IN SUPPORT OF THE

# CALL TO ACTION

## ON SUSTAINABLE URBANISATION ACROSS THE COMMONWEALTH




ASSOCIATION OF COMMONWEALTH UNIVERSITIES, COMMONWEALTH ASSOCIATION OF ARCHITECTS,
COMMONWEALTH ASSOCIATION OF PLANNERS, COMMONWEALTH LOCAL GOVERNMENT FORUM

**WELCOME TO THE SESSION. WE WILL BE STARTING SHORTLY.**

nesta

Challenges

# Global Urban Planning Challenge: Developing an Open Innovation Competition

7 July 2021

# AGENDA

**14:00-14:05** **Welcome and context**

- Peter Oborn, Senior Vice President, Commonwealth Association of Architects

**14:05-14:25** **Global urban planning challenge**

- Kathy Nothstine, Head of Future Cities, Nesta Challenges
- Olivier Usher, Head of Research, Nesta Challenges

**14:25-15:05** **Context of the problem and need**

- Dr. Shipra Narang Suri, Chief, Urban Practices Branch, Global Solutions Division, UN-Habitat
- Manuel de Araujo, Mayor of Quelimane City, Mozambique
- Patrick Lamson-Hall, Research Scholar, NYU Marron Institute of Urban Management
- Kilion Nyambuga, Programme Officer, Slum Dwellers International

**15:05-15:25** **Q&A and discussion: how a challenge could deliver impact**

**15:25-15:30** **Concluding remarks**

# We are challengers.
# We are innovators.
# We are game changers.


**Nesta Challenges has successfully delivered nearly 40 challenge prizes.**

**Our challenges range from frontier technology to social innovation.**

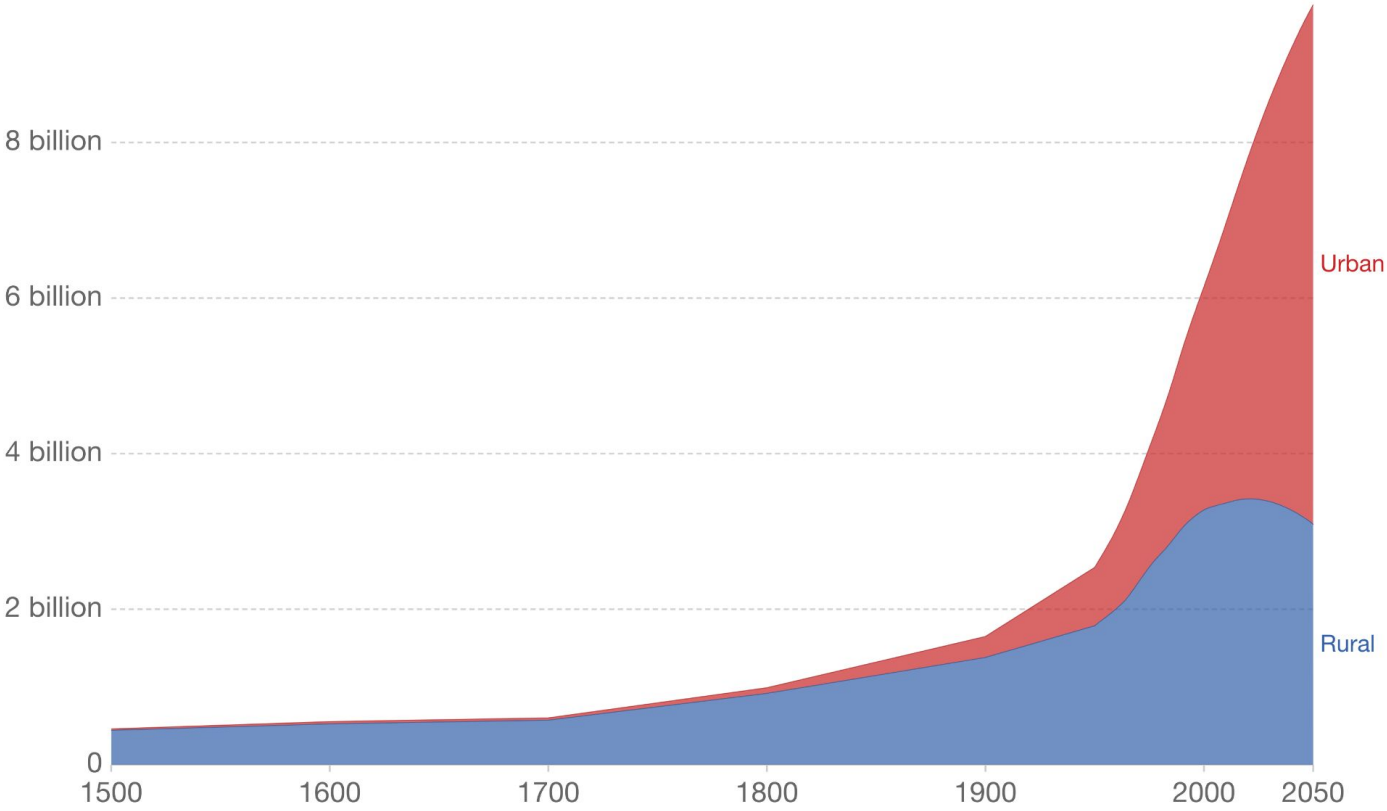
**We also advise governments, foundations and corporates - as researchers, prize designers, advisers and delivery partners.**

**We've awarded over £20 million in prizes.**

# Urban and rural population projected to 2050, World, 1500 to 2050

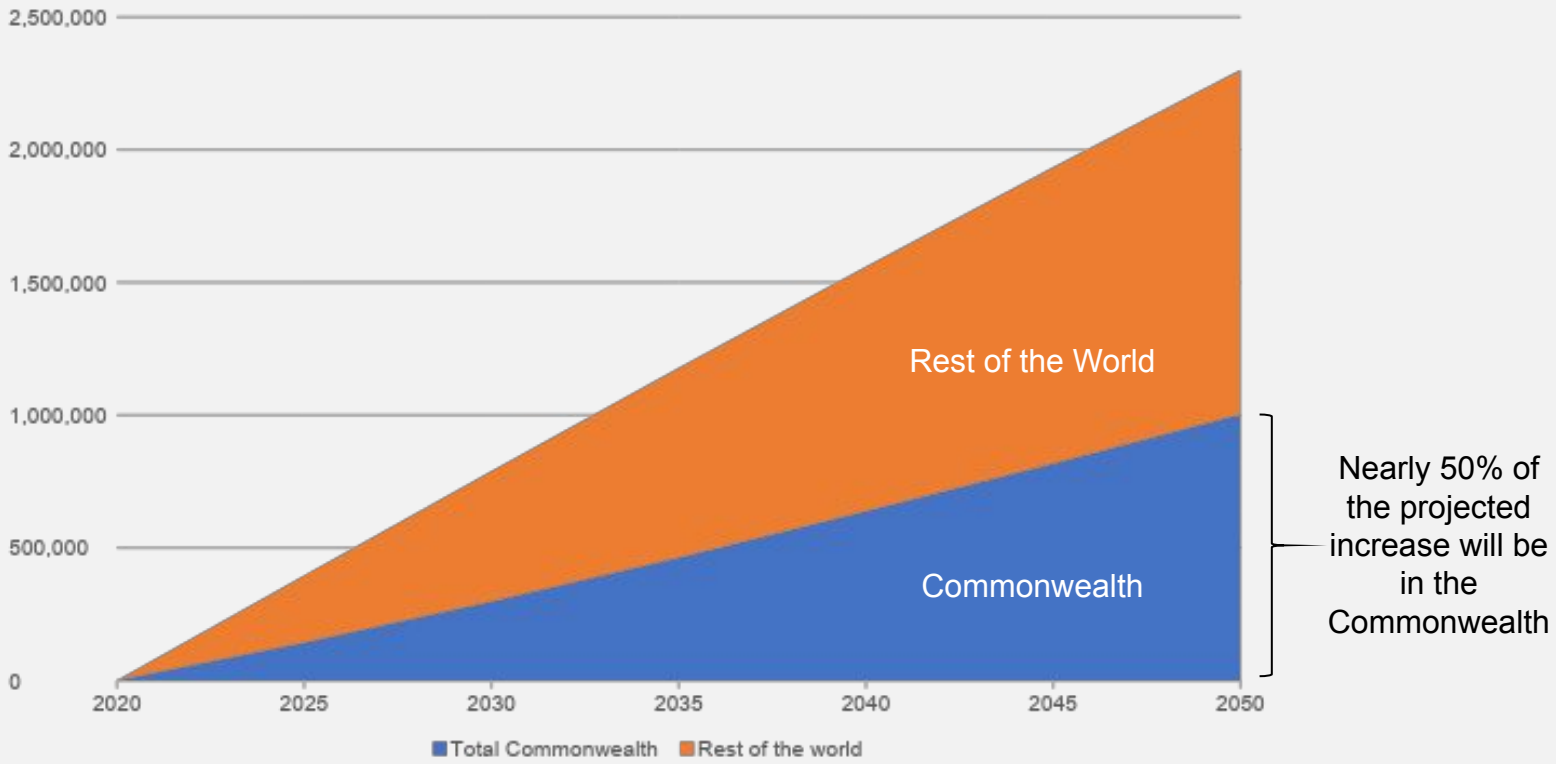
Total urban and rural population, given as estimates to 2016, and UN projections to 2050. Projections are based on the UN World Urbanization Prospects and its median fertility scenario.

Our World in Data



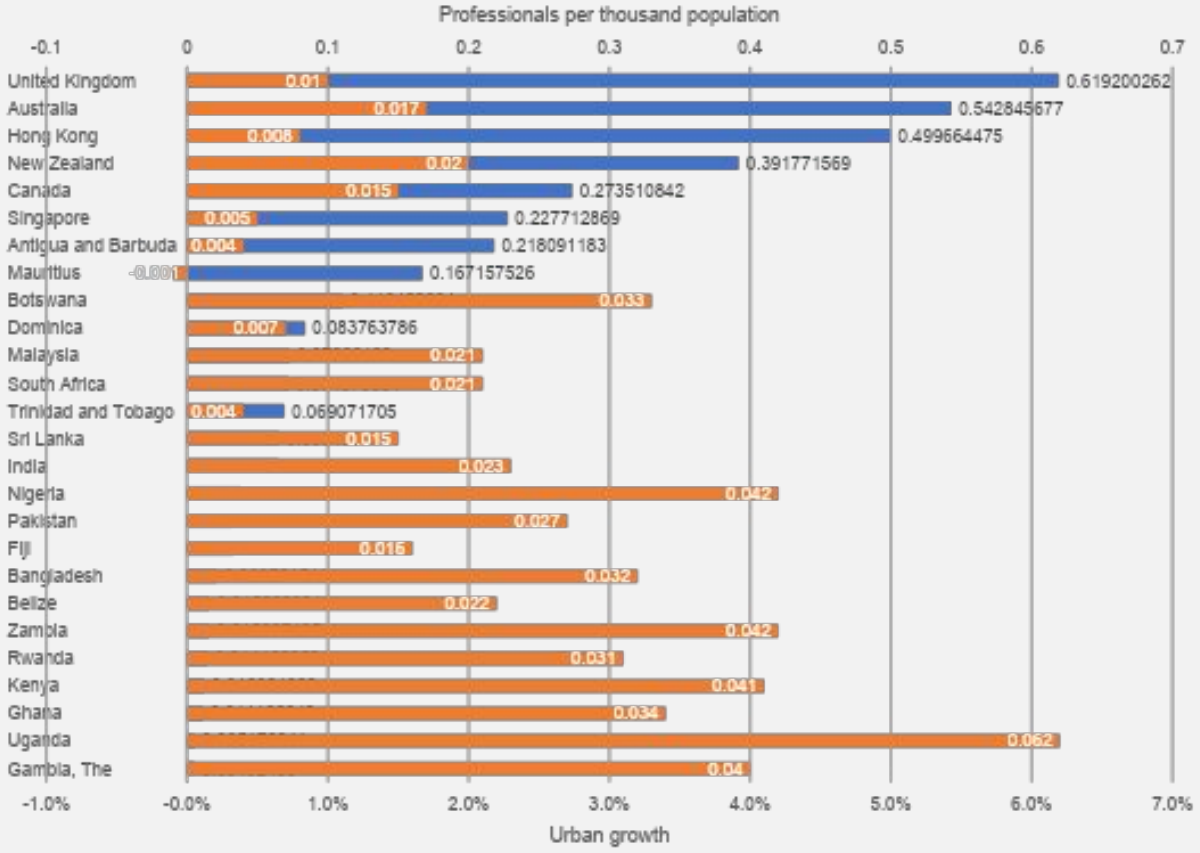

Source: OWID based on UN World Urbanization Prospects 2018 and historical sources (see Sources)

# **UN-Habitat** World Urbanisation Prospects




Source: ‘World Urbanisation Prospects, 2018’, UN-Habitat

# Ratio of Architects v Rates of Urbanisation, 2019



How can we work with cities, innovators, community leaders (& other stakeholders) **to develop tools to inform decision making** in rapidly urbanising places?

- Cost-effective
- Data-driven
- Scalable
- Locally relevant

# What is a challenge prize?

## Who cares where a solution comes from... providing it works?

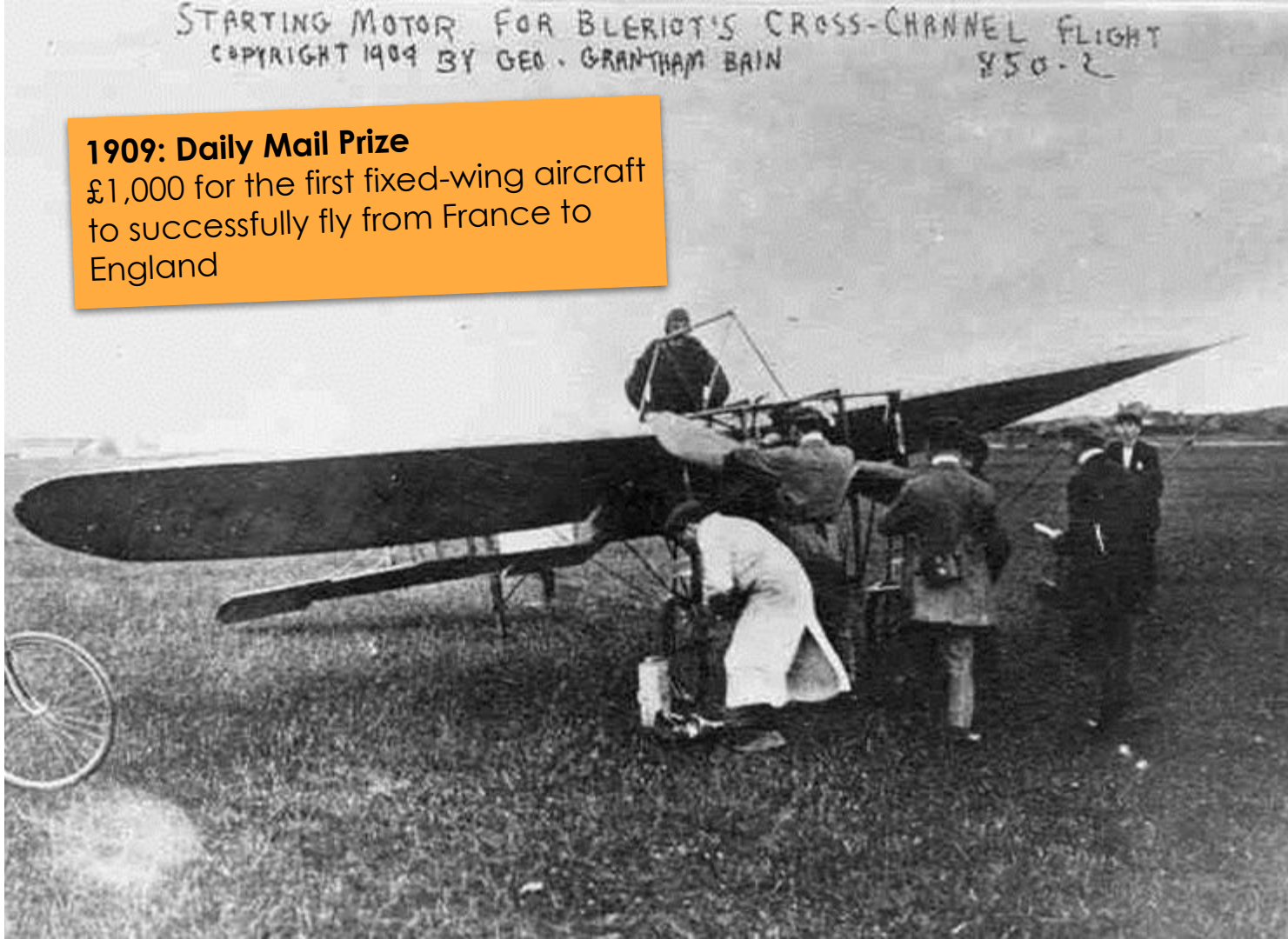
Challenge prizes offer a reward to whoever can **first** or **most** effectively meet a defined challenge.

They are **public competitions** open to the broadest possible community of innovators.

**Challenge prizes have a long history**, particularly in the early development of aviation.

Today they are popular with governments and foundations as a way of driving forward innovation and solving problems.

Nesta has been running challenges since 2008.

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**Challenge prizes are designed to...**

Create **breakthrough innovations**: new tech and services that successfully address the challenge.

Help **innovators thrive**: more people, with more expertise and capacity working in the field.

Unlock **systemic change**: raised awareness, policy informed, markets shifted.

# When to use a challenge prize?

- A problem that would **benefit from fresh thinking** and new talent
- You want to **accelerate progress** or incentivize solutions to scale
- **Low-risk** way to incentive innovation and leverage investment

# Nepal Data Driven Farming Prize

A prize to incentivise teams to develop tools that **source, analyse and translate data into information which farmers can use to improve agricultural productivity** in Nepal.

A prize that **built on the potential of existing datasets** to improve lives of the rural poor in Nepal.

Half the **entrants, finalists and winners** were local Nepalese teams.

Teams were helped to **develop their solutions in partnership with the farmers who would be using them.**

**Four winners** earned cash prizes, but **13 innovative technology solutions** were created by the cohort of finalists.

# Toyota Mobility Unlimited Challenge

A prize for the best **assistive technology for people with paralysis** that incorporates AI, smart technology or robotics

The $1m winner was a **wheelchair user** who was unhappy with the design of existing wheelchairs.

The prize supported **advanced technology**, the winning solution was an innovative composite wheelchair with computer-controlled balance.

The finalists and winners benefited from **media coverage of the prize and their inventions** in TV and newspapers.

The prize **shone a light and created excitement** in a sector that was lacking in innovation.

# London Mayor's Resilience Fund

**£1 million open innovation challenge** to solve some of London's most pressing challenges, including air quality, high street vacancies, food insecurity, mental health, energy infrastructure & more.

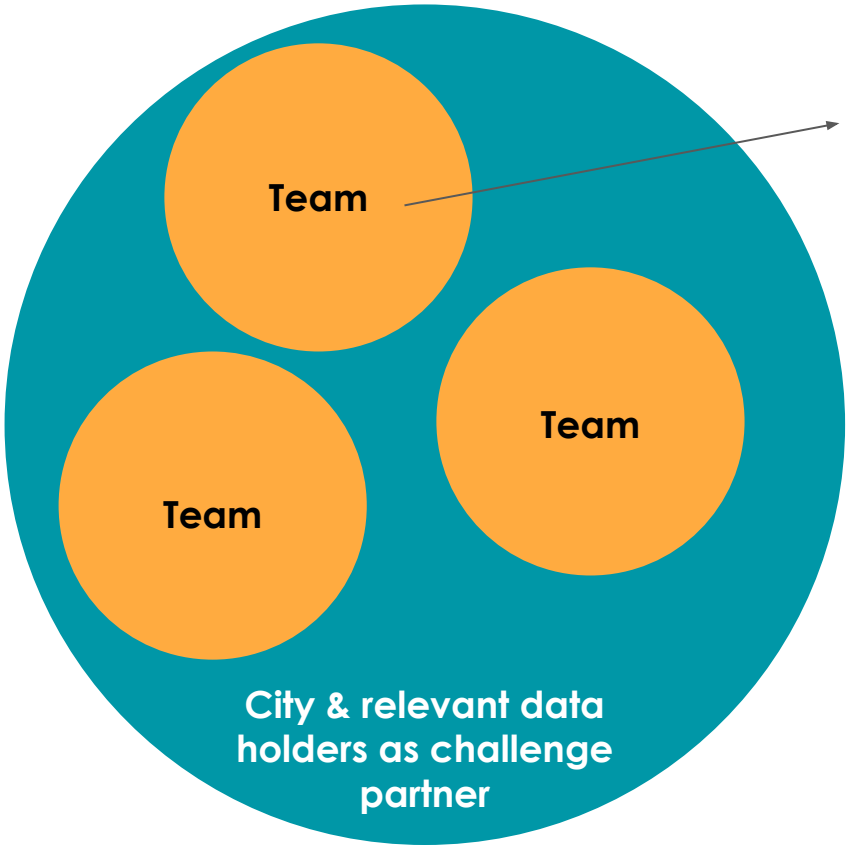
**10 challenges identified** through an open call process

**Problem-holders are community-based city agencies** or organisations such as local authorities, BIDs, charities

**Collaborated with city agencies** to develop robust challenge statements and support for innovators

**35 teams** awarded funds and supported with **co-creation phase**, and **10 winners** selected to implement projects

# Global Urban Planning Challenge




Teams compete to develop & demo tools, supported by seed grants & access to data & support along the way

## Anticipated outcomes

1. **Cost-effective, scalable, locally tailorable planning tools**
2. **Better-informed decision making → economic growth and more equitable service delivery**
3. **Engage communities to shape the future (esp young people)**
4. **Improved opportunities for local innovators and SMEs**

nesta Challenges

# Panel discussion: context of the problem and need

**Dr. Shipra Narang Suri**

Chief, Urban Practices Branch, Global Solutions Division, UN-Habitat

**Patrick Lamson-Hall**

Research Scholar, NYU Marron Institute of Urban Management

**Manuel de Araujo**

Mayor of Quelimane City, Mozambique

**Kilion Nyambuga**

Programme Officer, Slum Dwellers International

# Planning processes in rapidly urbanizing countries:
## Barriers, drivers and opportunities for innovation

**Shipra Narang Suri**

**07 July 2021**

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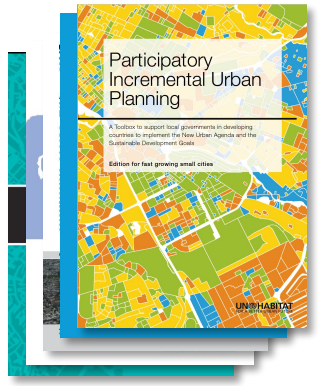
# Key issues in urban planning and management

- Integrated planning
- Evidence-based spatial analysis and planning
- Participatory mapping and planning
- Environment and social impact assessments
- Project finance and procurement
- Enforcement and monitoring
- Capacity and technical feasibility

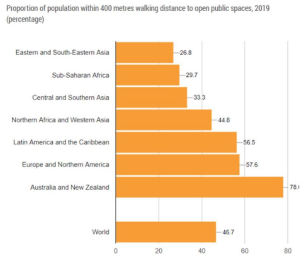



Guidelines and tools for integrated planing

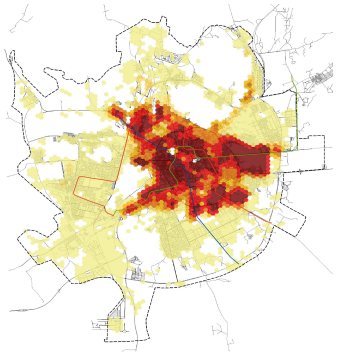
*Target 11.7: "By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities"*

The share of land allocated to streets and open spaces averaged only about 16 per cent globally, according to 2019 data from 610 cities in 95 countries.

Types:
Streets, Open Space and Public Facilities




Monitoring urban related SDGs

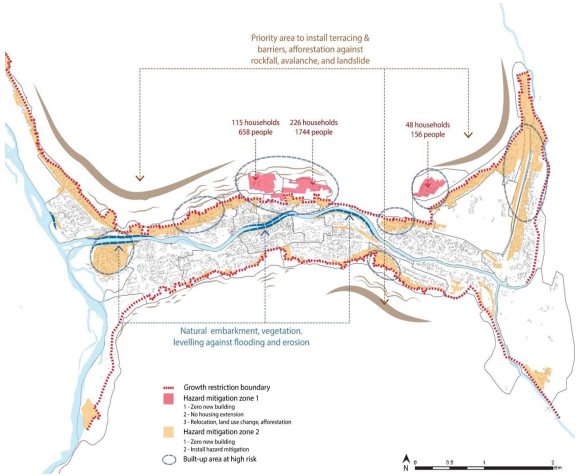


Evidence-based Spatial analysis and planning

# Data-driven urban planning and management

- Local, qualitative, geospatial urban data
- Socio-economic, disaggregated urban data
- Data governance and management
- Data protection and privacy
- Data ownership
- Technical capacity


Data collection public space city wide assessment




Data sets inform urban growth and hazard mitigation in Khorog

# Developing, using and scaling data-driven tools

## Developing tools:

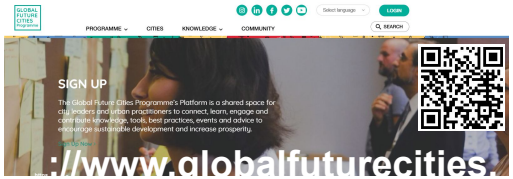
- Testing tools with stakeholders in different contexts
- Integrating existing tools
- Methods for cooperation with communities

## Using tools:

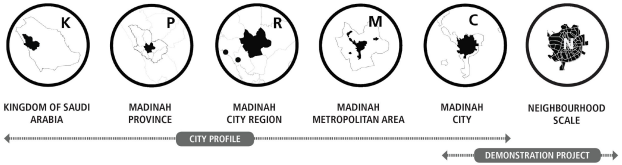
- Adapted to local context and capacity
- Capacity development to use tools and use data for analysis and planning

## Scaling tools:

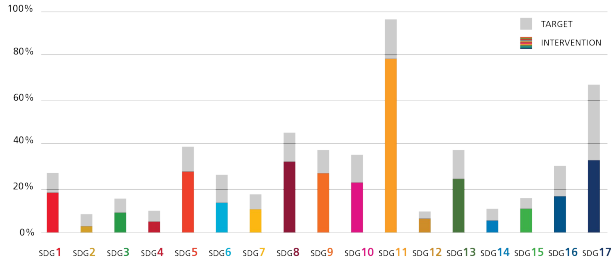
- Partnerships to understand needs and to promote
- Knowledge exchange
- Validation of global tools




Knowledge exchange platforms




Piloting plans and projects

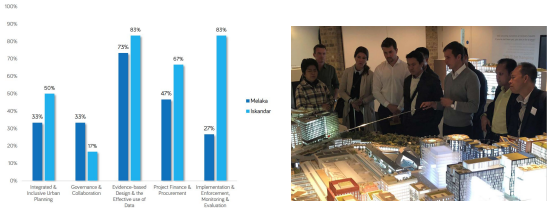



SDG project assessment tool

# Strategic partnerships to accelerate urban innovation

- Strategic urban planning Labs addressing rapid urbanization
- Innovation, data and frontier technologies for urban planning and management
- Multi sectoral planning programs
- Knowledge exchange platforms
- Capacity Development

Rapid planning studios





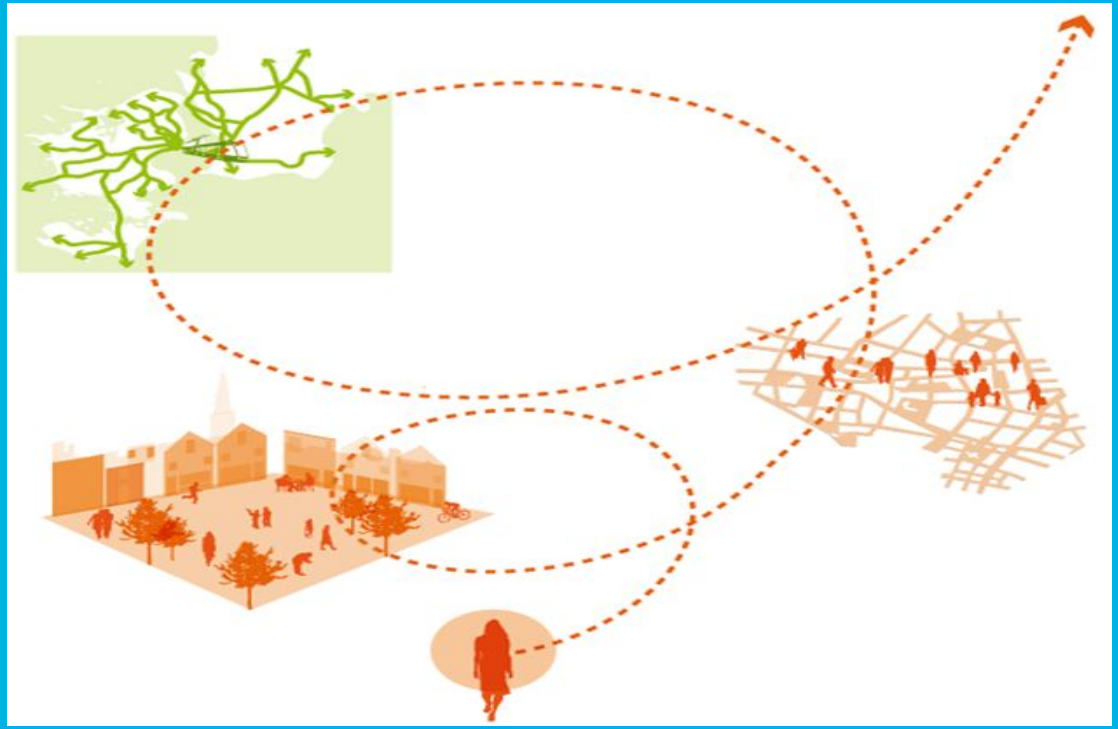

Capacity Development UK BEAG network

The United Nations Innovation Technology Accelerator for Cities

HAMBURG UNITAC

Innovation Accelerator

**Thank you!**



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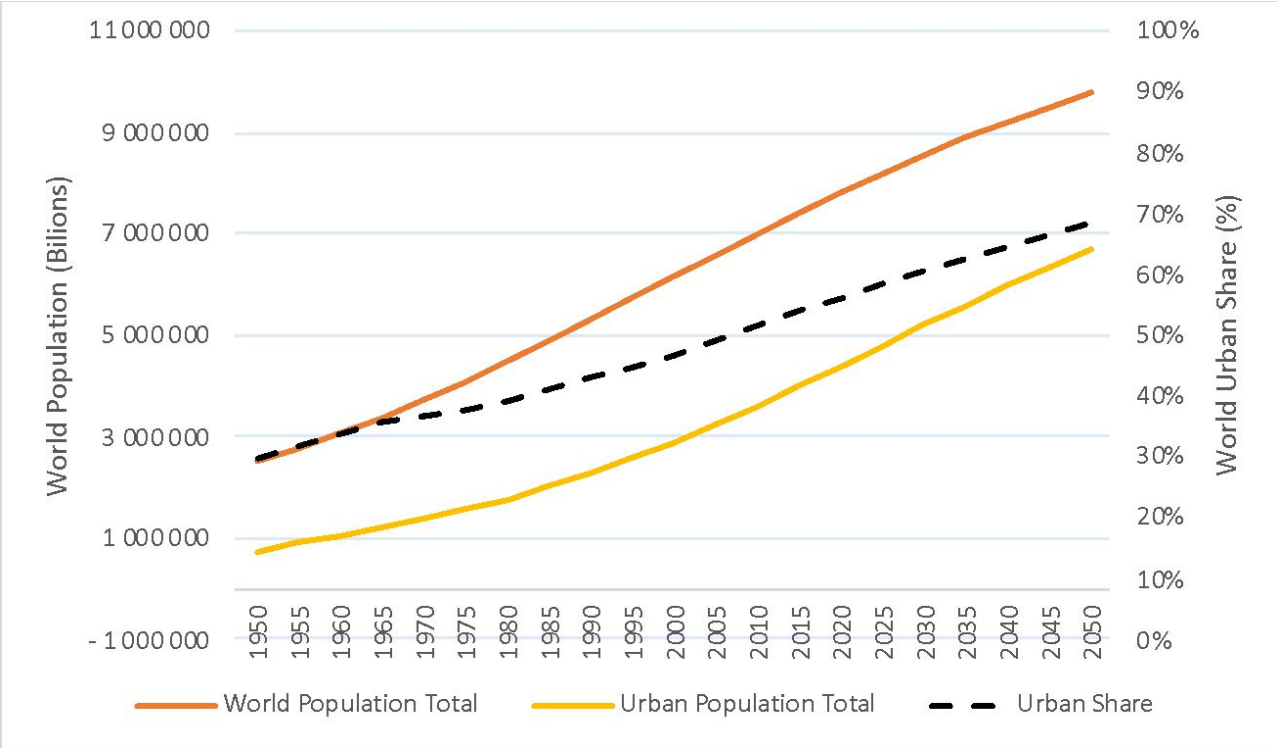
# Planning Lands for Rapid Urban Growth

The city of Shibam, Yemen

# The urbanization project is in its final stage




From 1990 – 2020:

46% increase in total population

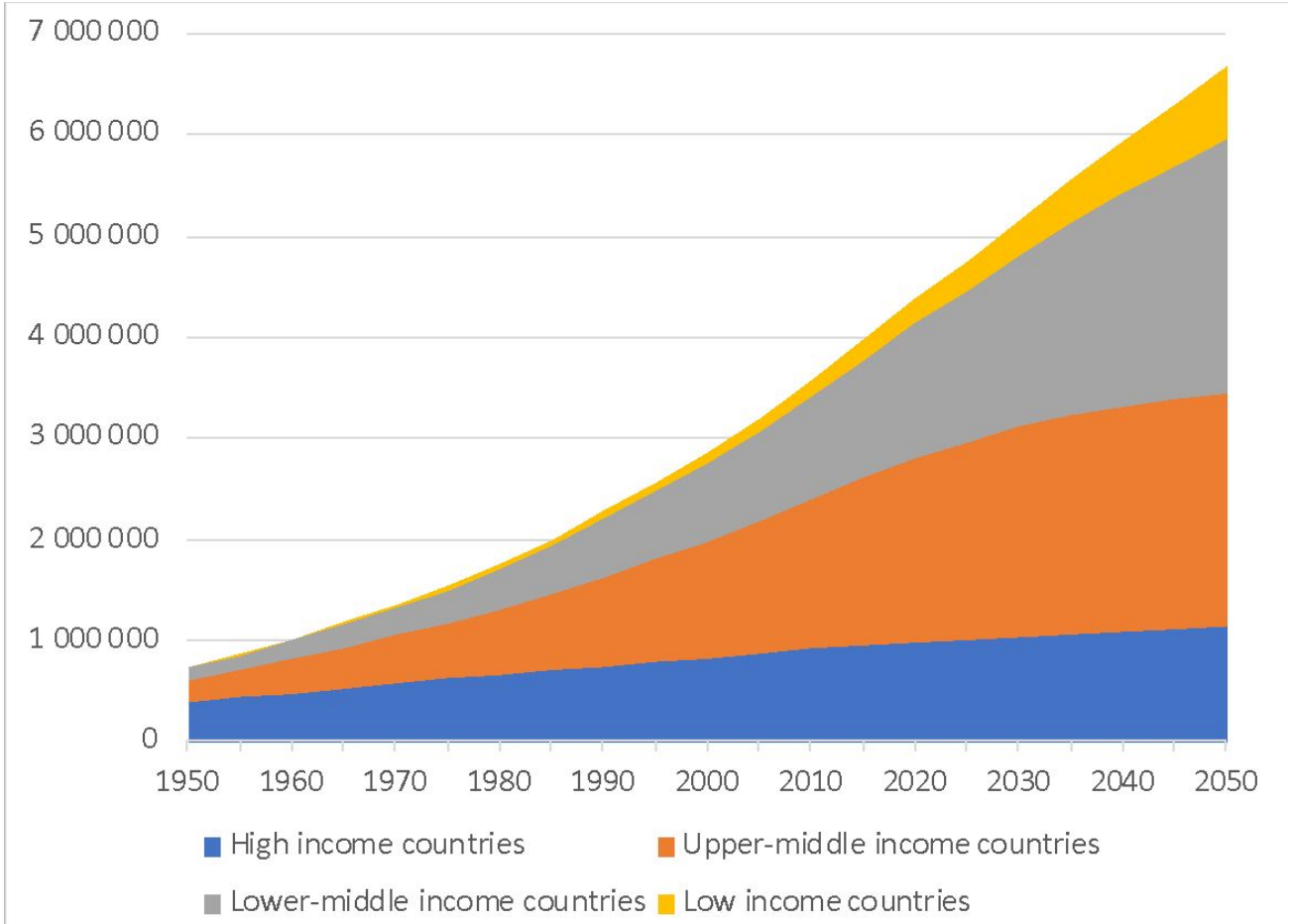
91% increase in urban population

From 2020 – 2050

25% increase in total population  53% increase in urban population

World Urbanization Prospects 2018, File 2

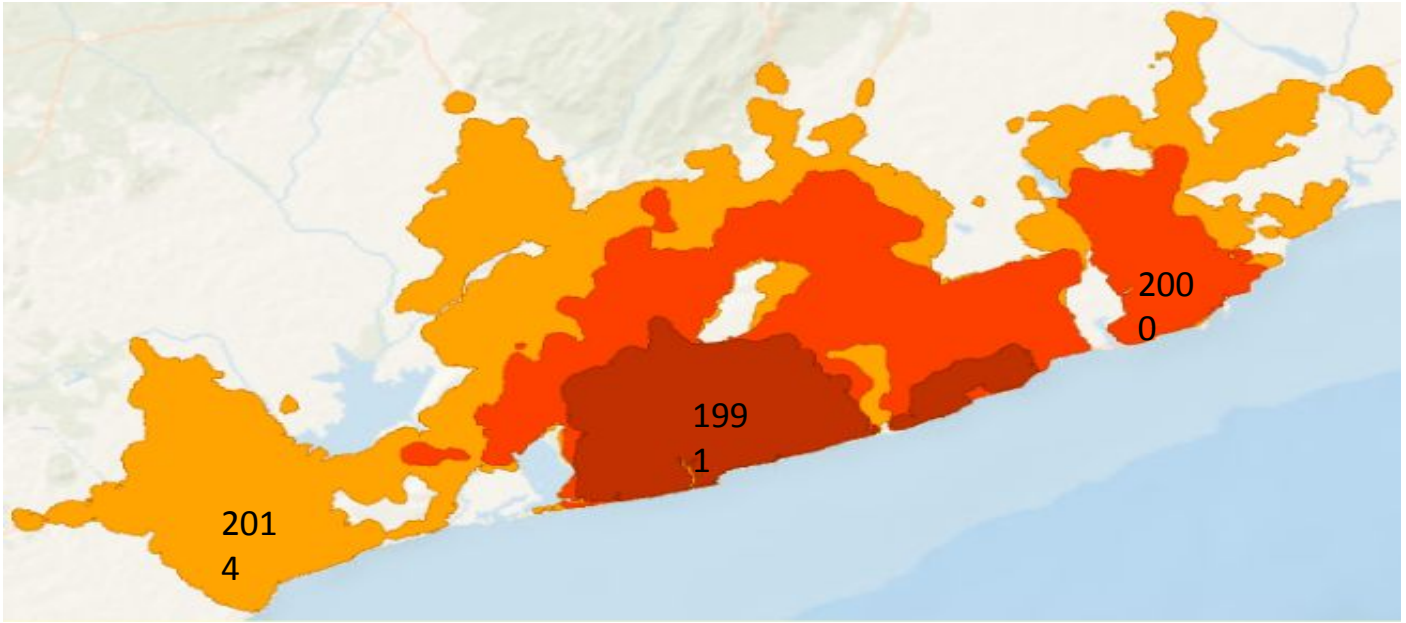
# Urbanization is now driven by migration




Sub-Saharan Africa and South and Central Asia will add 1.4 billion urban dwellers in the next 30 years, while the rest of the world combined will only add 907 million.

The urban population is growing faster than the total population in these places, which tells us that people are migrating from rural to urban areas.

# Growth in Population = Growth in Area

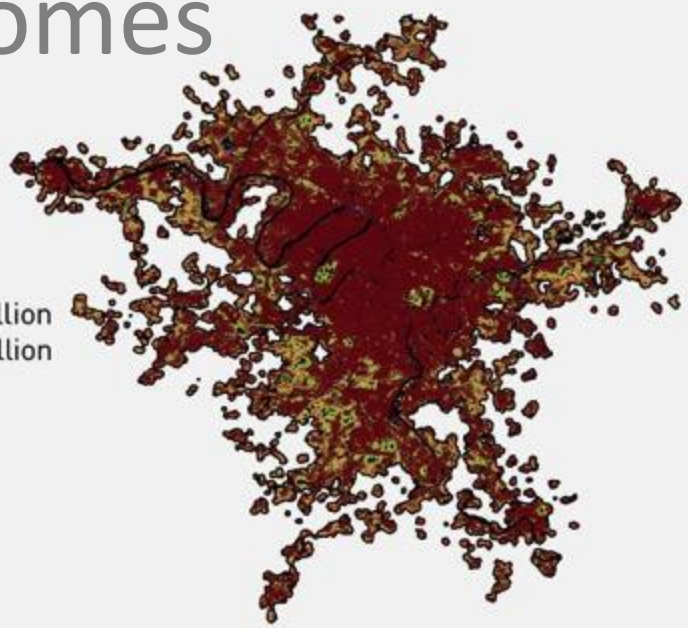



As cities add population, they also increase in area. Example: Since 1991, Accra Ghana has increased its population 3.4 times and its urban area 6.1 times

# This is driven by rising incomes

**Lagos, Nigeria, 2015**
Population: 11.4 million
City GDP: US$58 billion

**Paris, France, 2015**
Population: 11.2 million
City GDP: US$557 billion



In 2015, Paris had almost the same population but 10 times the GDP as that of Lagos. As a consequence Paris had 3.5 times the urban extent of Lagos.

On average in cities with 100k or more, between 1990 and 2015:

2x → 3x

Population increase

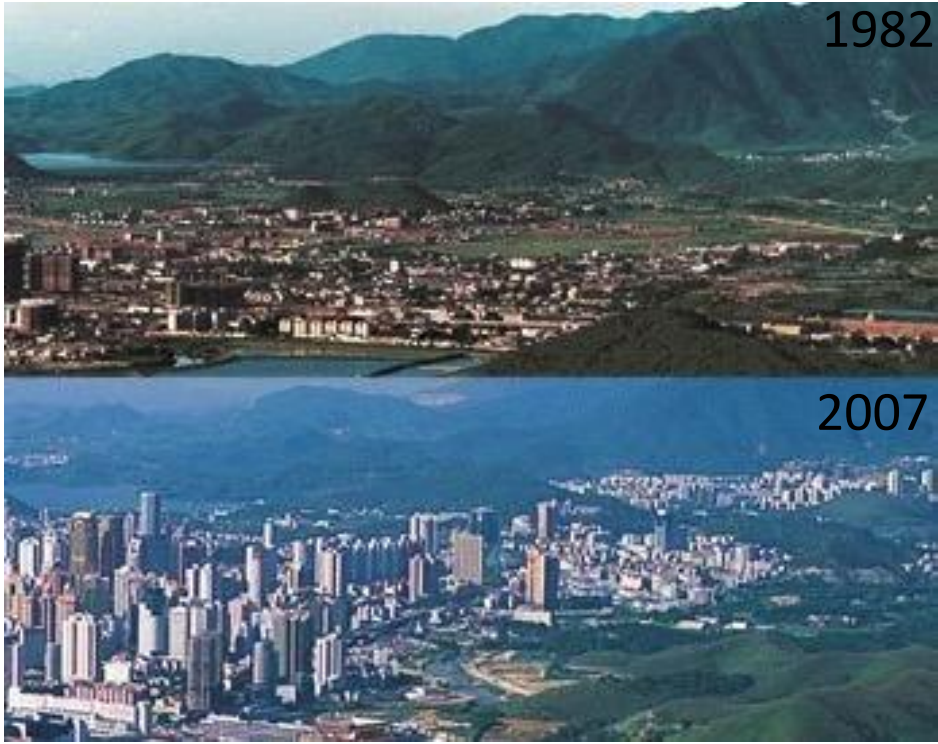
Area increase

# Cities both expand and densify

## Panama City, Panama


Images via: Skyscraper City, Brian Gratwicke

## Shenzhen, China




Credit: *Over Hong Kong* (2007), Kaysan Bartlett

# Of the population added between 1990 and 2014:

78%

**Went to newly developed areas - Expansion**

22%

**Went to existing areas of the city - Densification**

# Informality in expansion areas is rampant


Worldwide, from 1990 – 2015 60% of newly built residential areas were unplanned or were informal.

Many cities struggle to make land available at the correct scale – not enough land is made available in the right places.

People respond to this by creating informal settlements, where they can access land for housing.

The images above show the evolution of an informal settlement in Jinja, Uganda, from 2004 to 2020.

## DENSIFICATION

MAKING ROOM WITHIN THE EXISTING CITY



## ORDERLY URBAN EXPANSION

MAKING ROOM IN NEW AREAS

# THE MAKING ROOM PARADIGM

To address this challenge, we must make room for urban population growth – through densification in existing areas, and through orderly urban expansion in new areas.

# Key Concept: Land for Housing the Poor

- For poor people, especially new migrants to cities, the cost of land is the biggest obstacle to having a home.
- Actions that make land more accessible and more available help address the housing challenge for the poor more than almost any other actions.
- Making land accessible can include a range of activities, but the most basic one is ensuring that enough land is reachable from the city to keep the price low.
- The cheapest land in cities is always on the edge, or periphery. This is where the poor often settle.

# Key Concept: Accessibility = inclusion

- Without physical connectivity, social and economic inclusion is much more challenging
- Neighborhoods that aren't connected to the rest of the city risk becoming slums or poverty traps
- Neighborhoods that are connected can offer more opportunities to residents
- Installing new infrastructure in planned areas is 3 – 9x cheaper than retrofitting existing areas.

# Piloting new solutions

## Data and mapping of informal settlements in Lusaka, Zambia

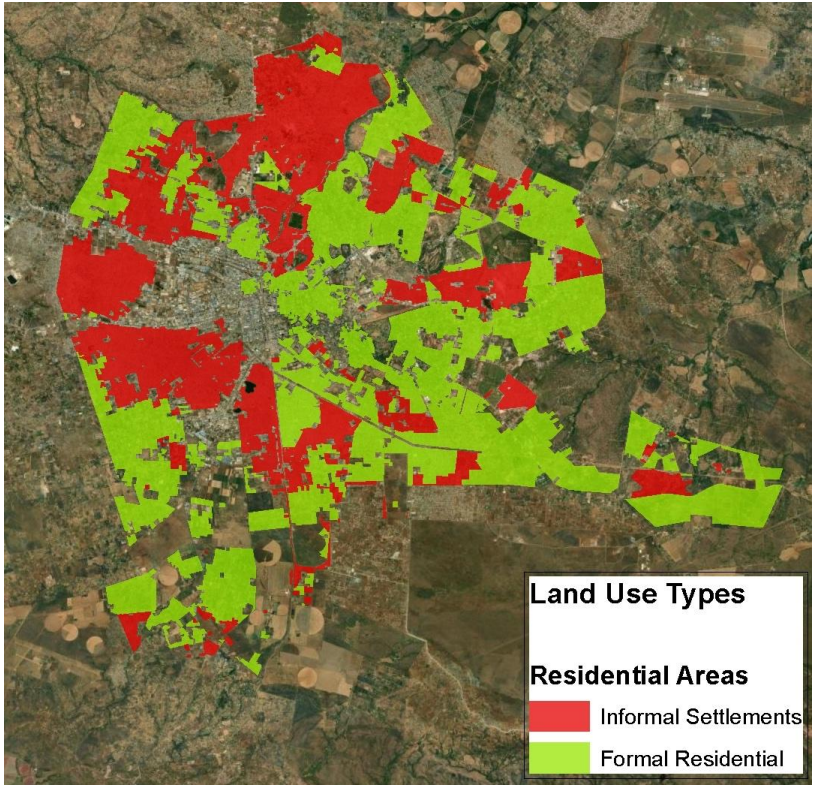
Partners: Commonwealth Association of Architects, International Growth Center, Lusaka City Council, Ordnance Su

**Major questions:**
Where are Lusaka's informal settlements located?
How have informal settlements in Lusaka grown?
What are the core characteristics of informal settlements in Lusaka?
How are informal settlements in Lusaka serviced?

**Techniques:** Satellite imagery analysis, machine learning, ground truthing, and secondary data sources.

**Theory of change:** Clear information about informal settlements will help the government identify areas that need infrastructure and services and make necessary investments.

Information about informal settlement growth rates will highlight the need for proactive planning on the urban periphery, and for measures to densify existing areas.



# Piloting new solutions

## Rapid Planning Toolkit

Partners: The Prince's Foundation, Commonwealth Association of Architects, New York University, Commonwealth Association of Planners, Commonwealth Local Government Forum

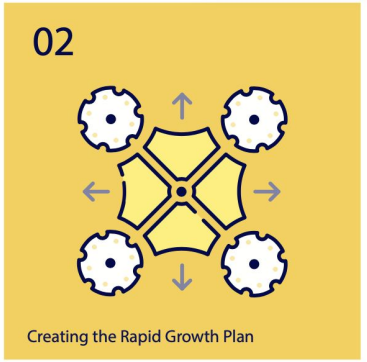
**Major question:** How can cities in developing countries make real plans on the ground that actually affect how the city grows?

**Techniques:**

1. Collaboration among different actors
2. Simplifying the planning process, but broadening the scope
3. Implementing plans through activities that engage citizens
4. Creating demonstration projects for neighborhoods

**Theory of change:** Planning for urban growth must be simple and collaborative, with a strong focus on the political, economic, social and environmental realities of a given place.

The toolkit will take ambiguity out of the planning process and make it simpler for cities to start planning for rapid growth.



# Piloting new solutions

## Cities and Migration: Urban Expansion in Uganda and Ethiopia

Partners: The Cities Alliance, Swiss Development Cooperation, Local and national governments in Uganda and Ethiopia

**Major question:** How can planning for urban expansion be harnessed to meet the needs of migrants and refugees who are moving to cities?

**Techniques:**

1. Clear and simple trainings at the local level
2. Institutionalization at the national level
3. Building an agenda for implementation at the grassroots level

**Theory of change:** Cities that plan for urban growth will be more productive, inclusive and sustainable, offering more opportunities to rural to urban migrants and better harnessing the potential of cities to enact positive change.

This program provides direct training and support to municipalities that are interested in supporting orderly and inclusive migration.

# What makes a good solution?

- Acknowledges capacity limitations and the institutional / political economy context
- Helps governments prioritize and structure investments
- Empowers local officials and does not require long-term engagement of outside experts
- Addresses long-term needs
- Faces real priorities for citizens
- Contains a sense of urgency
- Works at scale, meaning it can expand to meet the problem
- Supports activities that cities and people are already doing, that are already working, such as building roads, housing themselves incrementally, and putting in water pipes and drainage
- Is supported with data and evidence
- Focuses on creating results on the ground

# Thank you!

# Questions?

http://marroninstitute.nyu.edu
www.atlasofurbanexpansion.org


* * *

# GLOBAL URBAN PLANNING.

**BY: KILION NYAMBUGA,**
**RESEARCH AND PLANNING, SDI – KENYA**
www.muungano.net
07.07.2021

Challenges and Needs for the Urban Slums.

# URBAN SLUMS – CHARACTER.


- Poor housing structure.
- Very high density – Overcrowding.
- Inadequate access to basic services.
- Insecure land tenure (private lands, public, utility reserve) – limiting government investments (policies) in:
  - service provision,
  - infrastructure upgrade
  - Slum upgrading initiatives etc.

sdi. kenya

# WHAT WAY? – PIECEMEAL VS PLANNED INTERVENTION?

- Several initiatives (at settlement, city level) to address slum challenges/issues – with less success.
- An integrated planning approach in the upgrading of informal settlement has been explored (https://www.muungano.net/about-the-mukuru-spa).
- Its success requires accurate and up to date data (city scale?).
- Little to no access to accurate and up-to-date data on slums by urban practitioners/planning authorities – to aid in decision making/planning (slums boundaries, base maps, services infrastructure gaps etc)

sdi. kenya

# THE BARRIER

Resource Constraint – financial and human resources for continuous collection and updating of data.

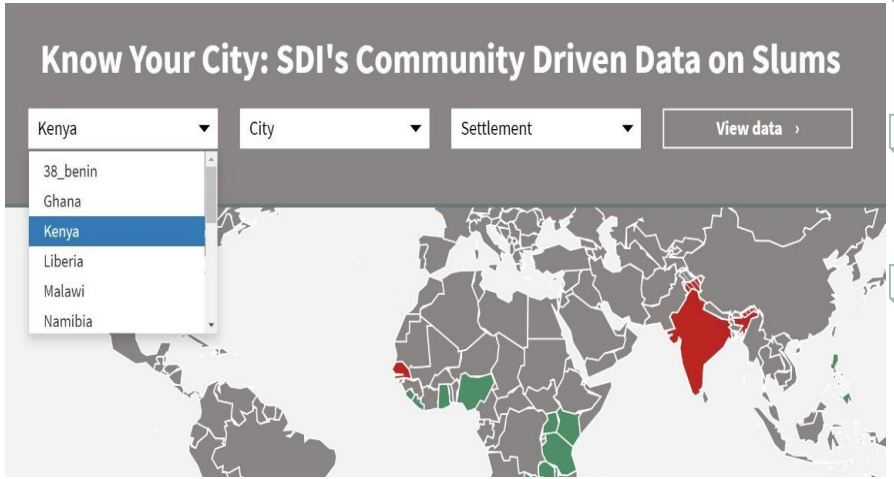
- Rapid changes in settlement forms/character – fire outbreak, evictions etc.

Capacity Constraint – Inadequate capacity at city level to address the informalities of slum upgrading.

Technological innovation gap – Data gathering, planning/scenario modelling.

sdi. kenya

# OPPORTUNITY FOR PLANNING – URBAN SLUMS?




- Need for technological advancement in capturing spatial data at scale.
- Platform for easier access to settlement data e.g. www.knowyourcity.info
- Tools for modelling of scenarios in planning – e.g. settlement reblocking, redevelopment, infrastructure improvement etc. and the implications.

sdi. kenya

# TECHNOLOGICAL INNOVATIONS - CONSIDERATIONS

- Technological innovations to respond to data access gaps and tools for modelling/planning – needs to consider all users (urban practitioners/planners and the community alike).
- Community/public participation is quite critical – ownership and success.
- Cost effective – affordable to community users.
- Scale – how fast and to what extent (settlement vs city scale).

sdi. kenya

# THANKS

Photos Courtesy: Muungano Wa Wanavijiji/SDI-Kenya.

www.muungano.net

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**THANK YOU FOR JOINING. ANY QUESTIONS PLEASE EMAIL:**
INFO@COMMONWEALTHSUSTAINABLECITIES.ORG