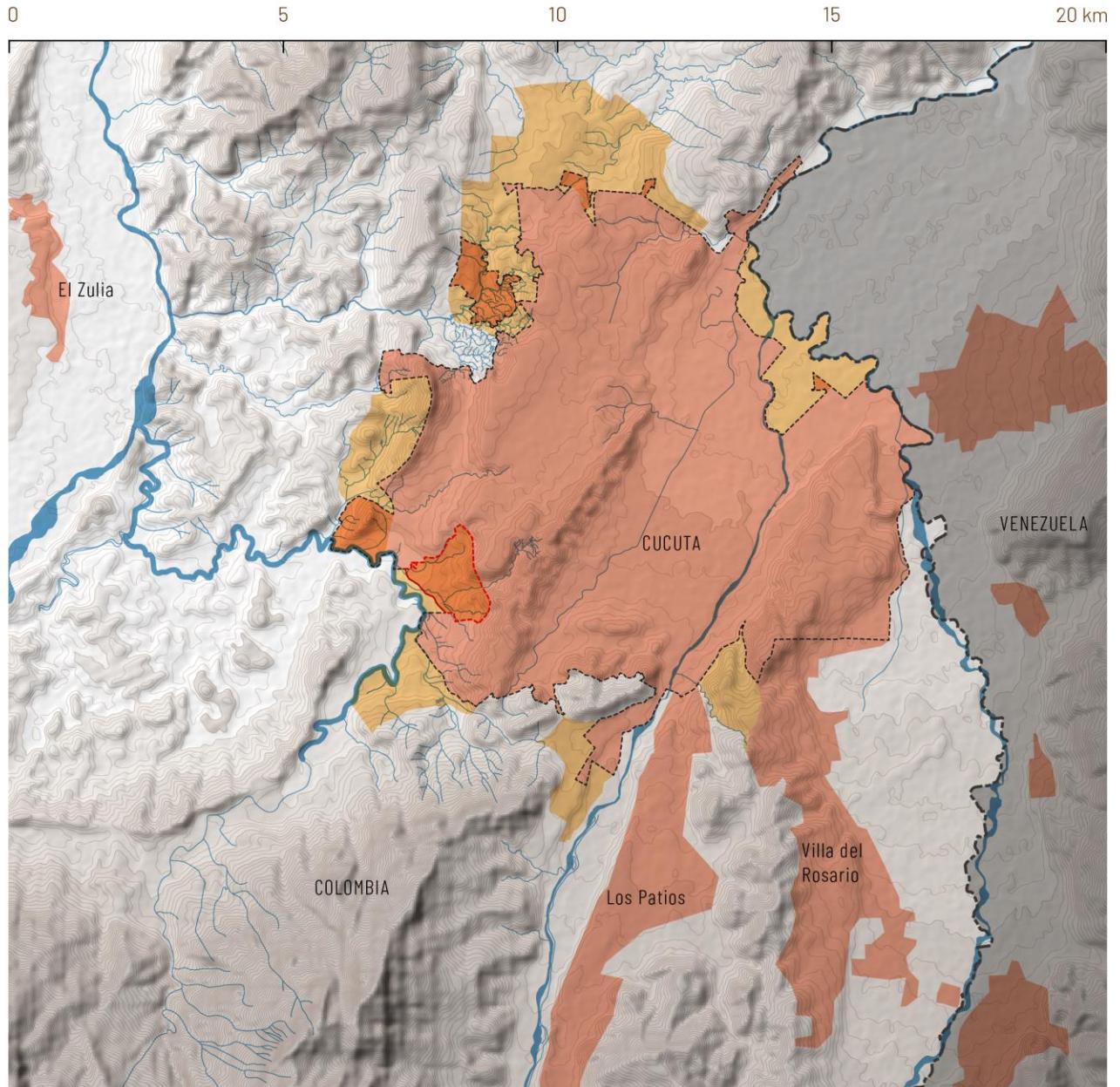
Edges

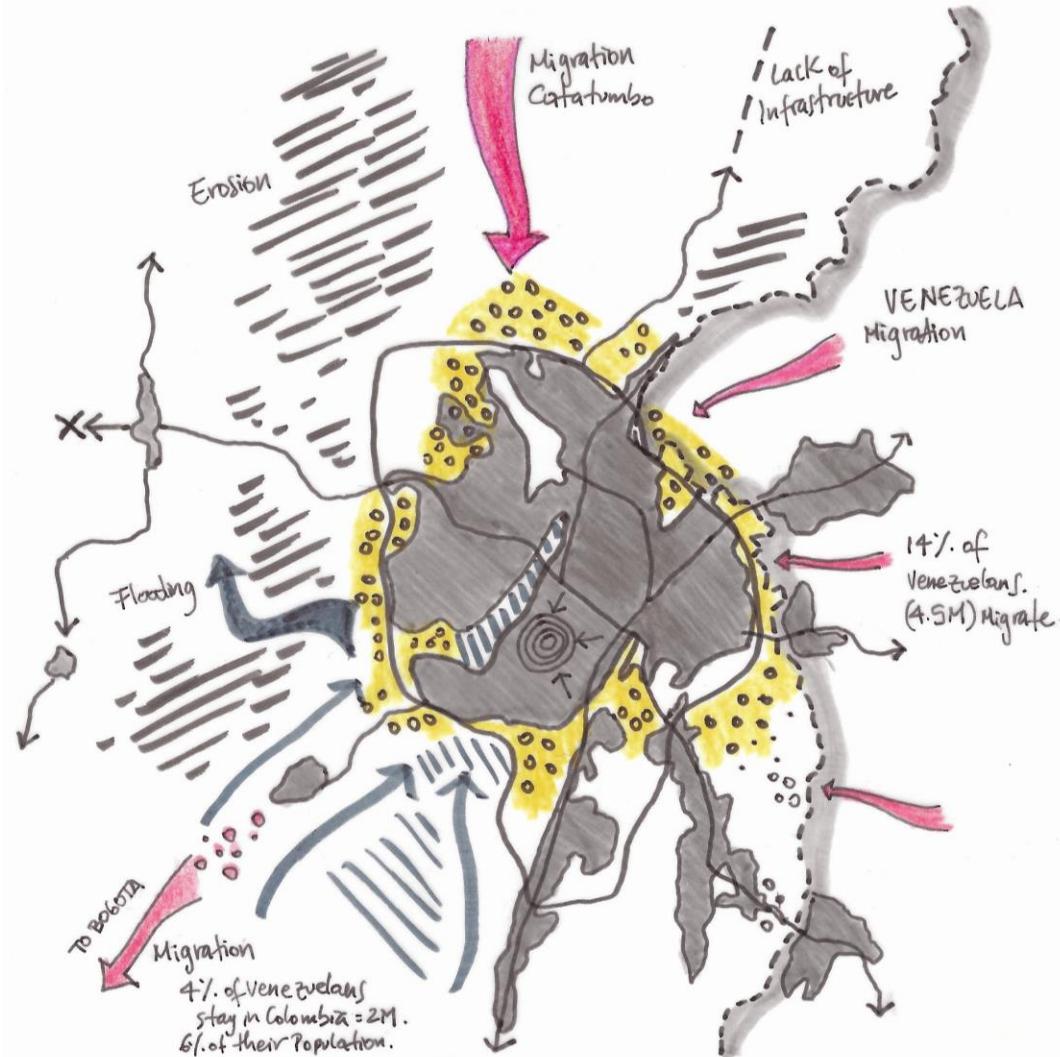
- Expansion areas
- Informal settlements



Map: Cucuta and its edges

Source: Developed by the author with DEM from USGS and layers from POT Cucuta.





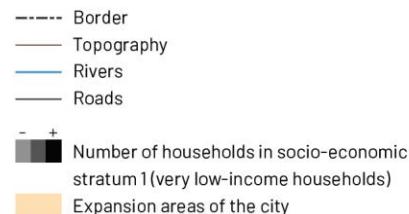
Conclusion map. Developed by the author.

Border and Edges

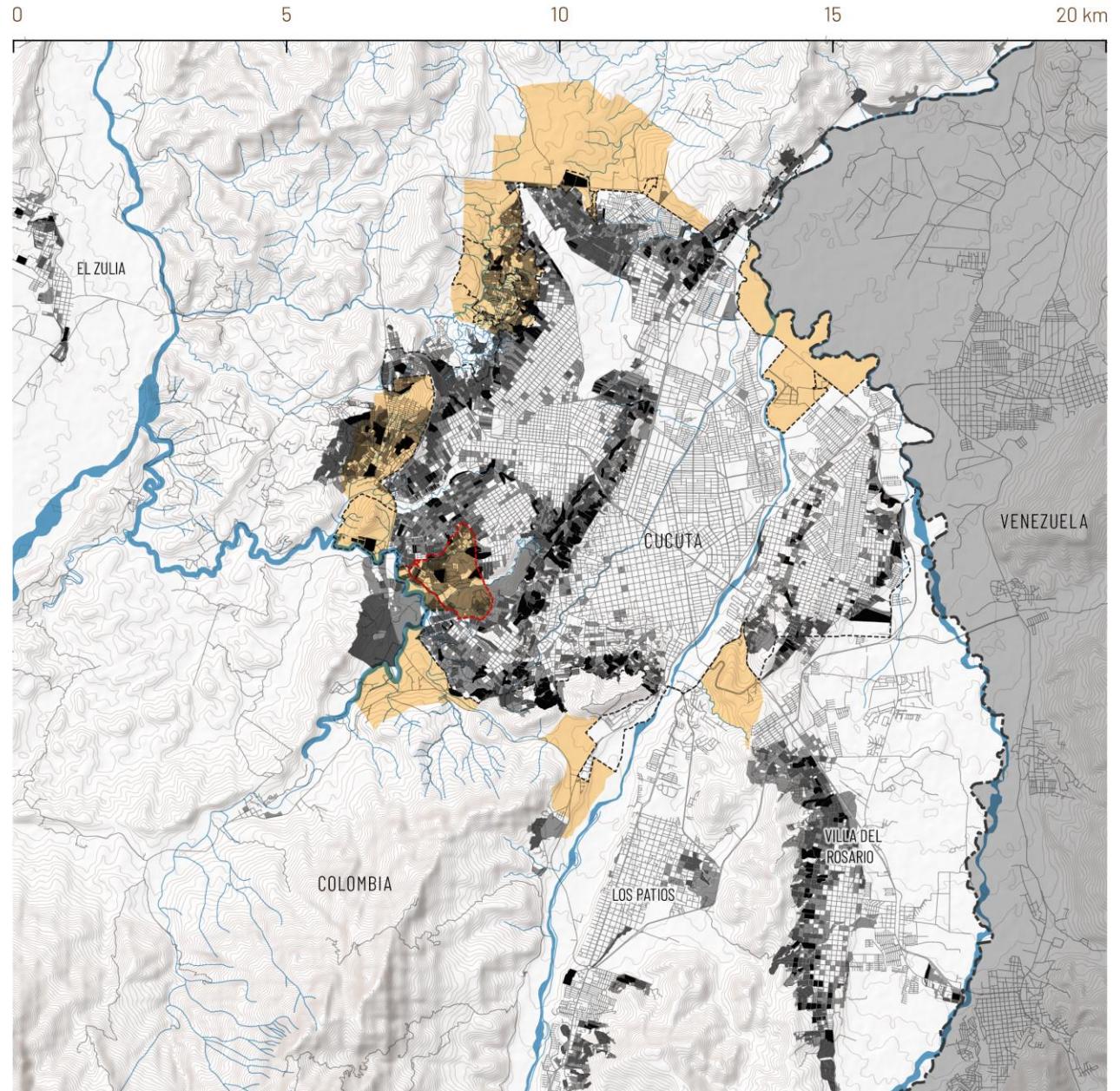
Edges

Low-income communities are located in:

- Expansion areas
- Steep slopes



Map of low-income households + Edges. Developed by the author.
Source layers: DANE, OSM, USGS, POT Cucuta , IGAC.

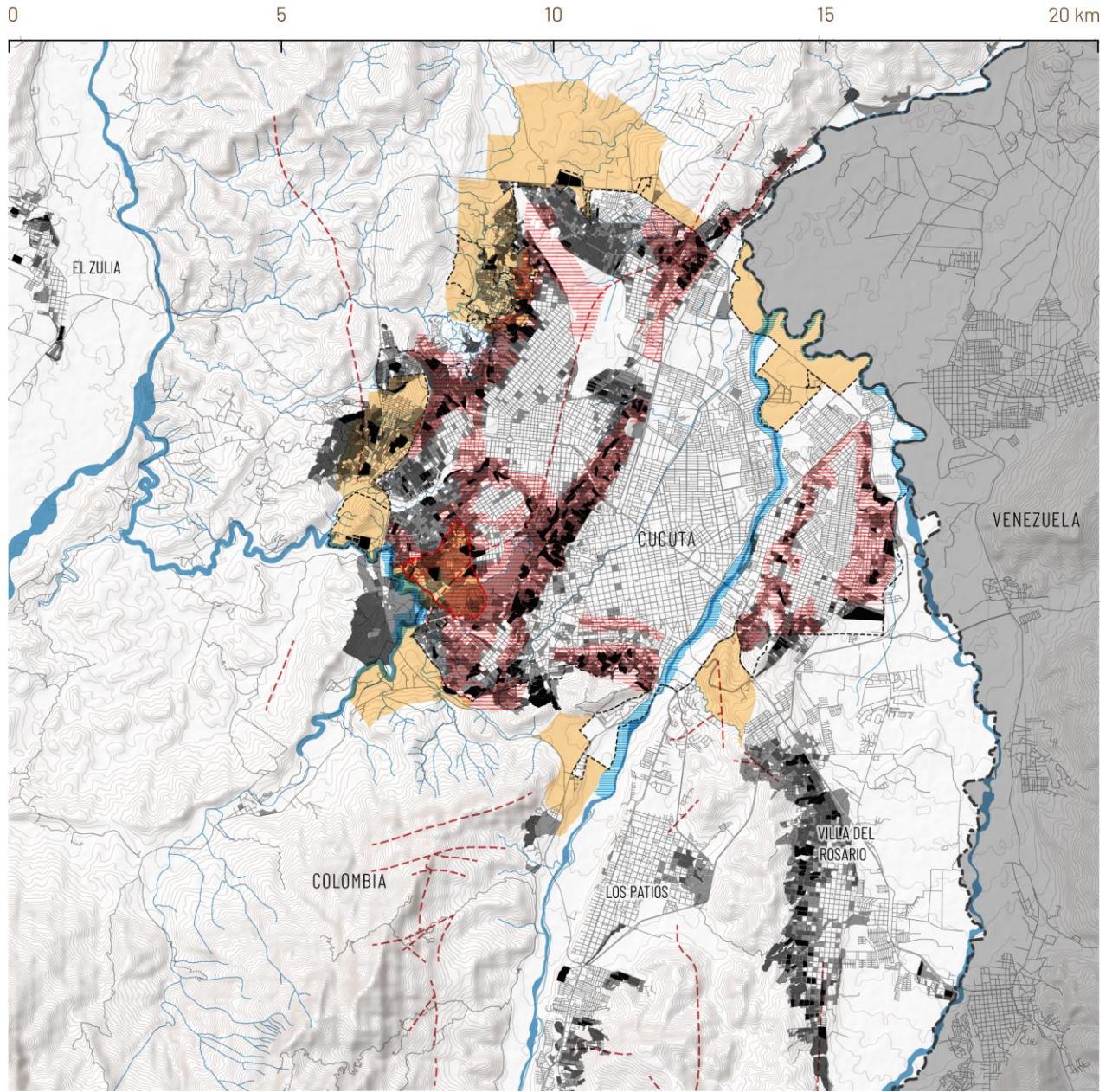


Occupation of high-risk areas

Correlation between low-income communities and risk

- Border
- Topography
- Rivers
- Roads
- + Number of households in socio-economic stratum 1 (very low-income households)
- Expansion areas of the city
- - Geological Faults
- Landslide risk
- Flood risk

Map of risks and low-income households in Cucuta.
Developed by the author. Source layers: DANE, OSM, USGS, POT Cucuta, IGAC.

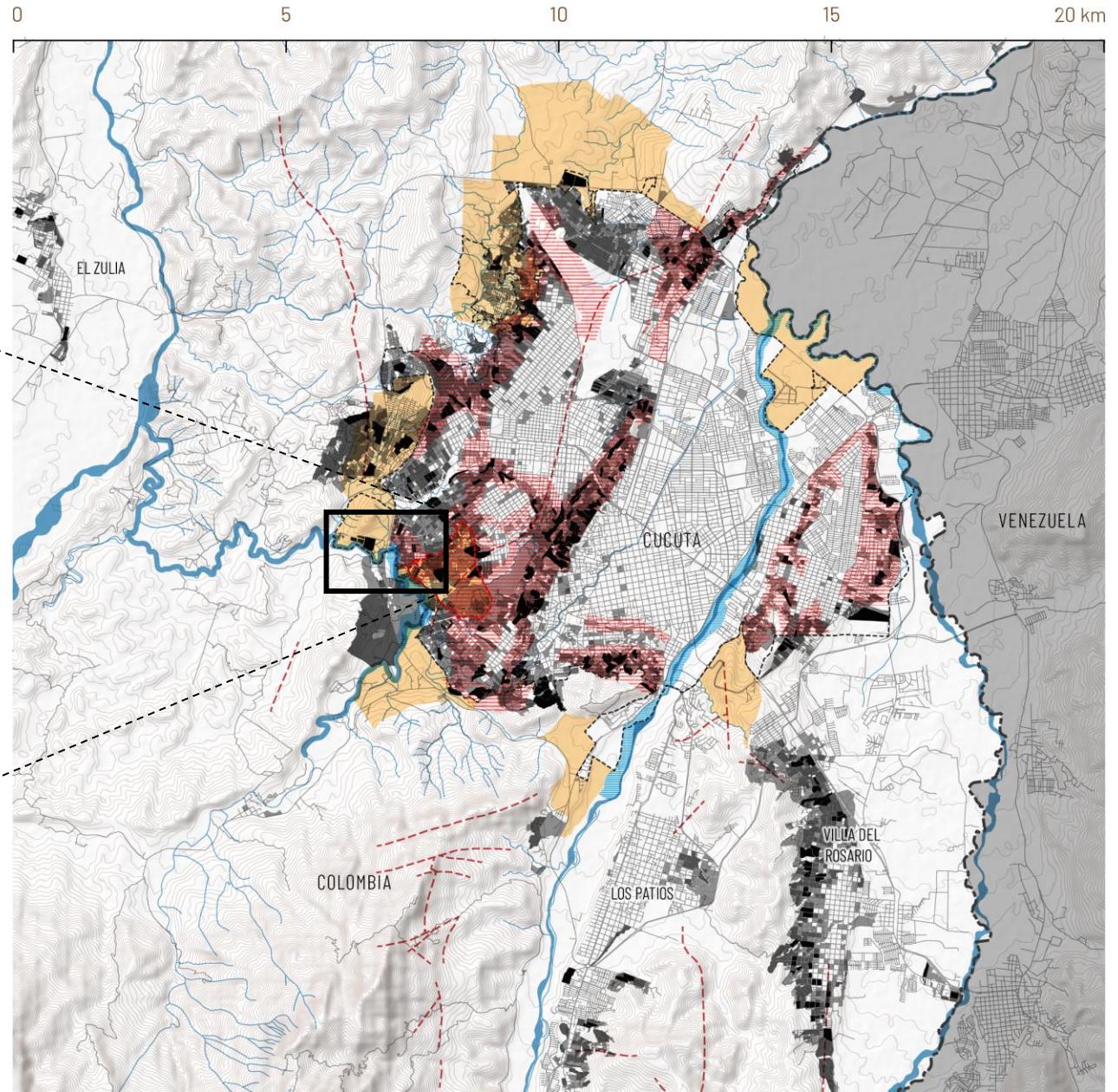


Occupation of high-risk areas



Photo: Google Earth

Map of risks and low-income households in Cucuta.
Developed by the author. Source layers: DANE, OSM, USGS, POT Cucuta , IGAC.



Occupation of high-risk areas



Affects FORMAL and INFORMAL dwellings

- + Access to Transport
- + Public services
- + Education
- + Spaces for recreation



Photos: (Left) Google Earth, (right) F. Bernal.

POT

'The biggest challenge in Cúcuta is planning. There is a POT without a comprehensive nor a structured vision of the city that allows to say: this is the way! This is the future that we dream of.'

Miguel Peñaranda, 2020.

Director of the Metropolitan Area of Cucuta (AMC)



View of Cúcuta. Photo: F. Bernal.

EL RODEO

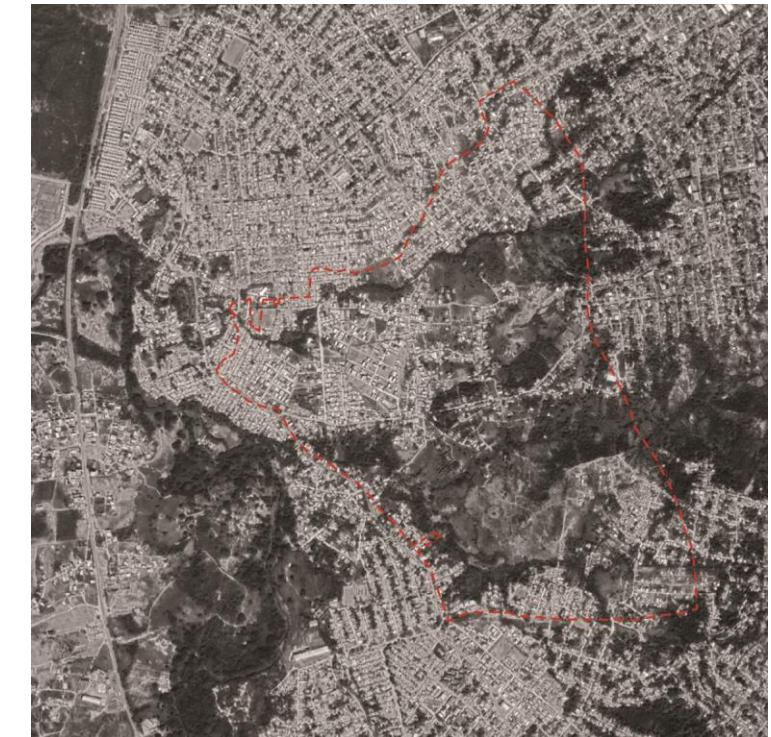
Evolution of the territory



2003



2010



2020

Valley = Edge

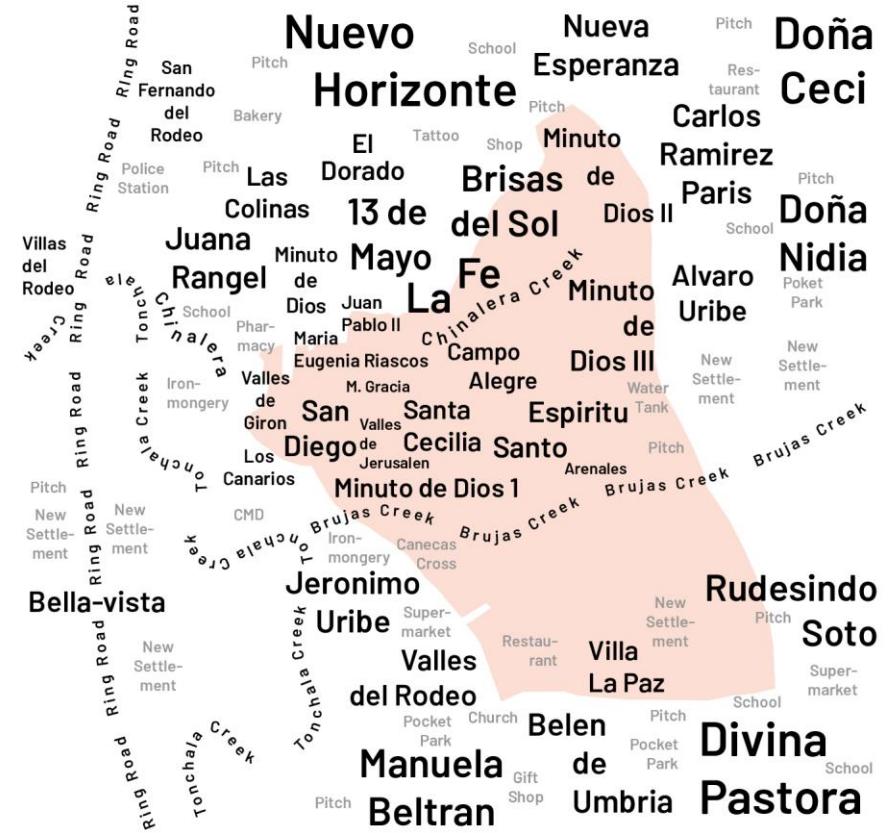


3D model of El Rodeo

Constellation of communities



Limits between settlements



How people call their land



Phase 1



Phase 2



Phase 3

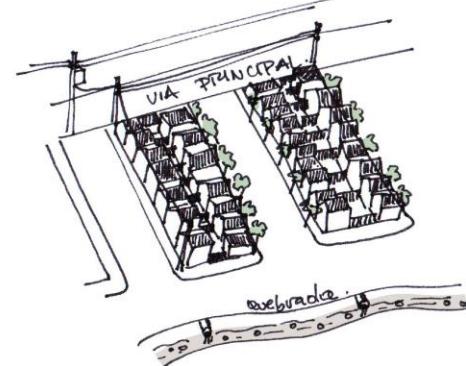
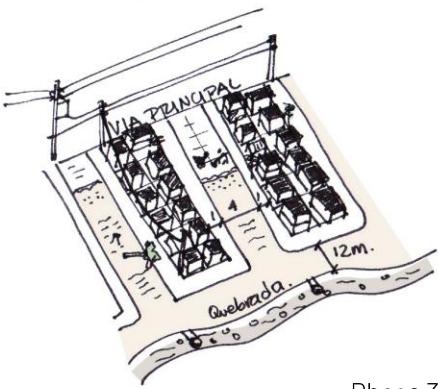
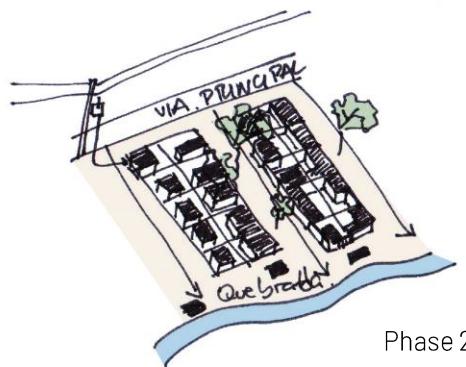
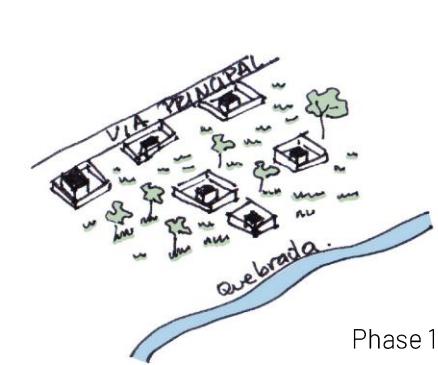


Phase 4

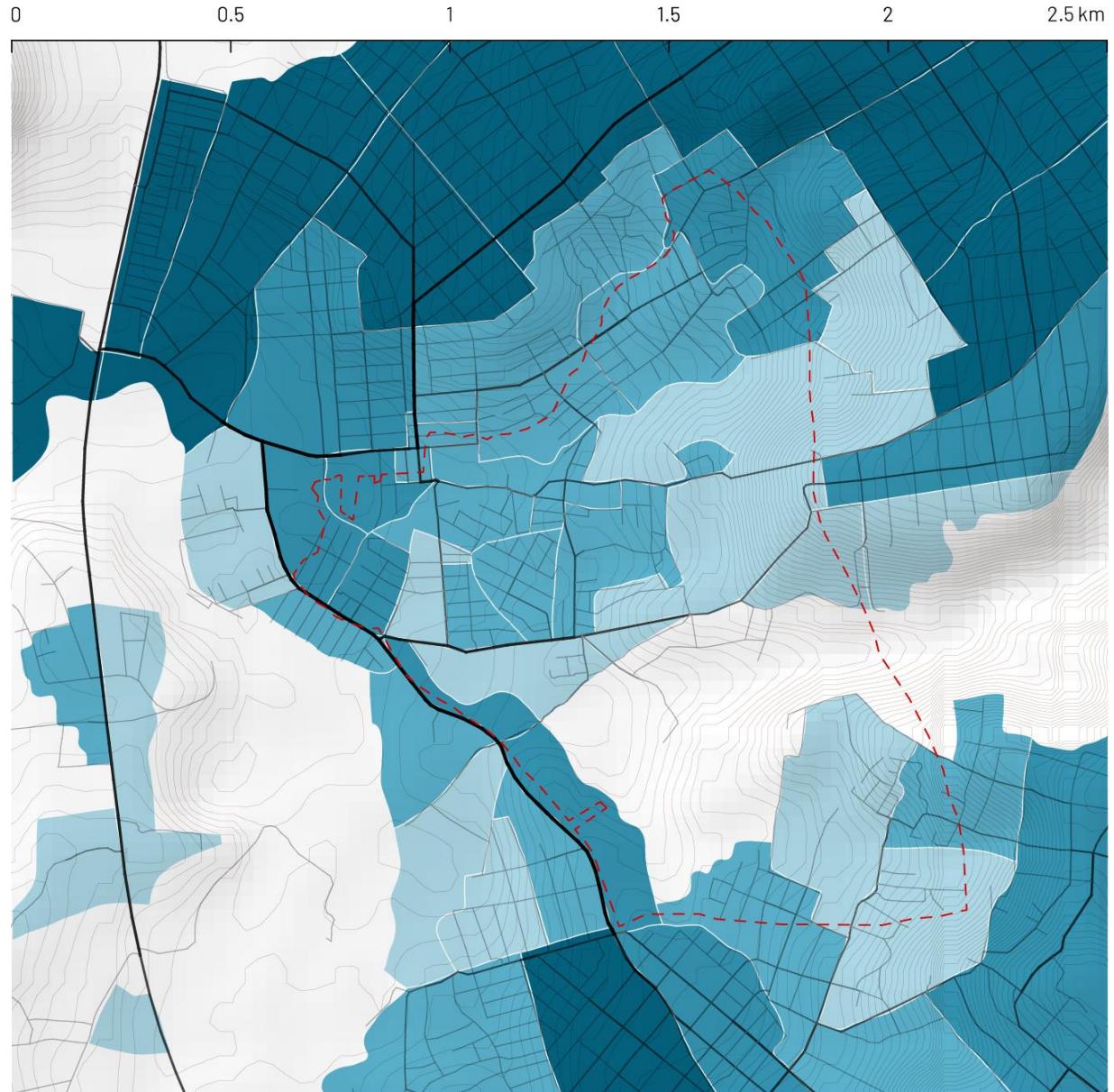
Source: Google street view and F. Bernal.

Border and Edges

Phases of development



- Phase 1
- Phase 2
- Phase 3
- Phase 4





'They told us that there couldn't be Venezuelans in the neighbourhood, because that was detrimental to the legalization process of our settlement'

Elizabeth, inhabitant of Los Canarios, El Rodeo, 2020.





Workshops



El Rodeo takeaways

- Low confidence in public institutions
- Environmental risk vs. Legalisation?
- Cooperation with civic organizations
- Many actors in decision-making
- Need of a common identity
- Engage the community in public works



1. Borders and Edges

2. What if Cucuta...?

3. Application

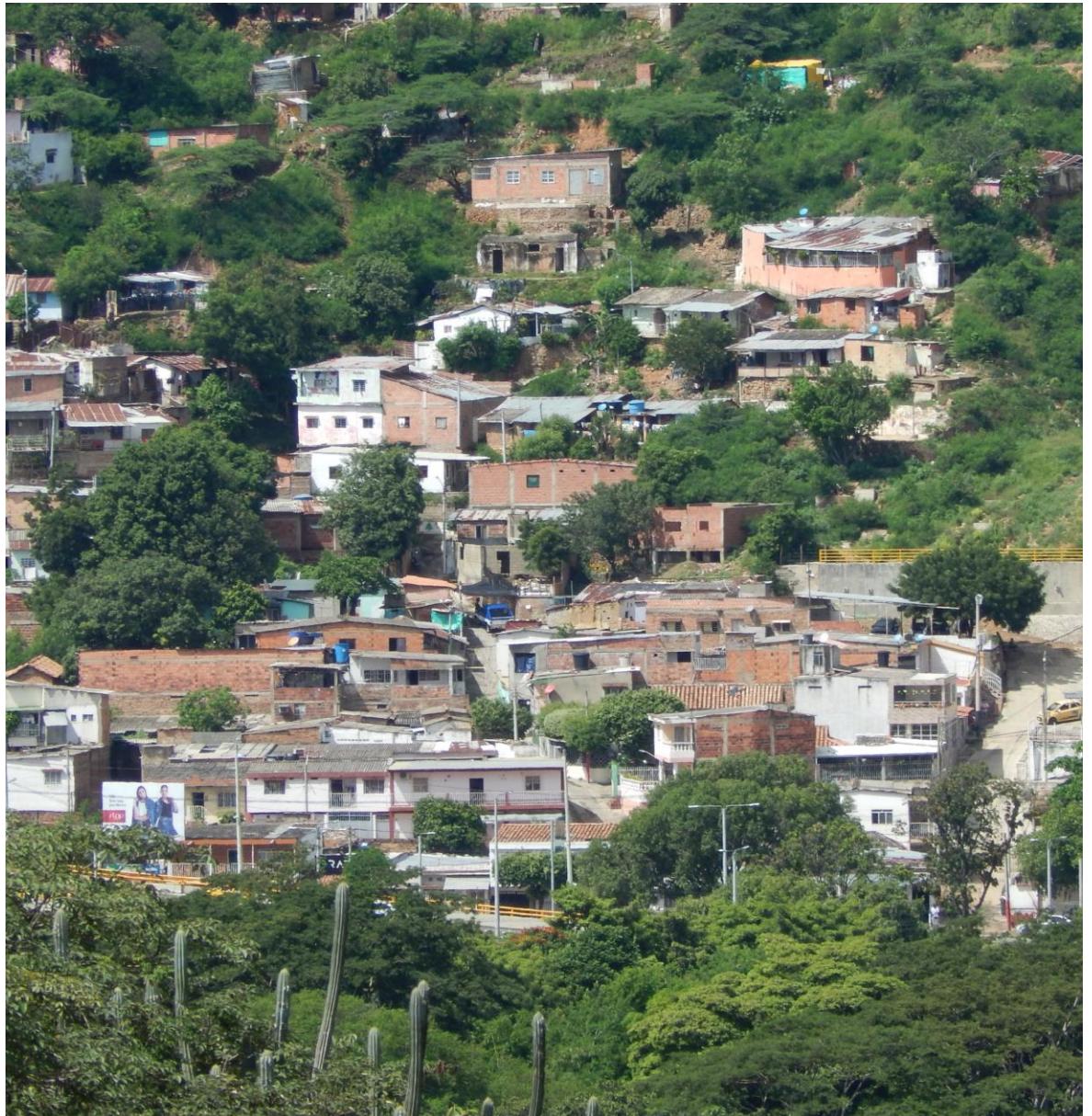
72% Informal economy

22.3% Unemployment

+ Migration flows from Catatumbo and Venezuela

What if Cucuta rethinks its edges as transitional territories in process of consolidation?

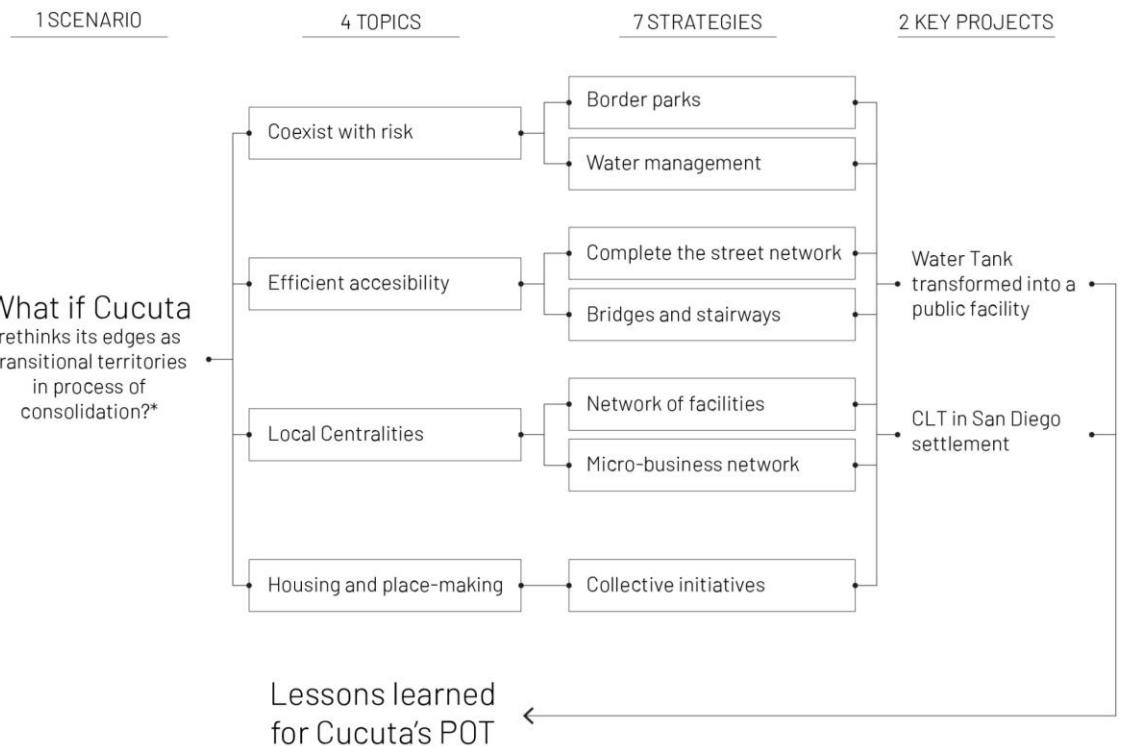
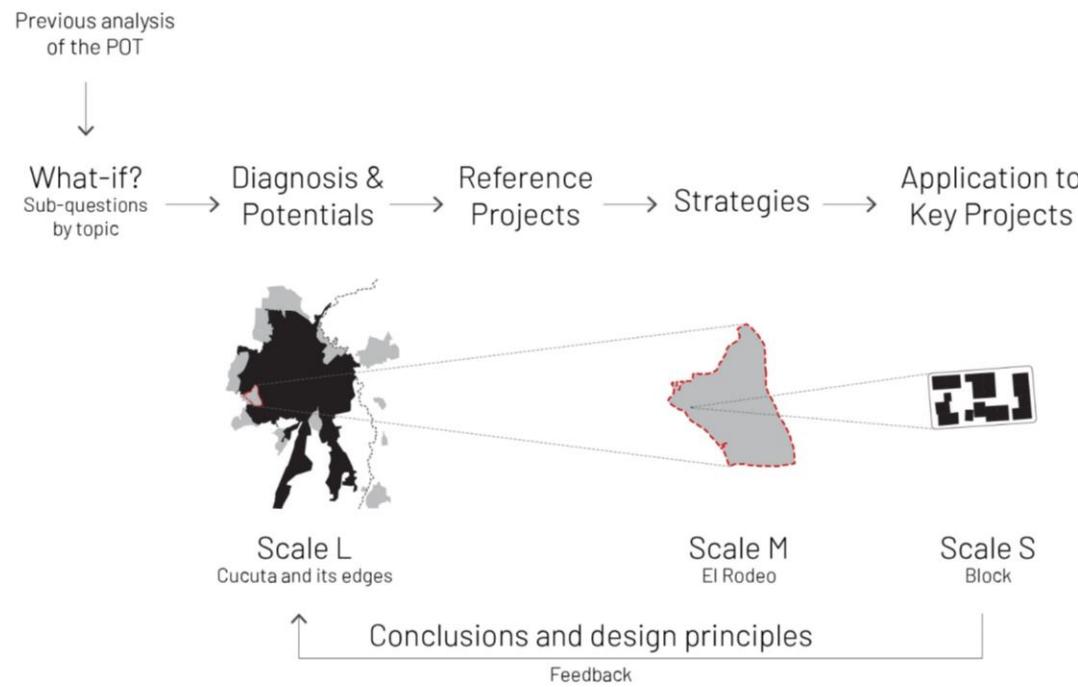
- Safe and spontaneous growth.
- Planning strategies for susceptible landscapes.



Topics

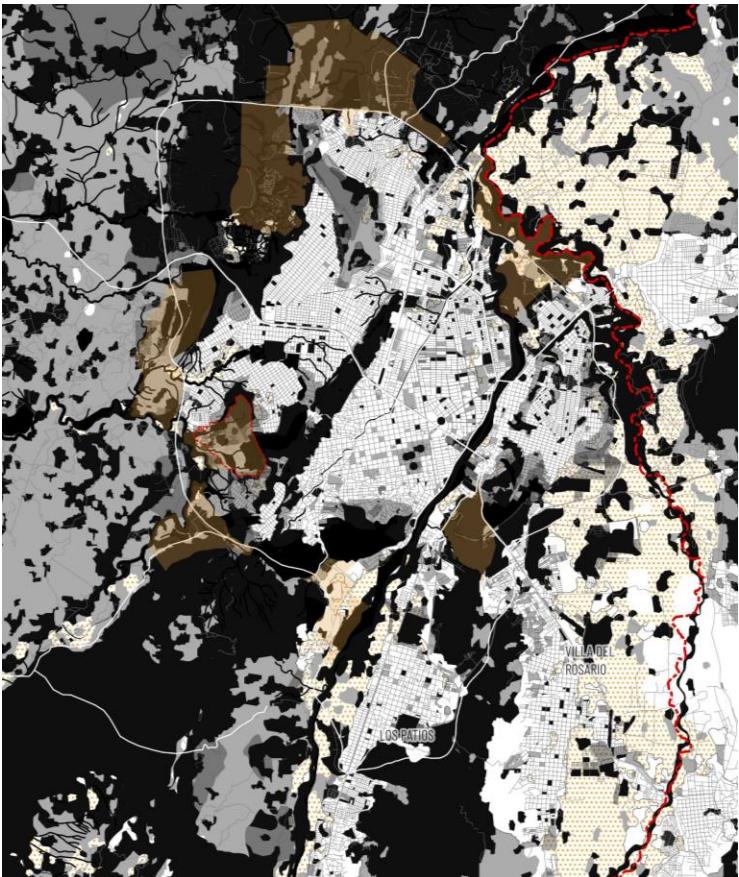


Research-by-design framework



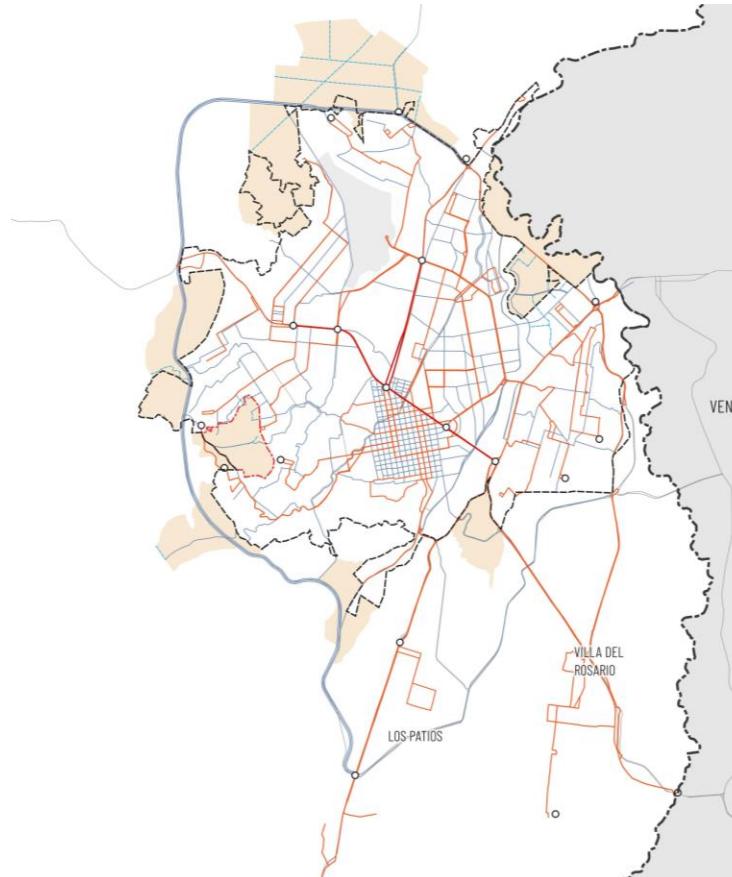
Diagnosis for scenarios

Coexist with risk?



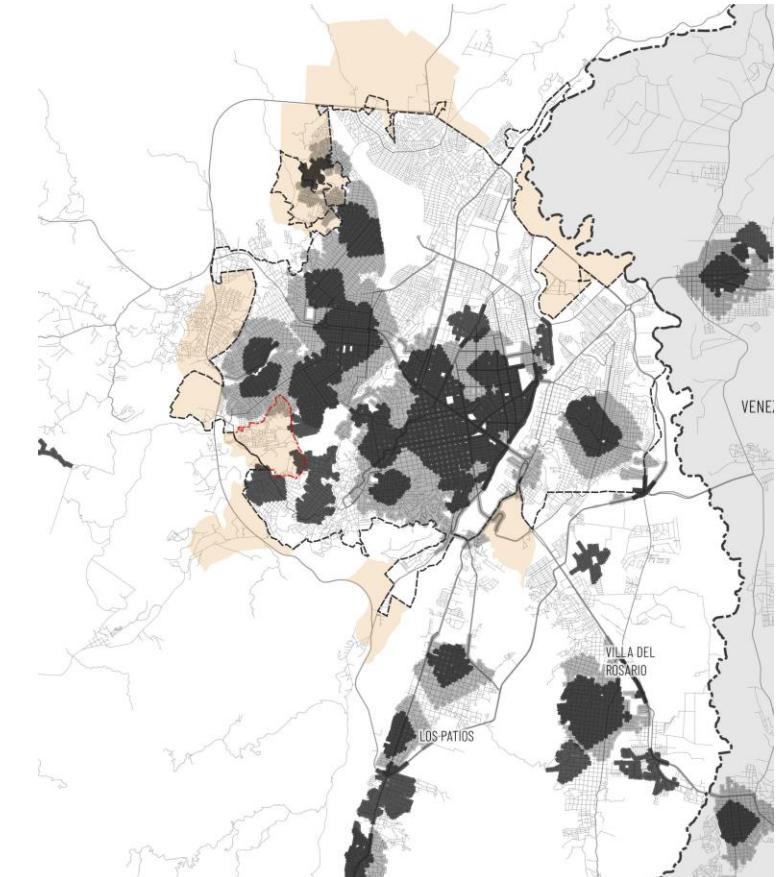
Preservation / Risk
Recover / Retrofit
Agriculture / opportunity
Urban areas / Densify

Efficient accessibility?



Stations
BRT
Transport SITM
Road Network

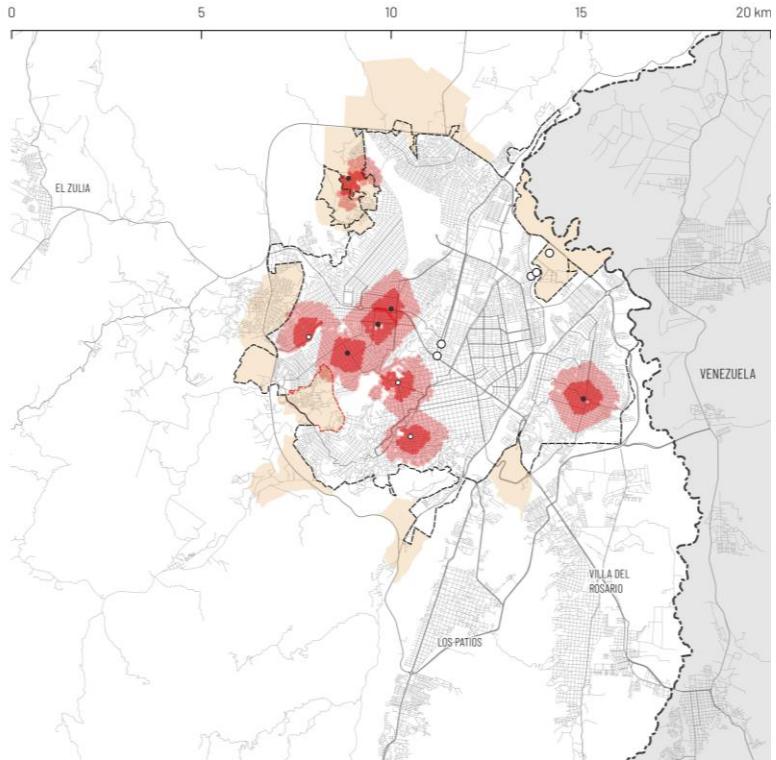
Network of local centralities?



Network Analysis
Service Area 500m_Culture & Recreation
Service Area 1000m_Culture & Recreation
Expansion areas 2011 - 2019

Corazón de Barrio

Heart of Neighbourhood – Reference project from the Municipality

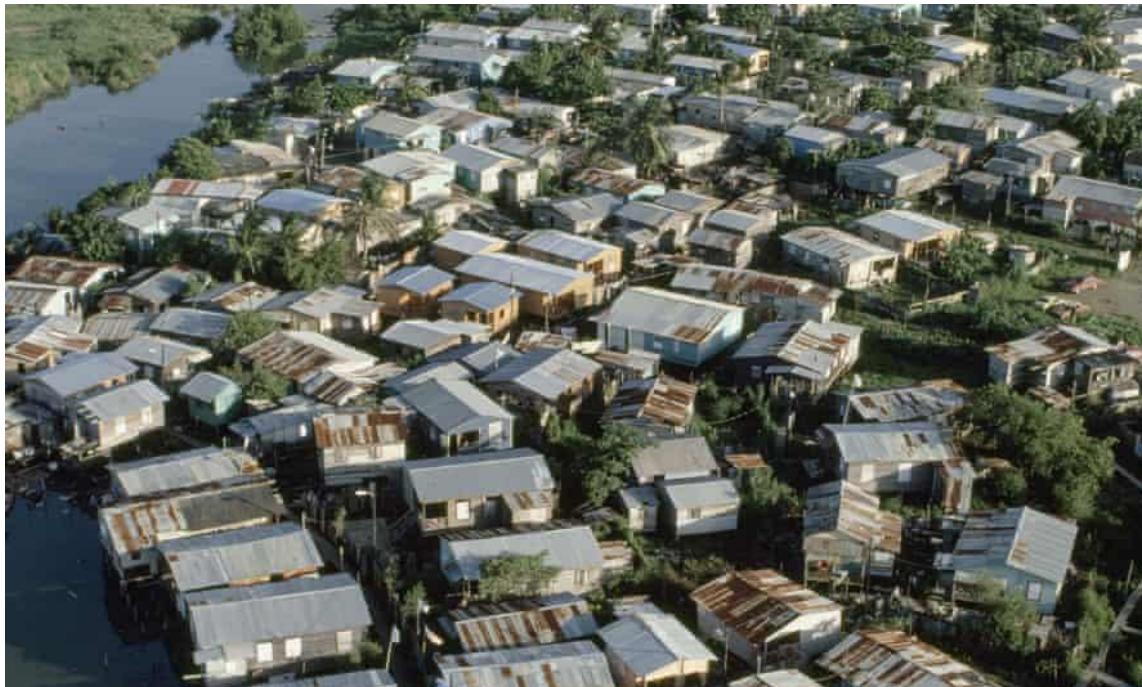


Map developed by the author with information provided by the AMC

What if Cúcuta?



Collaborative housing initiatives



1. CLT in Puerto Rico. Caño Martin Peña



2. Housing Cooperatives in Uruguay

Sources:

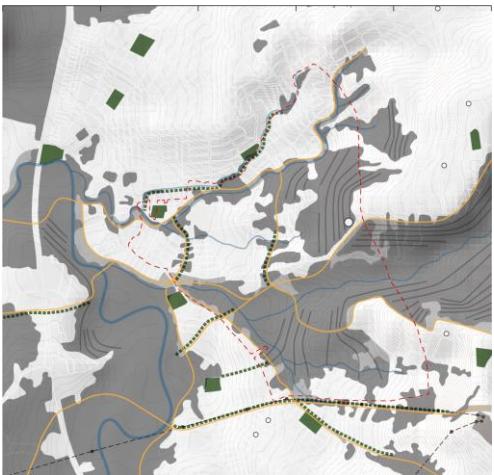
1. The guardian. Photo by Stephanie Maze.
2. World-habitat.org



The Motilon-Bari tribe from Catatumbo region, claiming for the limits of their territory (May 2021).

Strategies for El Rodeo

RISK



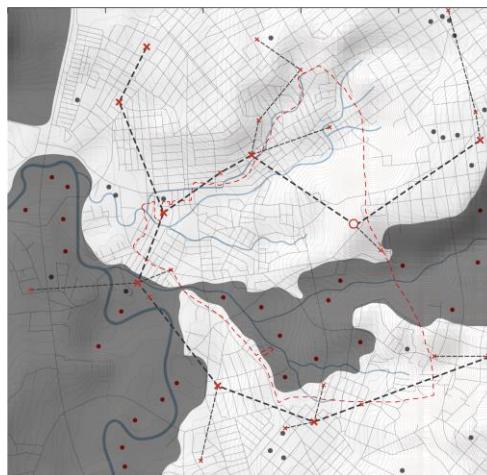
Border Parks

ACCESSIBILITY



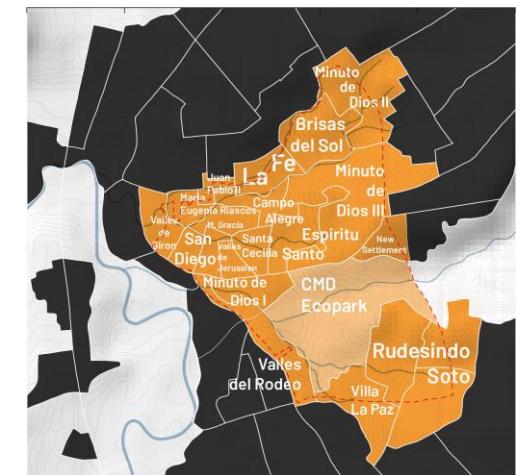
Complete the street network

CENTRALITIES

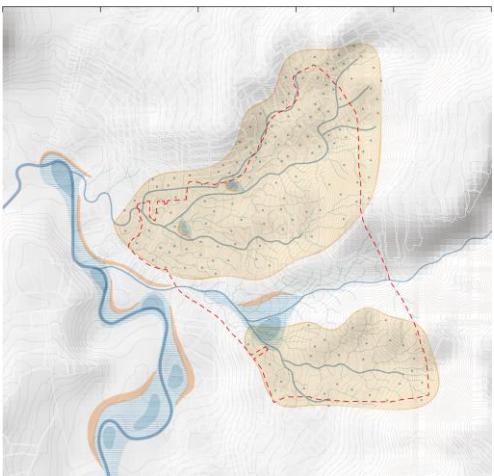


Retrofit existing facilities

HOUSING



Collective initiatives



Water Management



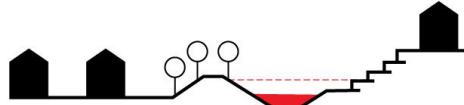
Bridges and stairways



Underpin the micro-business network

Strategies for El Rodeo

RISK



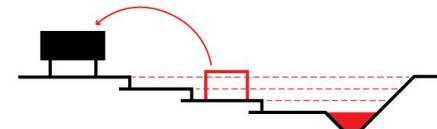
Dikes and terraces

ACCESSIBILITY



Local and global integration

CENTRALITIES



Temporary facilities



SUDs



New connections



micro-business network

Strategies for El Rodeo

- - - El Rodeo
- Street network
- Water bodies
- Flooding areas
- Retention ponds
- Green Areas
- Dikes
- Parks
- Green corridors
- Terraces
- Facilities
- Temporary facilities
- ✗ Pitches
- Pedestrian paths
- Bridges
- Stairways
- Linear centralities
- Point centralities
- Key Projects



1. Borders and Edges

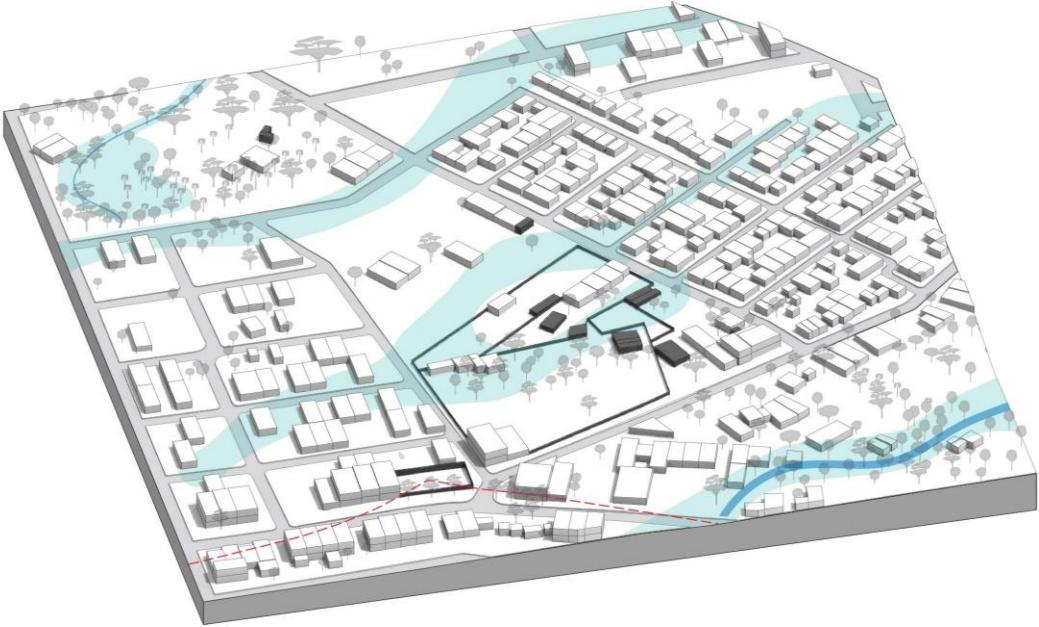
2. What if Cucuta...?

3. Application

CLT in San Diego Settlement



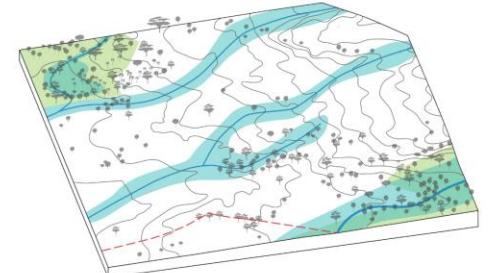
Location



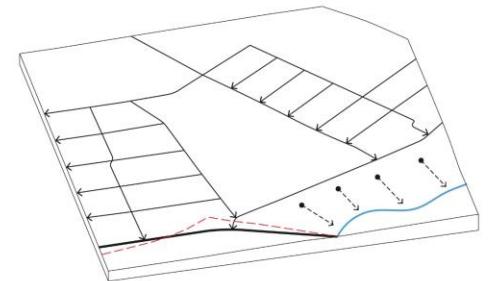
Density of the surrounding blocks:
75 - 88 dwellings / Hectare

Context	•---> Wastewater discharges
Temporary elements	- - - El Rodeo limit
Flooding areas	— Water bodies
Green areas	● Trees
Commerce	
Facilities	
Main streets	
Secondary streets	

Application



Landscape

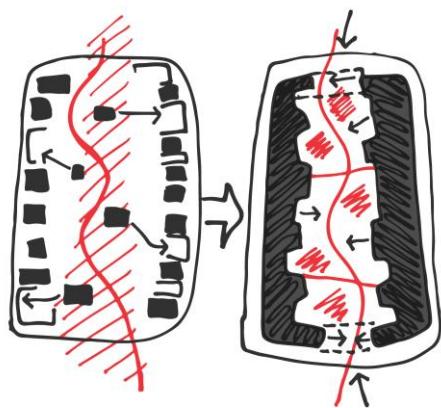


Infrastructure

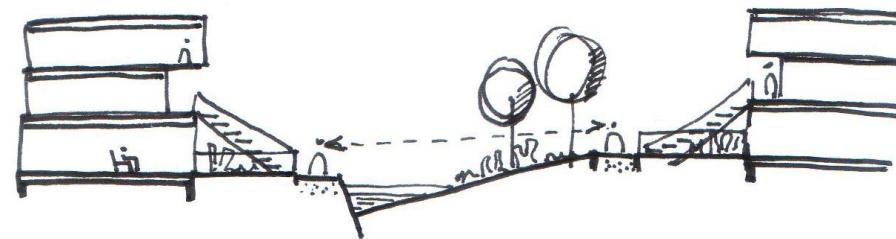


Occupation

CLT in San Diego Settlement



Densify on the edges of the block



And create a second front at the centre of the block

CLT in San Diego Settlement

CLT – Model in Puerto Rico

Collective Land + Private Housing



Density: 70 dwellings / Ha

OSR: 1.28

Active edges: 34%



Housing Coop – Model in Uruguay

Collective Land + Collective Housing



Density: 80 dwellings / Ha + retail shops

OSR: 0.78

Active edges: 42%

Mixed Model

Collective Land + Mixed tenure of housing

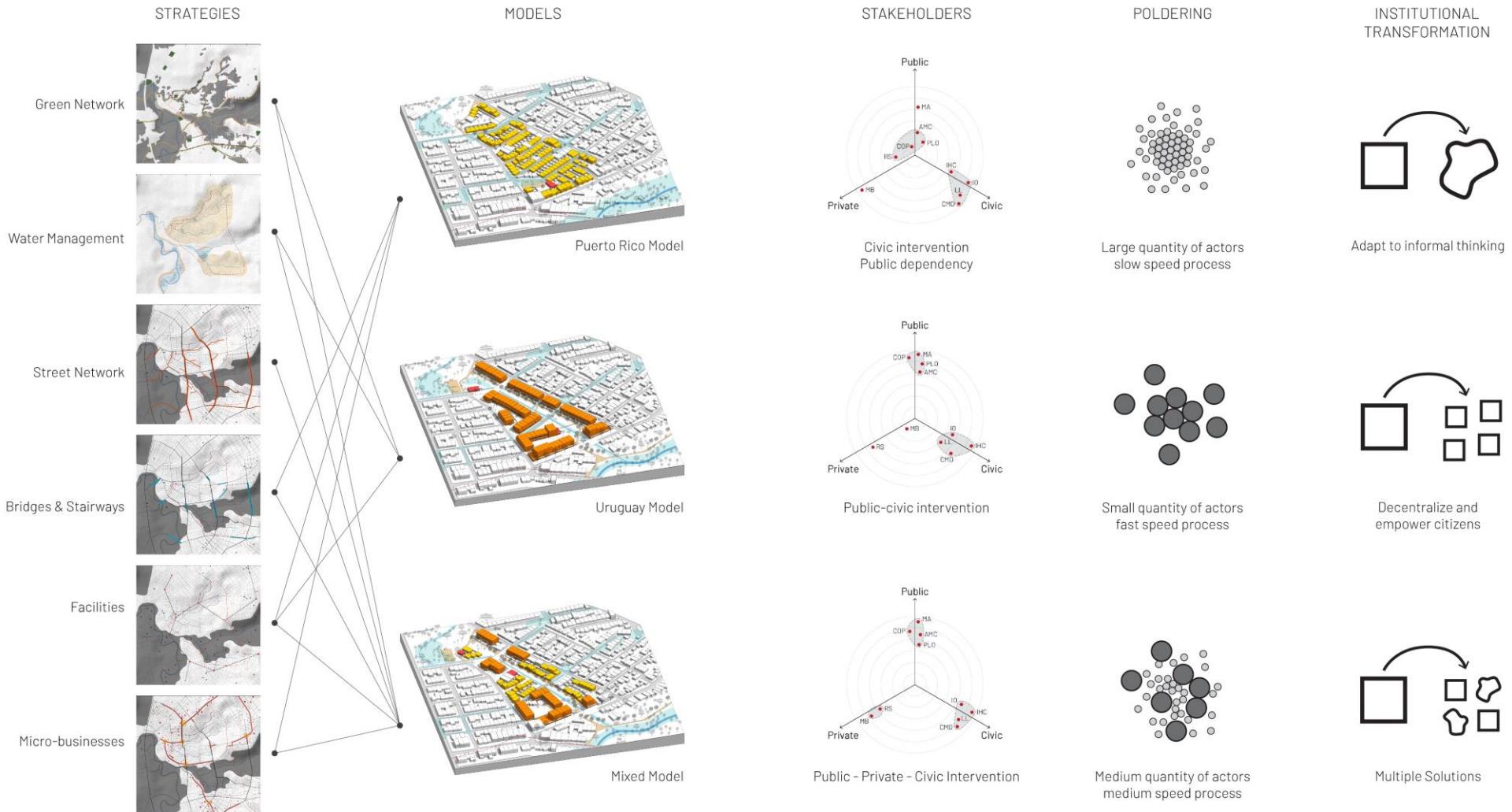


Density: 67 dwellings / Ha + retail shops

OSR: 0.87

Active edges: 40%

CLT in San Diego Settlement



Acronyms for the governance diagrams: AMC - Metropolitan Area of Cucuta / CMD - Minuto de Dios Corporation / COP - Copronor. Environmental Agency / IHC - International Housing Cooperatives / IO - International Organizations like GIZ and UNHCR / LL - Local Leaders / MA - Mayor of Cucuta / MB - Micro-businesses / PLO - Planning Office of Cucuta / RS - Retail Shops



Perspective of the linear park at San Diego's CLT (Mixed model).

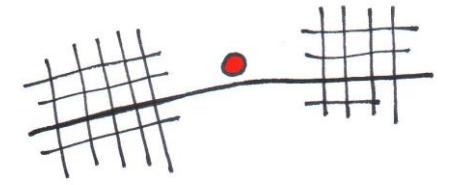


From water tank into local facility

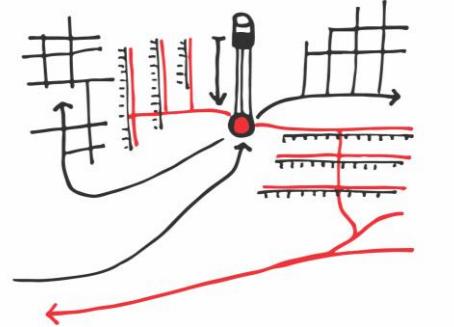
Current situation



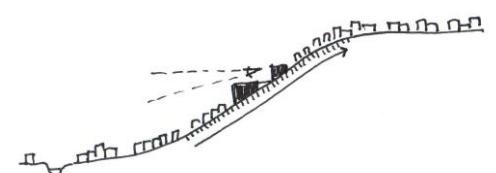
Application



Strategic location



Water management



Visual impact on the landscape

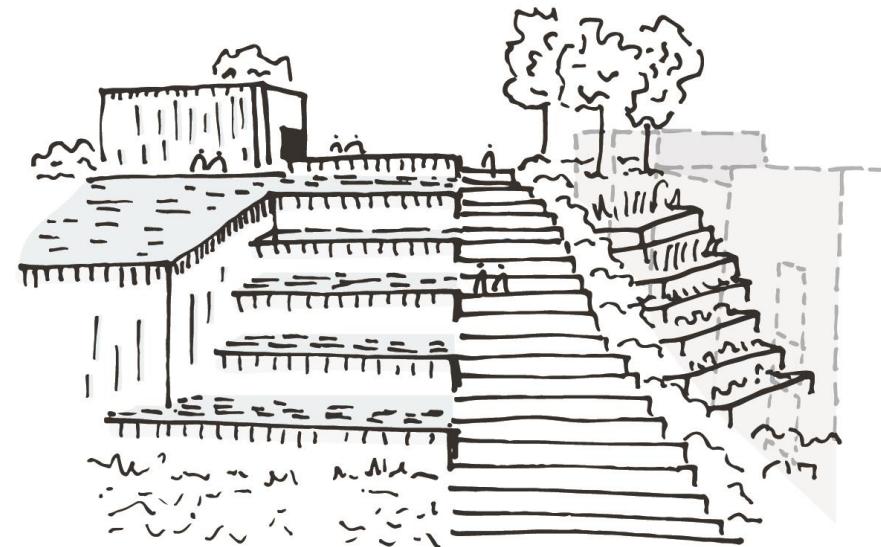
From water tank into local facility

Concept



Landscaping

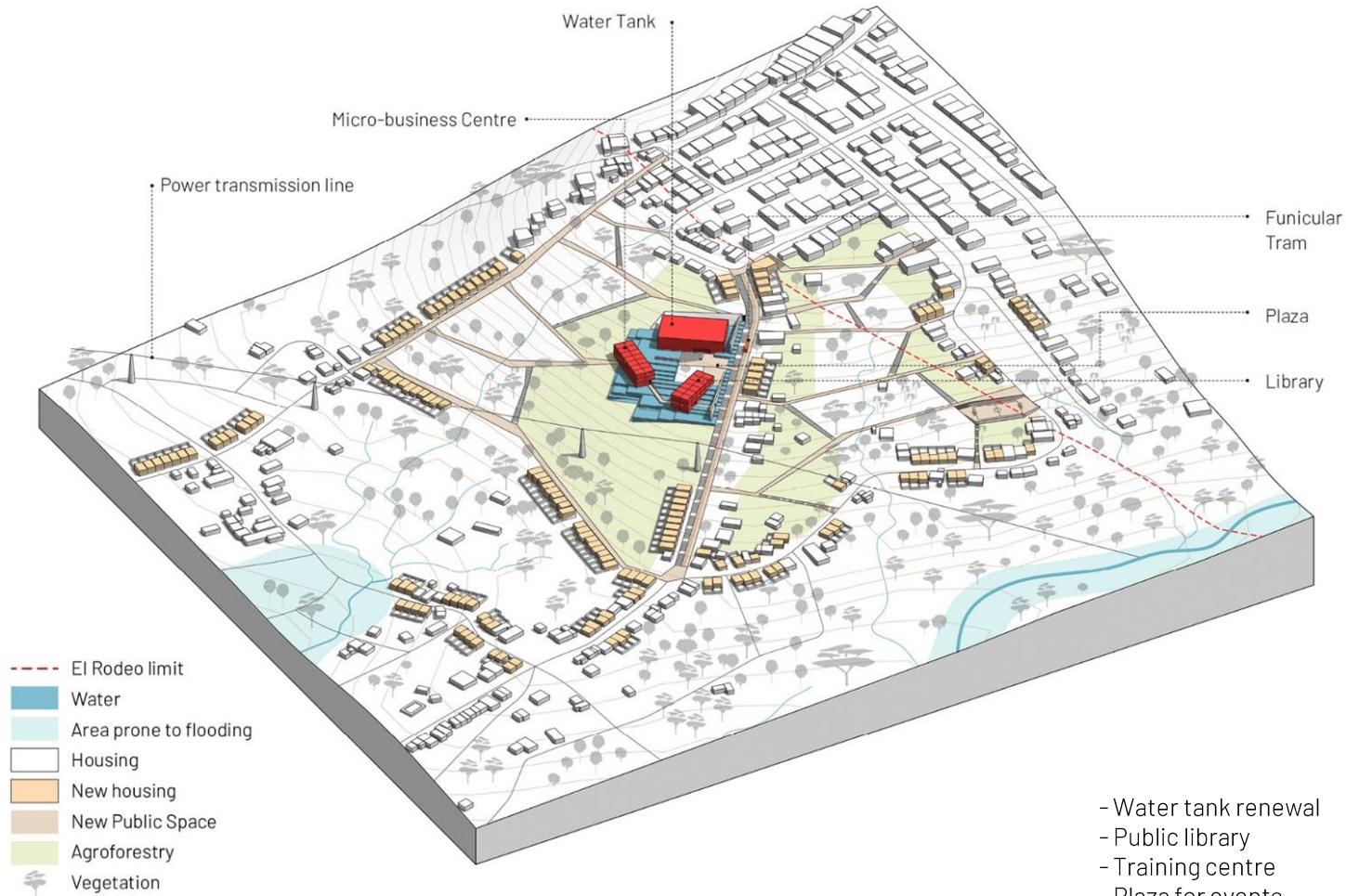
Wild Vegetation
Agriculture



Water Stairway

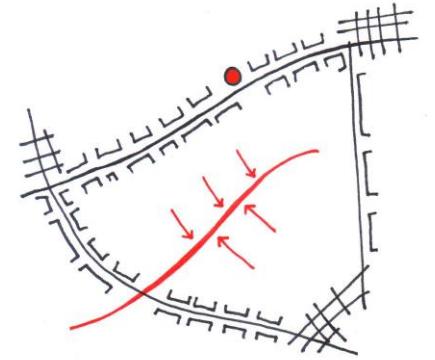
From water tank into local facility

Proposal

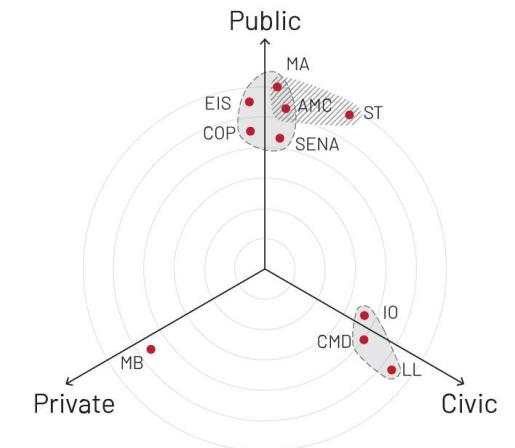


Developed by the author

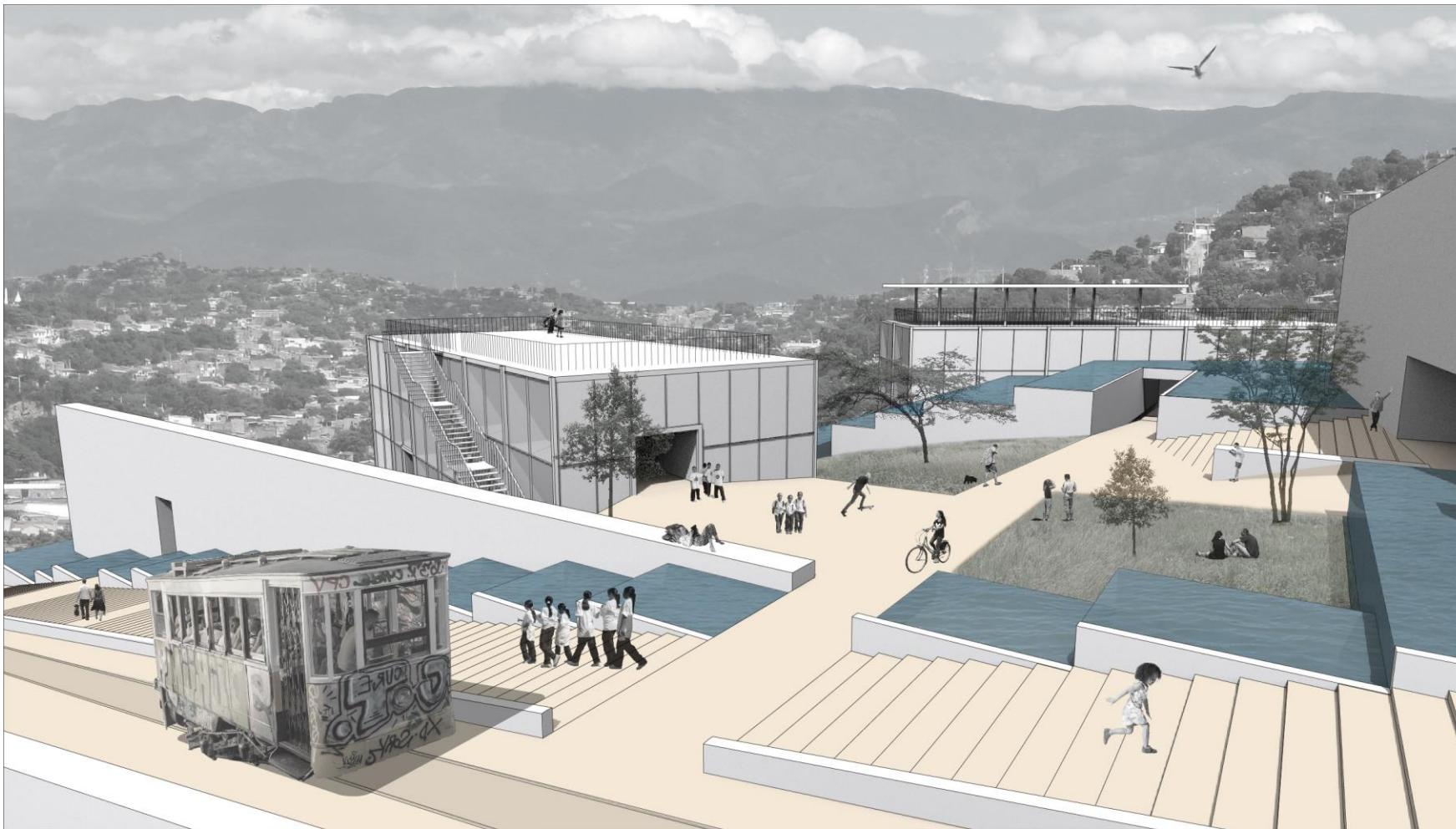
Application



Consolidate the back and front



- ▨ Funicular tramway
- ▨ Water tank
- Stakeholders

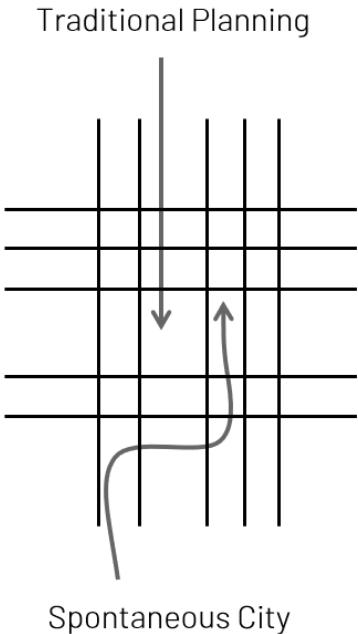


Perspective of the facility proposed for the water tank in El Rodeo

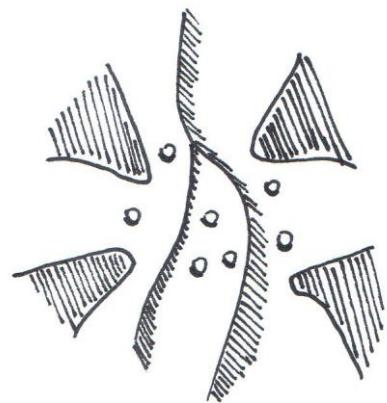
CONCLUSIONS

Recommendations for a new planning framework

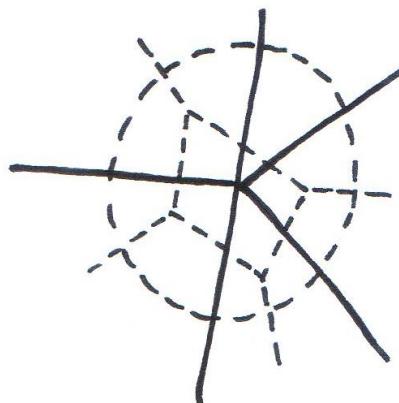
- Implement a Special Plan to consolidate the edges of Cucuta.
- Spatial planning involves more than regulations > Promote 'Do-it-yourself' initiatives.
- Decentralise the POT with local plans for each of Cucuta's districts (10).



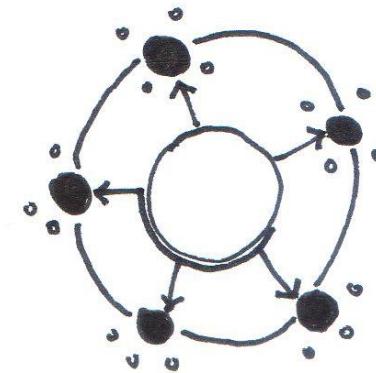
Feedback to the POT



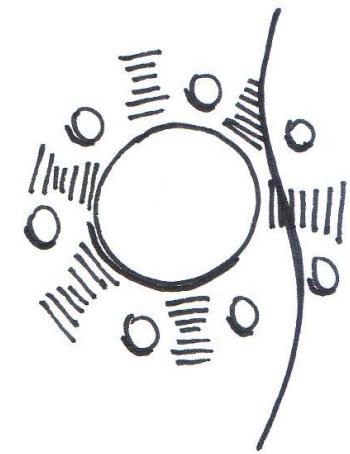
Border parks
and water reservoirs



Infrastructural links

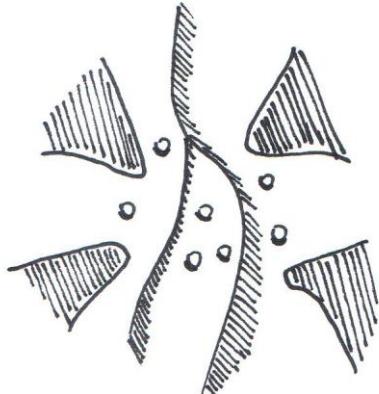


Retrofit local centralities

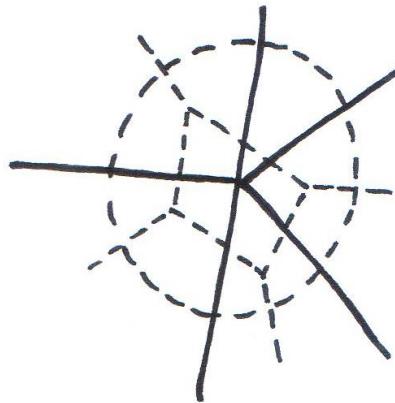


Transitional territories for
place-making

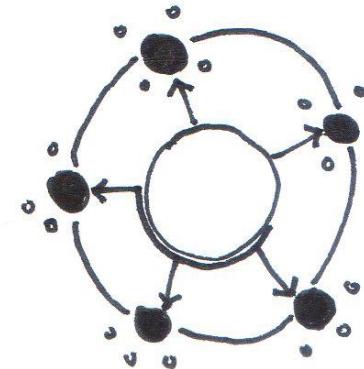
Feedback to the POT



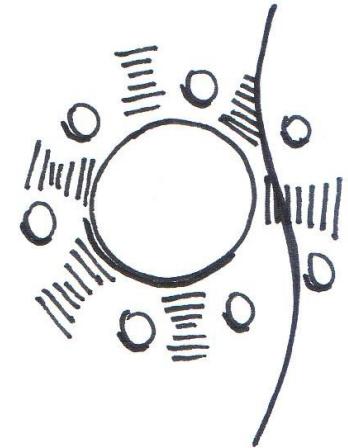
Border parks
and water reservoirs



Infrastructural links



Retrofit local centralities

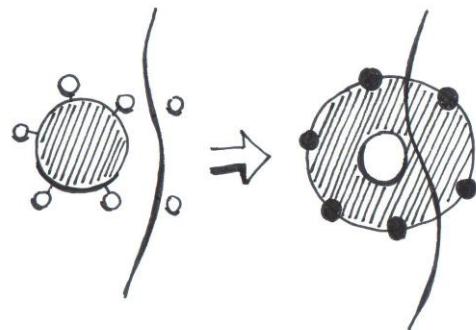


Transitional territories for
place-making

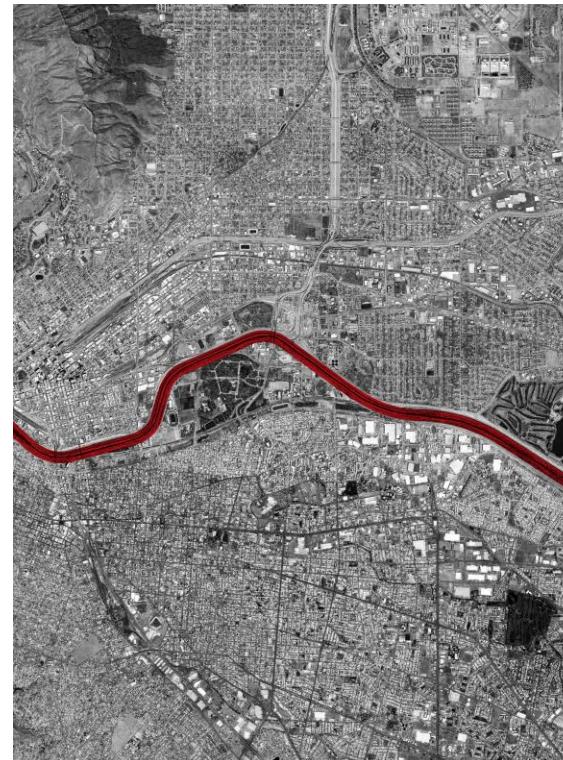
- Landscape strategies can help to avoid illegal occupation, while water reservoirs can mitigate flood risk and water shortages.
- Giving importance to the edges can help to decentralize the city.
- Place-making initiatives becomes essential to create permanence in a transitory city.

Learnings from other border cities

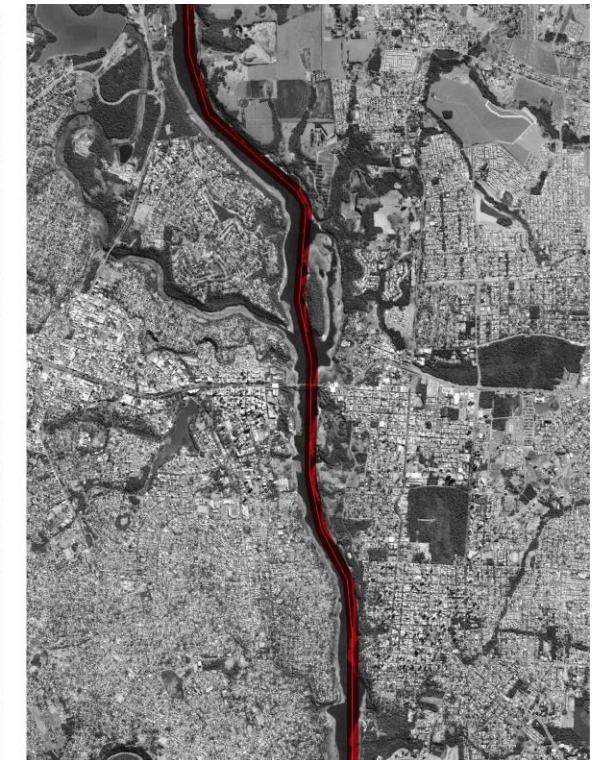
- Cucuta needs to consolidate its small industries to be more resilient to border fluctuations.
- Migratory policies should promote participation in democracy to reduce informal practices.
- New instruments of transboundary planning.
- Inequality is the most latent border, both for citizens and migrants, but this happens in every city.



Ciudad Juarez(MX)- El Paso(US)



Ciudad del Este(PY)- Foz do Iguaçu(BR)



Thank you!



Drawings of the CLT in El Rodeo by the author