



# Urban form CEAT

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CHENAL

## Introduction to African Cities

### Urban Diversity:

- Over 50 countries with a wide variety of cultural, linguistic, and historical contexts.
- Casablanca (Morocco) and Lagos (Nigeria) showcase very different urban realities.

### Rapid growth and demography

- Urbanization rate projected to reach 60% by 2050, compared to 43% today (source: United Nations).
- Emergence of megacities: Kinshasa, Lagos, Nairobi.
- The median age in Senegal is 19 years > A very young population that does not yet have the right to vote.

### Strategic Role:

- Hubs of regional and global connectivity, economic, and cultural engines.

## What is an African City?

An African city is not a uniform concept; it is plural, shaped by specific geographical, historical, and cultural contexts. It can be a bustling megacity like Lagos, a growing secondary center like Bobo-Dioulasso, or a historic city like Marrakech.

### Key Definitions:

**A space of complex interactions:** African cities are crossroads where human, economic, and cultural flows intersect. They connect rural areas to global networks.

**A mosaic of legacies:** These cities reflect local influences (vernacular architecture, social organization), colonial impositions (urban planning), and contemporary changes (modernization and globalization).

**A place of tension and innovation:** While they concentrate inequalities and urban challenges (housing, infrastructure), they are also laboratories of resilience and creativity.

## Remarkable Diversity

African cities are extremely varied. Each region, and often each country, presents unique specificities that make the urban experience distinctive.

## African Megacities

- Cities like Lagos (Nigeria), Kinshasa (DRC), and Cairo (Egypt) host populations of several million inhabitants.
- These megacities serve as regional economic engines but face issues such as overburdened infrastructure, pollution, and precarious housing.

## Secondary and emerging cities

- Cities like Kisumu (Kenya), Douala (Cameroon), and Antananarivo (Madagascar) play a strategic role in the continent's urban balance.
- They offer opportunities to relieve the congestion of major metropolises while contributing to local development.

## Historic Cities

- Cities such as Timbuktu (Mali), Marrakech (Morocco), and Zanzibar (Tanzania) embody the continent's cultural and architectural heritage.
- Their preservation is a crucial challenge amidst modernization and demographic pressures.

## Distinctive Characteristics of African Cities

### Cultural and Historical Heritage

- African cities are living witnesses to the continent's history. They bear the marks of ancient civilizations (Great Zimbabwe, Djenné), colonial periods (Dakar, Cape Town), and post-independence transformations.
- Urban centers are often cultural convergence points, blending local traditions with global influences.

### Rapid Demographic Growth

- Africa is the fastest-urbanizing continent in the world. By 2050, more than half of its population will live in cities, with major implications for housing, services, and the environment.
- This growth often occurs informally, with the emergence of unplanned neighborhoods and slums, but also offers opportunities for urban innovation.

## Distinctive Characteristics of African Cities

### A Mix of Formal and Informal

- African cities are characterized by the coexistence of formal and informal sectors.

- **Informal economy:** Local markets, street trade, and micro-enterprises are central to urban life.
- **Informal housing:** Spontaneous neighborhoods, though informal, are hubs of resilience and community solidarity.

### Resilience and Innovation

- Faced with challenges such as limited access to basic services or climate change, African cities constantly innovate.
- Residents develop local solutions to meet their needs, such as urban farming, informal transportation, and recycling initiatives.

## Contemporary Dynamics of African Cities

African cities are continuously transforming under the influence of globalization, urbanization, and digital technologies.

### **Growing Economic Hubs:**

- Cities like Nairobi (Kenya) are positioning themselves as technological and financial hubs for East Africa.
- Johannesburg (South Africa) remains a major economic center for Southern Africa, attracting international investments.

### **The Rise of Smart Cities:**

- Initiatives like Smart Kigali (Rwanda) and Eko Atlantic (Nigeria) demonstrate how digital technologies are transforming urban management, improving mobility, waste management, and access to public services.

### **A Renewal of Urban Identity:**

- African cities are cultural melting pots where new forms of art, music, and fashion are emerging, influencing global trends.

## The Challenges of African Cities

### **Social and Spatial Inequalities:**

- African cities concentrate wealth but also inequality. The coexistence of modern districts and slums reflects these disparities.

### **Sustainable Development:**

- Managing natural resources (water, energy) and waste is crucial for ensuring sustainable urban development.

### **Climate Change:**

- African cities are particularly vulnerable to climate change impacts: floods, droughts, and rising sea levels threaten infrastructure and populations.

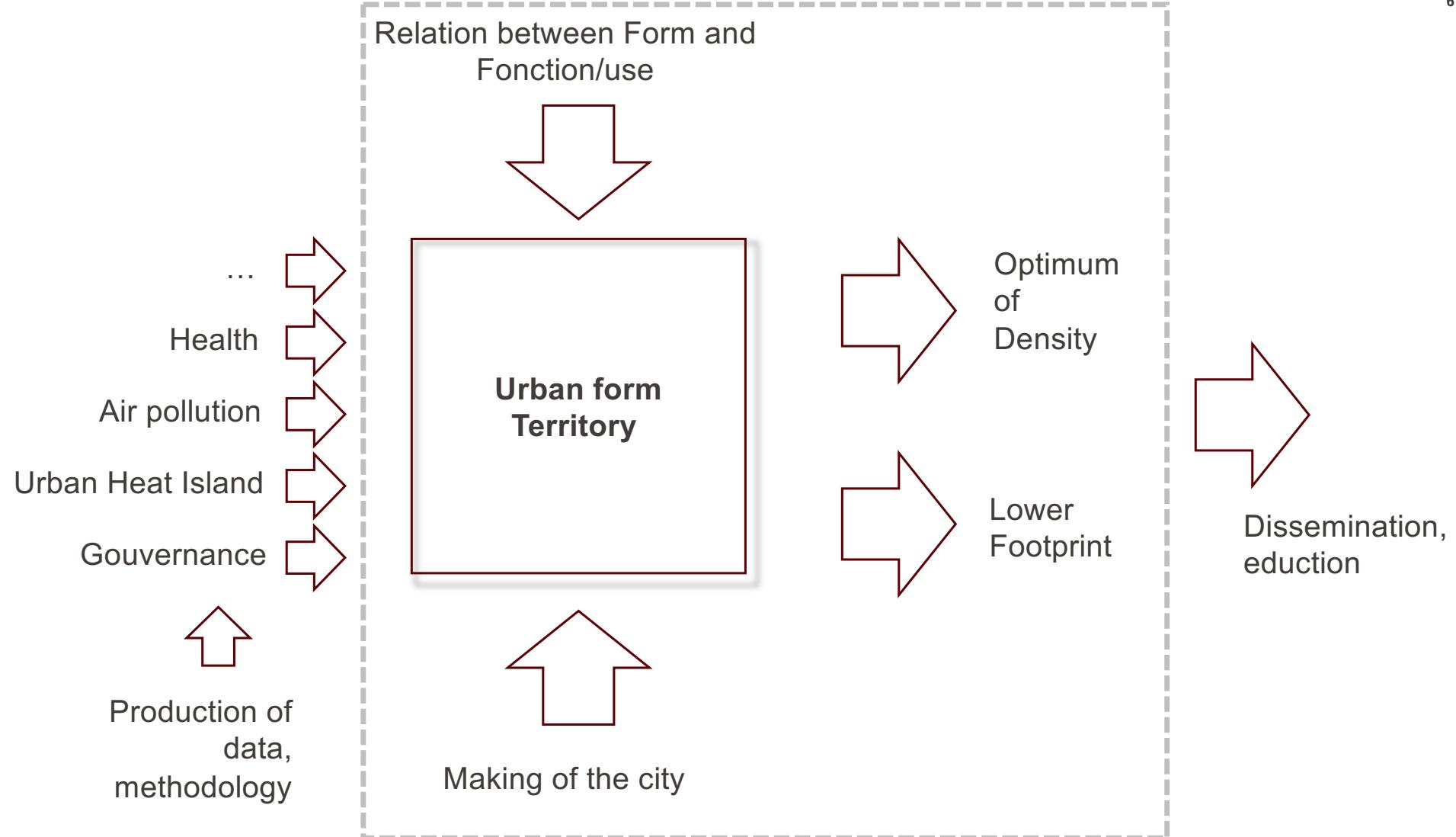
## **Vision for the Future: the prospects of african cities**

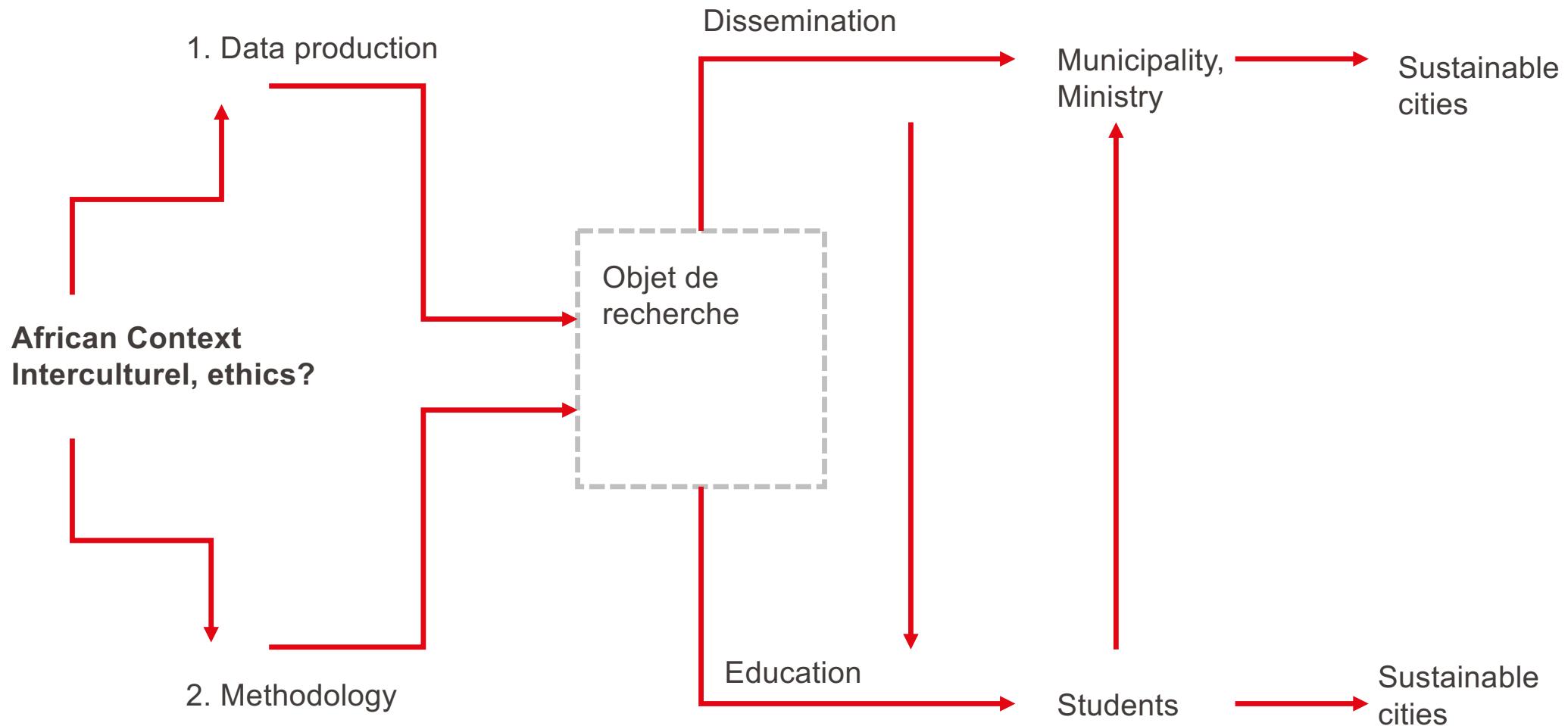
African cities hold immense potential for the continent's development. If they can overcome their structural challenges, they could become global models of resilience, innovation, and sustainability.

**Proactive urban planning:** Investing in infrastructure, housing, and public services is essential to meet the needs of growing populations.

**Collaboration among Stakeholders:** Cooperation between governments, citizens, businesses, and international organizations is necessary to build inclusive cities.

**Leveraging local assets:** African cities can draw on their cultural heritage, creativity, and youthful populations to shape a prosperous future







PARTENAIRES STRATÉGIQUES



CASABLANCA  
EVENTS & ANIMATION

smart city expo  
WORLD CONGRESS

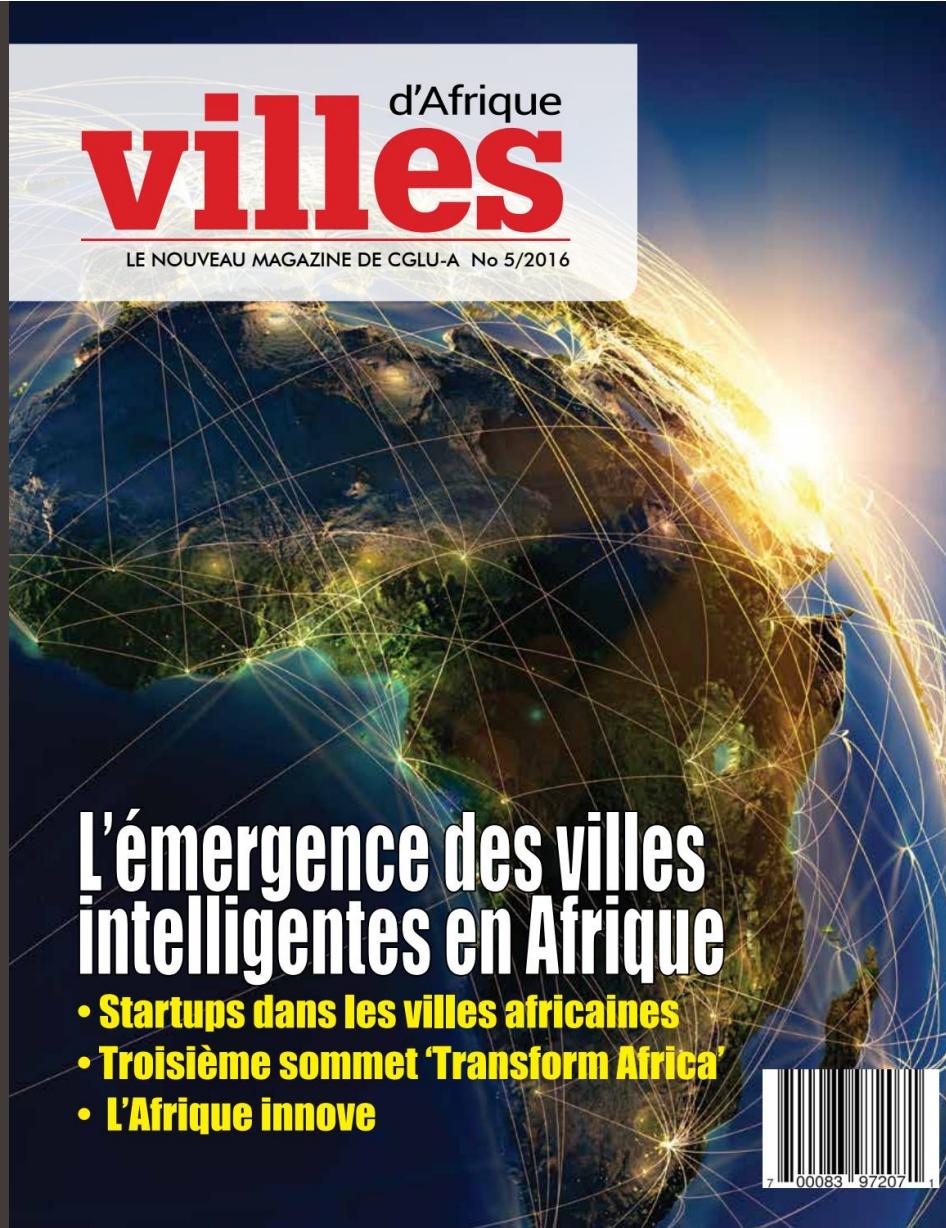
Fira Barcelona

e-madina  
The Smart City Cluster  
Casablanca

Maroc  
Export

UIP  
Centre Régional d'Innovation  
Commerce-Tourisme-Industrie

O.F.E.C



# L'INTERNET DES SERVICES POUR LA SMART CITY





# KONZA TECHNOLOGIY CITY - KENYA



COMMAND



THE SPENT RESOURCES

320324



# IROLEY SMART CITY

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► 474689

► 929134

► 252467

270

06



POPULATIO

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04

93

ACTIVITY STATUS



# EKO ATLANTIC – NIGERIA



# KINTELE



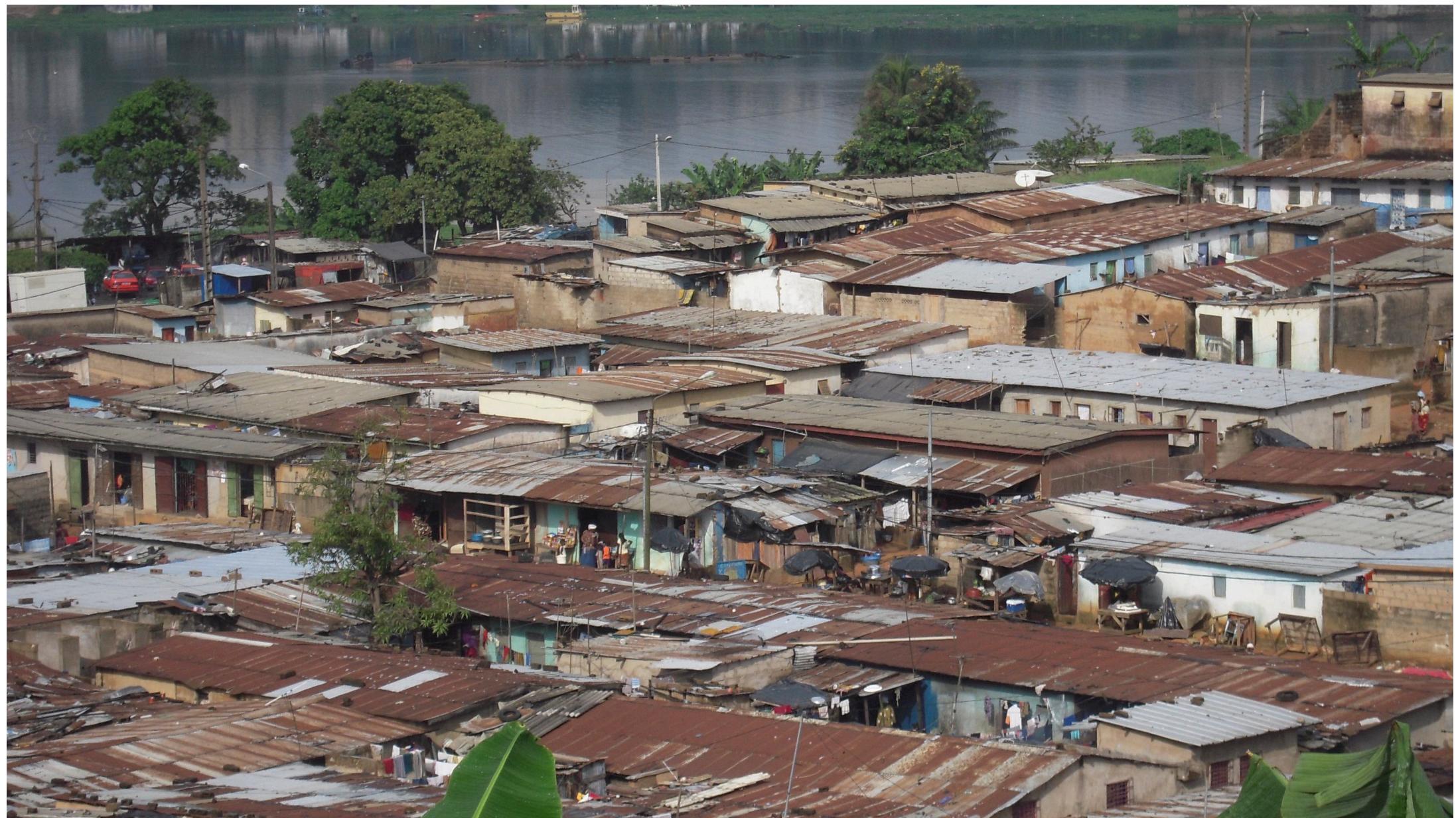


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**PAIEMENT  
ACCEPTÉ ICI**

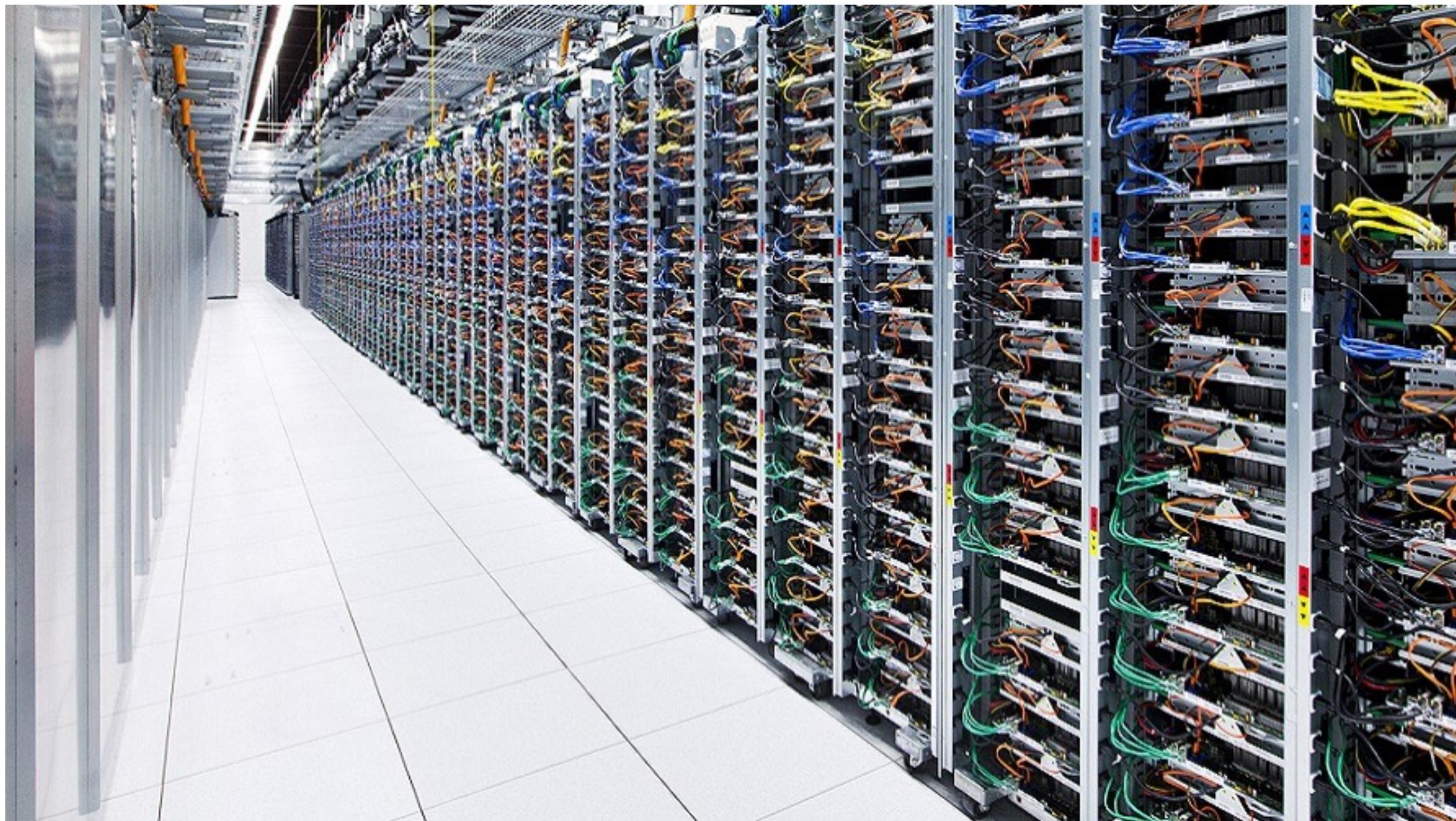
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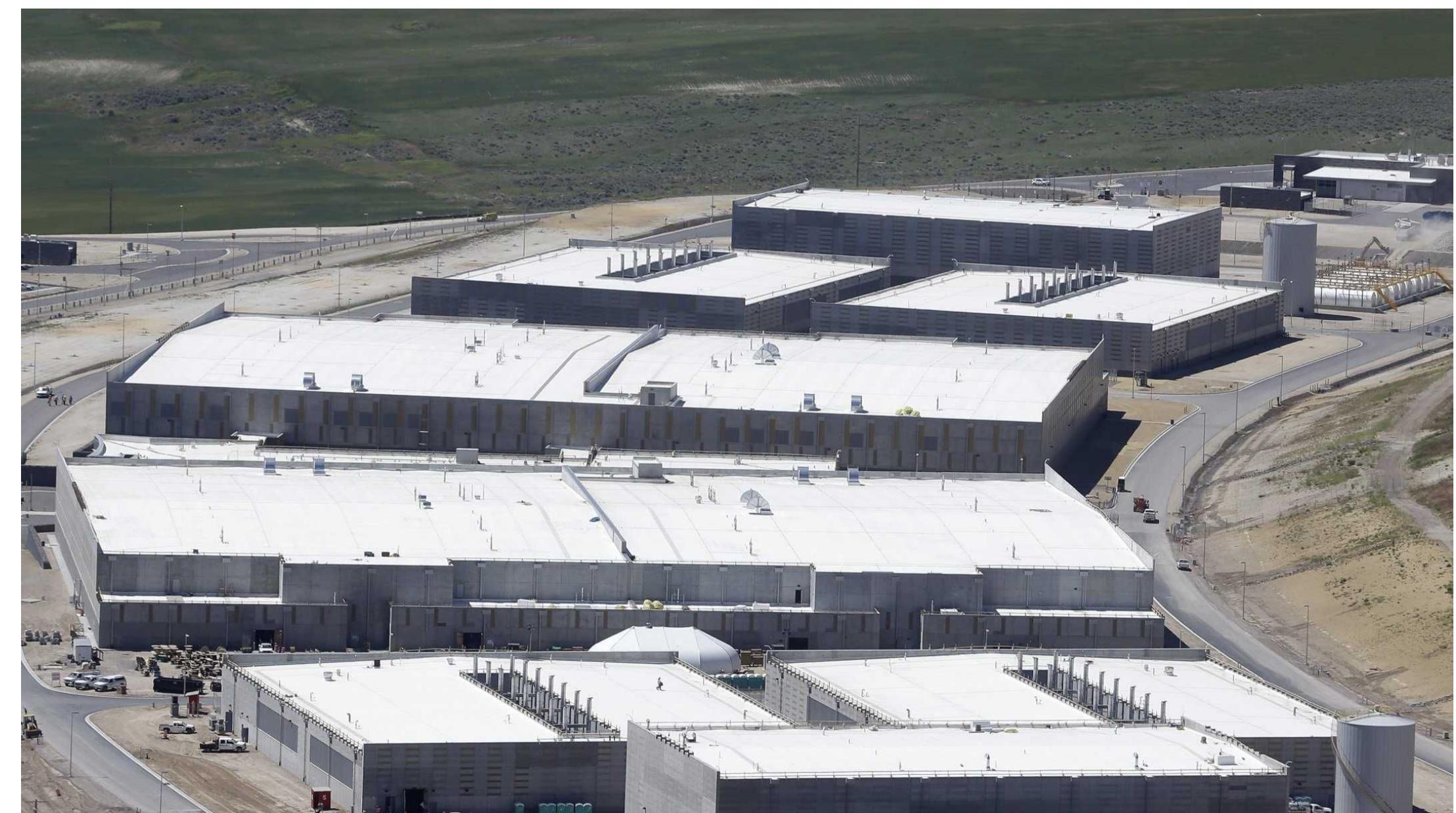
Service clients : 3333 (gratuit) ou 1919 (payant)

groupe  
**etisalat** The Etisalat logo, featuring the word "etisalat" in a bold, grey, sans-serif font next to a green, stylized, teardrop-shaped graphic.





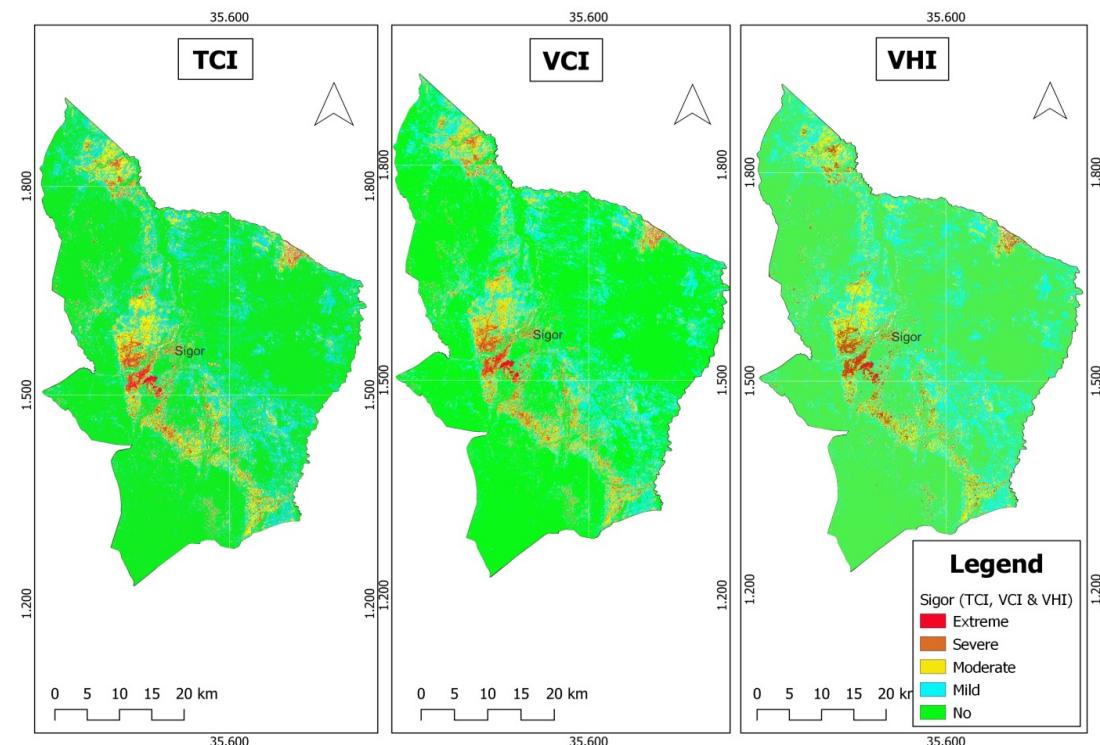






# CROSS - Multi-Criteria Decision-Making Approach Using Remote Sensing and GIS For Drought Impacts Assessment On Vegetable Health

- **Partners:** EPFL, University of Lausanne (Prof Olivier Gallay), University of Zimbabwe, Pokot Women Empowerment Organization
- **Duration:** 1 years
- **Study area:** West Pokot County, Kenya
- **Drought Vulnerable Areas:** Sigor and Kacheliba Sub-Country
- **Activity conducted:** Remote Sensing, Survey with Farmers, Focus Group Discussions, Key Informants Interviews, Spatial and statistical Analysis



# DigiSen – Youth and Digital Technologies in Senegal

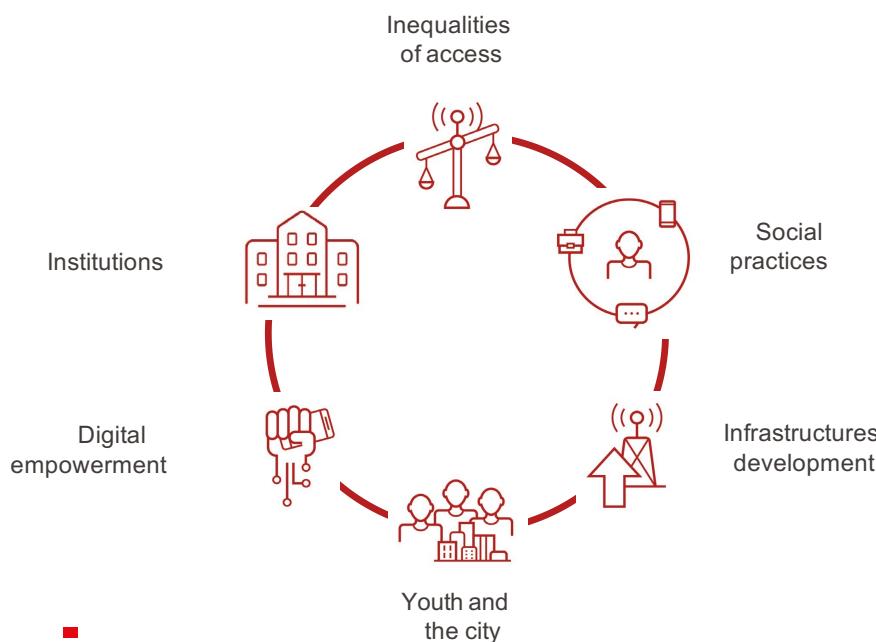
*“Digital policies, infrastructure development and youth participation in Saint-Louis and Ziguinchor”*

Botnar Foundation

Theme: Youth and digital technologies in civic life participation in Senegal intermediary cities

Started in October 2023 - End October 2024

## Research Themes



## Institutions- Disciplines- Methods



**ESP – Digital Engineering**

- social media scraping
- mapping of digital infrastructure

**EPFL**

**EPFL/CEAT – Spatial Analysis**

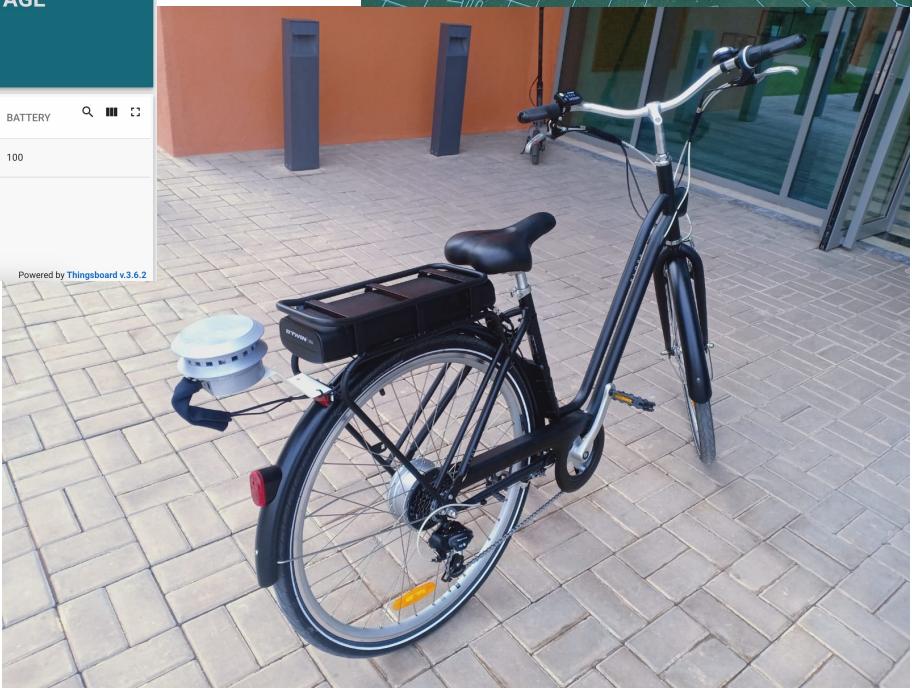
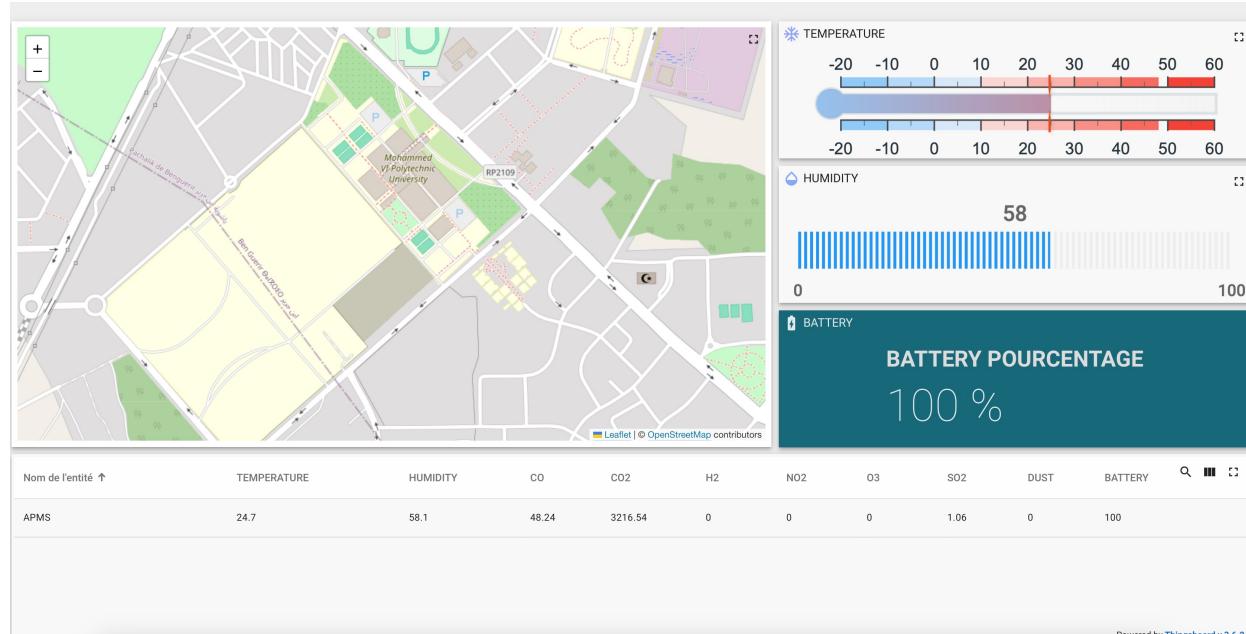
- community mapping of digital last-kilometer
- documentary review



**UGB – Social Science**

- interviews
- Survey

# Urban Systems Data HUB



# SMART GREEN CITY BENGUERIR

- Data hub
- Digital Twin Cities
- Gouvernance
- Urban management
- ...
- 2024 – 2028
- SADV



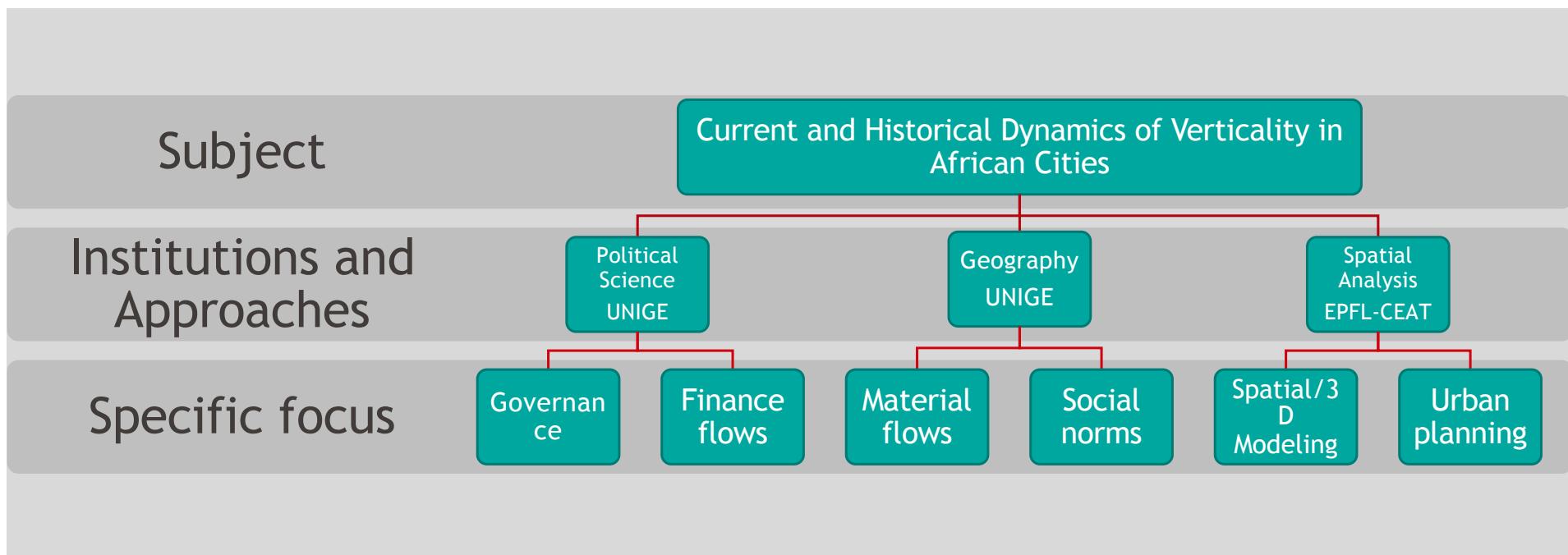


One more thing

# EPFL Verticalisation of African Cities - SNSF Project

## EPFL-UNIGE

- Consortium : EPFL-CEAT; UNIGE-Political Science; UNIGE-Geography
- Theme: The Evolving Paradigm of Verticalisation in African Cities at the Intersection of Materiality, Governance and Social Dynamics
- Project in development for submission to SNSF

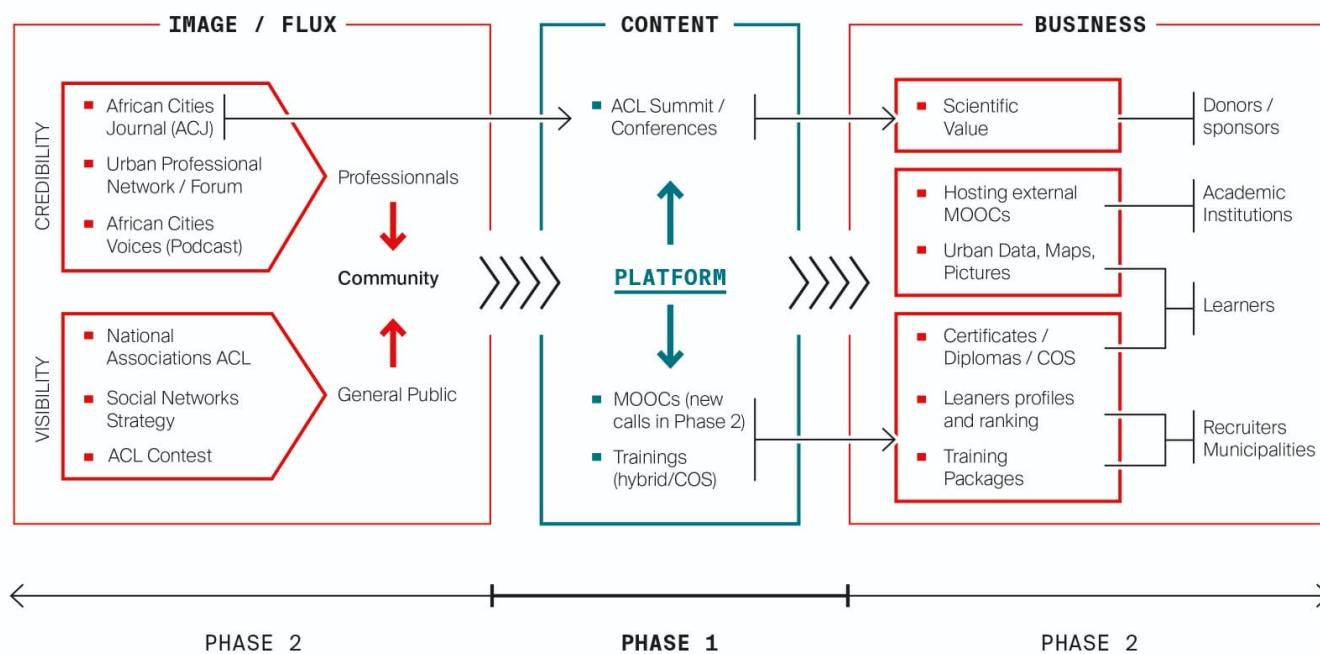


# Podcast



# African Cities Lab

## ACL - PRELIMINARY CONCEPT PHASE 2



## Definition of Urban Living Lab

An **Urban Living Lab** is a real-life testing environment where innovative solutions for urban challenges are co-created, tested, and refined in collaboration with various stakeholders, including residents, local governments, businesses, and researchers. It serves as an experimental platform to explore new approaches to urban development, sustainability, and technology within a specific urban context. Key characteristics of an Urban Living Lab include:

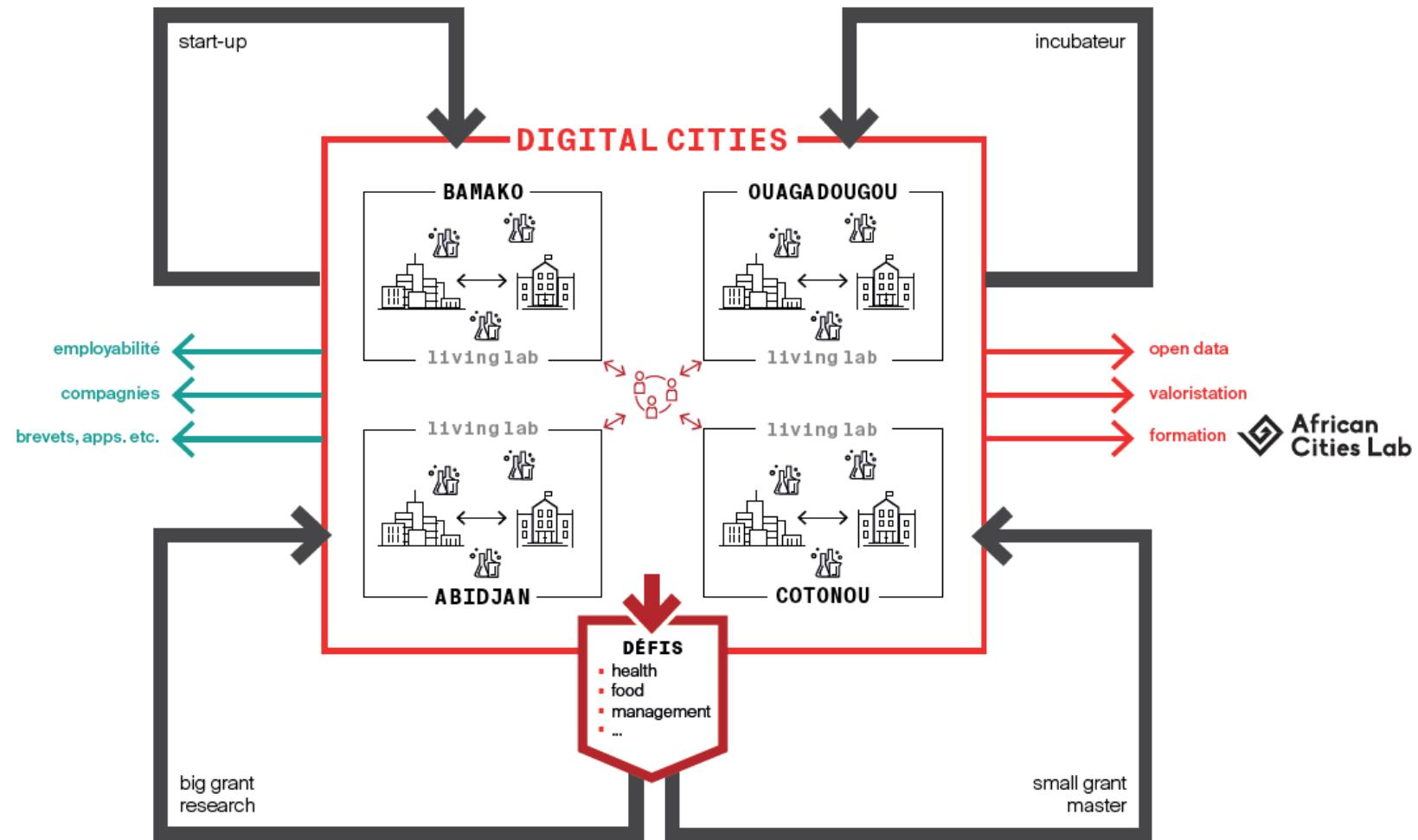
**Co-Creation:** Active participation of diverse stakeholders to ensure solutions are contextually relevant and inclusive.

**Experimentation:** Implementation and testing of innovative projects in real-world urban settings.

**Learning:** Generating knowledge through iterative processes to inform urban planning, policy, and future innovations.

**Focus Areas:** Common themes include smart cities, green infrastructure, social inclusion, mobility, and resilience.

# Digital Solutions for Cities





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