Accommodating the next billion urban residents: An opportunity to create inclusive, compact and resilient cities?

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CURRENT REALITY: Urban Sprawl

Land Expansion faster than Population Growth
CURRENT REALITY: Unequal & Spatially Divided
CURRENT REALITY: Appalling Living Conditions
Vulnerable Cities

- Sprawl
- Appalling Living Conditions
- Spatial Inequality
Where will the next billion live?

Can our cities do better?
Structure

1. Framework to assess urban residents well being
2. Strategies for reducing vulnerability
3. Slum upgrading
4. Sites and services
5. Implications
1

DIAMONDS AND POLYGONS
Framework for diagnostics & decision making
How are people doing?
DEVELOPMENT DIAMOND: NAIROBI’S SLUMS

WELFARE
% above poverty line

LIVING CONDITIONS
% with perm wall, water and electricity

EDUCATION
% completed primary

EMPLOYMENT
% working
DEVELOPMENT DIAMOND: DAKAR'S SLUMS

WELFARE
% above poverty line

LIVING CONDITIONS
% with perm wall, water and electricity

EMPLOYMENT
% working

EDUCATION
% completed primary

18%
36%
74%
39%
DEVELOPMENT DIAMOND: NAIROBI AND DAKAR

**NAIROBI**

- **WELFARE**: 28% above poverty line
- **EMPLOYMENT**: 68% working
- **LIVING CONDITIONS**: 79% with perm wall, water and electricity
- **EDUCATION**: 3% completed primary

**DAKAR**

- **WELFARE**: 36% above poverty line
- **EMPLOYMENT**: 36% working
- **LIVING CONDITIONS**: 39% with perm wall, water and electricity
- **EDUCATION**: 39% completed primary
INFRASTRUCTURE POLYGON: NAIROBI’S SLUMS

- Piped Water: 19%
- Electricity: 22%
- Public Transit: 20%
- Toilet: 25%
- Garbage Pickup: 12%
- Sewage Disposal: 12%
LIVING CONDITIONS DIAMOND

INFRASTRUCTURE

UNIT

TENURE

NEIGHBORHOOD & LOCATION
LIVING CONDITIONS: NAIROBI

- **Infrastructure:** 22% have electricity
- **Unit:** 12% have permanent walls
- **Tenure:** 8% own homes
- **Neighborhood & Location:** 37% feel safe
LIVING CONDITIONS DIAMOND: NAIROBI AND DAKAR

NAIROBI

UNIT: 12% with permanent walls

INFRASTRUCTURE: 22% with electricity

TENURE: 8% own homes

NEIGHBORHOOD & LOCATION: 37% feel safe

DAKAR

UNIT: 96% with permanent walls

INFRASTRUCTURE: 82% with electricity

TENURE: 74% own homes

NEIGHBORHOOD & LOCATION: 48% feel safe
WHAT SHOULD BE DONE? MAKING DECISIONS

NAIROBI

- Welfare: 28%, 79%
- Employment: 8%, 68%
- Education: 74%
- Living Conditions: % with perm wall, water, and electricity

DAKAR

- Welfare: 18%, 36%
- Employment: 3%, 39%
- Education: 36%
- Living Conditions: % with perm wall, water, and electricity
HOW TO IMPROVE LIVING CONDITIONS & REDUCE VULNERABILITY?
SPECTRUM OF INTERVENTIONS:
Assistance for low income households
3

SLUM UPGRADING ex-post
To unlock tap & improve housing, need to alter *tenure mix*.
KENYA: INFRASTRUCTURE & TENURE TOGETHER
KISIP: National Slum Upgrading

Objective
“to improve living conditions in informal settlements”

Through:
• Tenure security
• Infrastructure

$100 Million = 15 Urban Centers
135 Settlements
IMPROVING TENURE VIA TITLE REGULARIZATION
ACHIEVING LONG TERM RESULTS

VIA COMMUNITY INVESTMENTS

Before

After
IMPROVING HOUSEHOLD ACCESS

ToToilet Before

Toilet After
FROM JERRY CANS

TO WATER TANKS & PIPES

Before

After
BUT IF THE LOCATION IS WRONG?
Need to relocate
SINKING NEIGHBORHOOD = LOST INVESTMENT

PREVENT DEVELOPMENT IN VULNERABLE AREAS
Massive stock of slum housing

Slum upgrading helps in certain contexts

- Can cause displacement of tenants
- Need to tailor interventions to context

But expensive for what you get

And people suffer in the interim
4

PLANNING FOR NEW INFLUX
ex-ante & ability to work with a vision
SITES & SERVICES

UNIT INFRASTRUCTURE

TENURE NEIGHBORHOOD & LOCATION

UNIT
Evidence from Sites & Services in India

$1 \text{ billion}

11 \text{ projects}

27 \text{ cities}

279,000 \text{ plots}

Source: World Bank Archives, Project Documents, author’s calculations
**Project Design**

- **Small Plots:** 21 – 33 m²
- **Variable sizes:** 21-223m² plots
- **Spatially economical**
- **Mixed Use:** typical locally
- **Outskirts:** edge of built up

Source: World Bank Archives
In the 1980s ...
2015: Multi-Level Incremental Development

Source: Kate Owens, Mumbai, October 2015
Mixed Use

Source: Kate Owens, Mumbai, October 2015

Source: Andrea Rizvi, Chennai, November 2015
Mixed Income & High Density

Charkop, Mumbai

Sites & Services

Private Sector

Source: World Bank Archives, Open Street Map, Google Earth and author’s calculations
High Density

Density (km²)

Source: Bertaud and Malpezzi 2003 and author’s calculations
Planned Neighborhoods

Mumbai

Chennai

Source: Open Street Map 2015, World Bank Archives, Chennai Planning Office
City grew around the sites

Source: Nightlights Data 2011 processed by Katie Willis, World Bank Archives, Chennai Planning Office
IMPLICATIONS:
Planning for Resilience
Neighborhood as Unit of Action: 
Business as Usual
Redevelopment and Expansion

Advantages
• Provides community public goods & improves living conditions
• Offers products to reduce costs and increase inclusion
• Plans for mixed use and efficient neighborhood design
Making Cities Inclusive

- New (affordable) housing products needed; integrated in city
- Small plots give access to different HHs; enhance inclusion
- Incremental development is a slow process; patience!

Compact City Form

- Carve out or redevelop neighborhoods, with the “right” features
  - mixed income, mixed use, dense, walkable, livable – it exists!
- Government often has greater land assembly capacity
- Private sector follows initial public actions

Urban Resilience: location & quality matter

- Prevent building in risk-prone areas
- Reinforce/retrofit existing
Creating Inclusive Cities

Resilient Cities

Improved Living Conditions

Basic Services
Better Units
Tenure Security
Neighborhood Upgrading

Shaping City Form
Dense
Walkable
Transit Oriented
Green Spaces

Creating Inclusive Cities

Mixed Income
Small Plot
Incremental Housing
Shared Facilities & Amenities

Spatial Inequality

Shaping Sprawling City Form

Vulnerable Cities

Appalling Living Conditions

Appalling Living Conditions

Vulnerable Cities

Shaping City Form
Thank you!