Asia-Pacific Housing Forum

Powering collaboration for housing impact

Using data to spark housing action

Approaching data for action

September 2019

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Cadasta Foundation

Urban Communities and Housing

Urban Communities and Housing

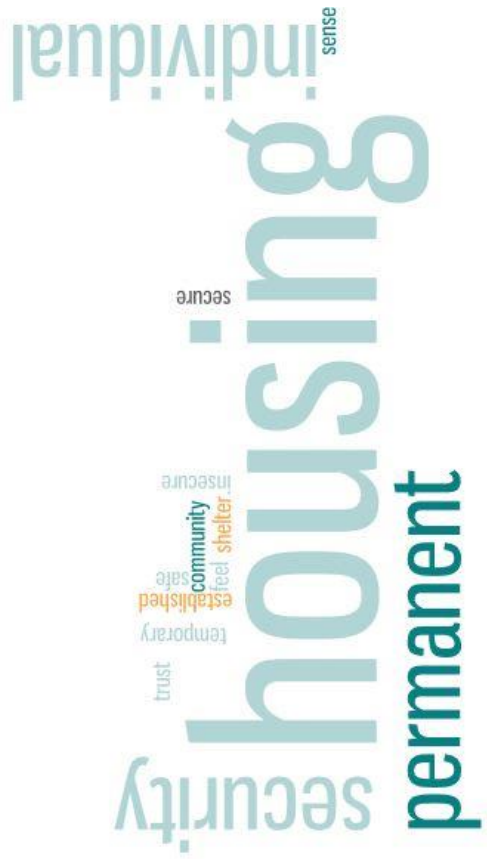
Housing can be permanent or temporary.

Housing is about security, or even a sense of security.

Security can be strengthened by the community and supported by governments.

Urban Communities and Housing

If an individual does not feel safe, then are they really secure? If an individual does not trust that their housing is permanent, do they feel secure?



Urban Communities and Housing

More than 800 million people currently live in informal, insecure urban communities worldwide.

Urban Communities and Housing

Land rights are essential to being formally recognized, feeling secure, and having access to many public and private services

When is data useful?

When is data useful?

Without solid and appropriate questions,
is data useful?

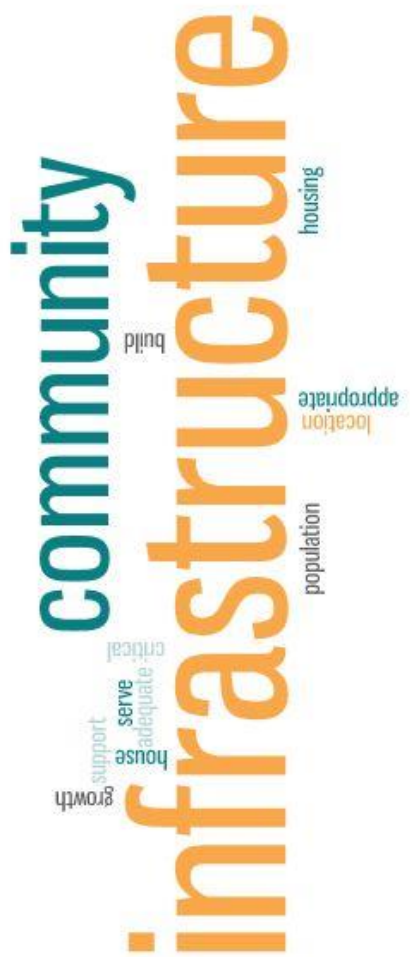
What answers do we want data to give us?

What answers do we want data to give us?

- Where do people live?
- Why do people live there?
- What is the population density of an area?
- Are there enough houses for the amount of people in a community?

What answers do we want data to give us?

- Where is an appropriate location to build a house, community, or infrastructure?
- Is there adequate critical infrastructure to serve th population?
- How will a community grow in terms of housing and the infrastructure to support it?

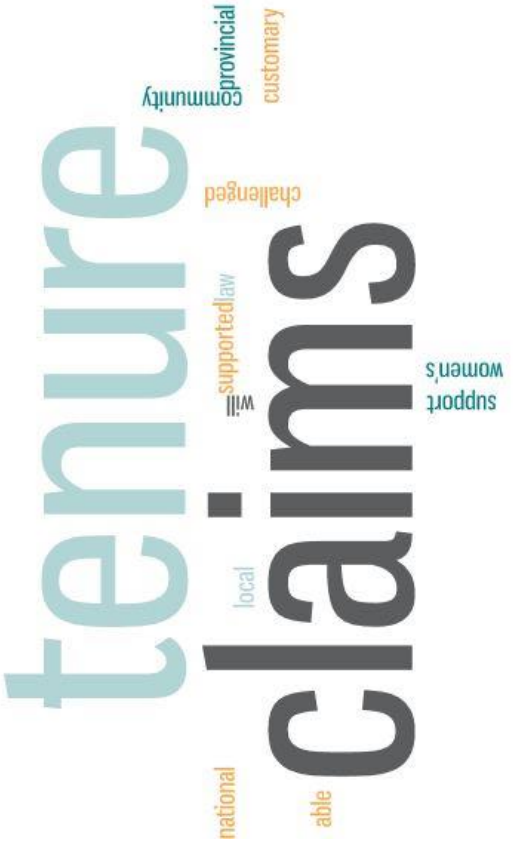


What answers do we want data to give us?

- On average, how far do individuals have to walk, bike, or travel to access water?
- What is an individual's ease of access to healthcare, education, or even basic services?
- Does an individual’s house have electricity? Why or why not?

What answers do we want data to give us?

- Will the community be able to support its claims to tenure if challenged?
- Are women's claims to tenure supported by customary, local, provincial, or national law(s)?



Understanding the questions we want to answer

Understanding the questions we want to answer

- Ultimately, if we do not know which questions to ask, then do we really understand the context?
- If we do not know which questions are most appropriate, can we truly assist communities in which we work?

Technology and Community Engagement and Empowerment

Data Collection and Analysis

Data Collection and Analysis

Data Collection and Analysis

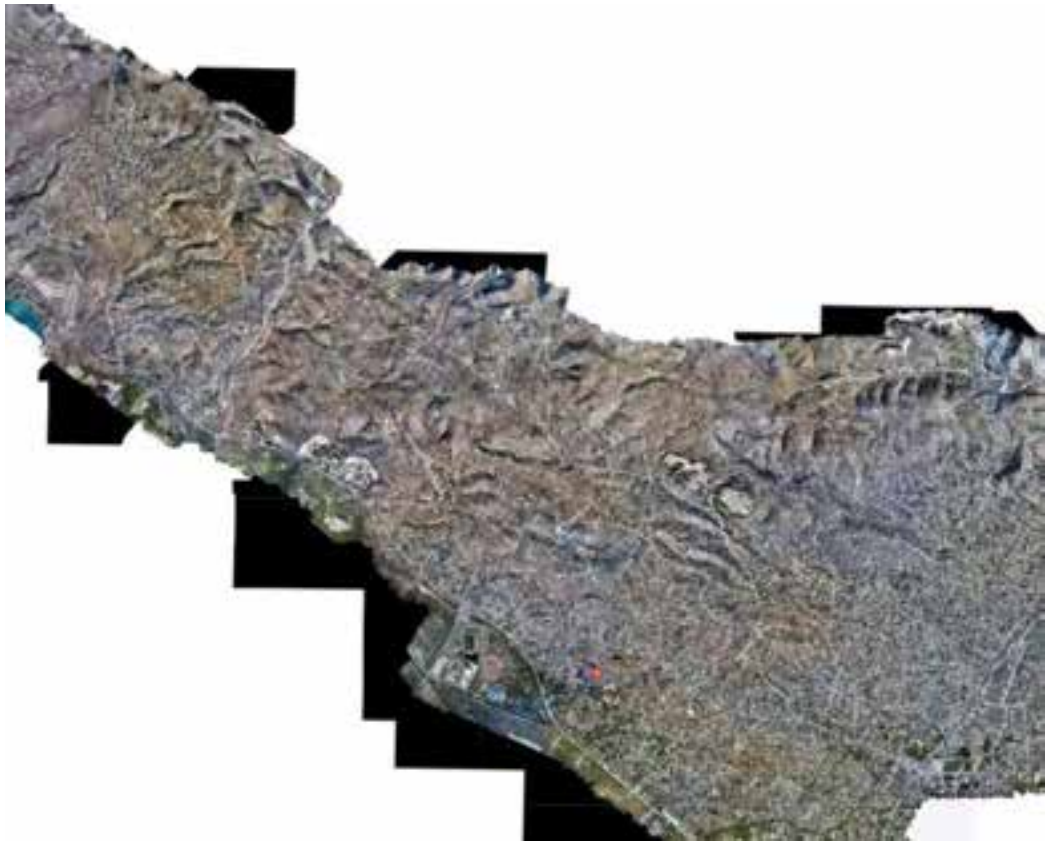
Surveys can be used to ask questions to create datasets

Data Collection and Analysis

Data Collection and Analysis

Maps and tables can be used to ask questions of collected datasets

Data Collection and Analysis



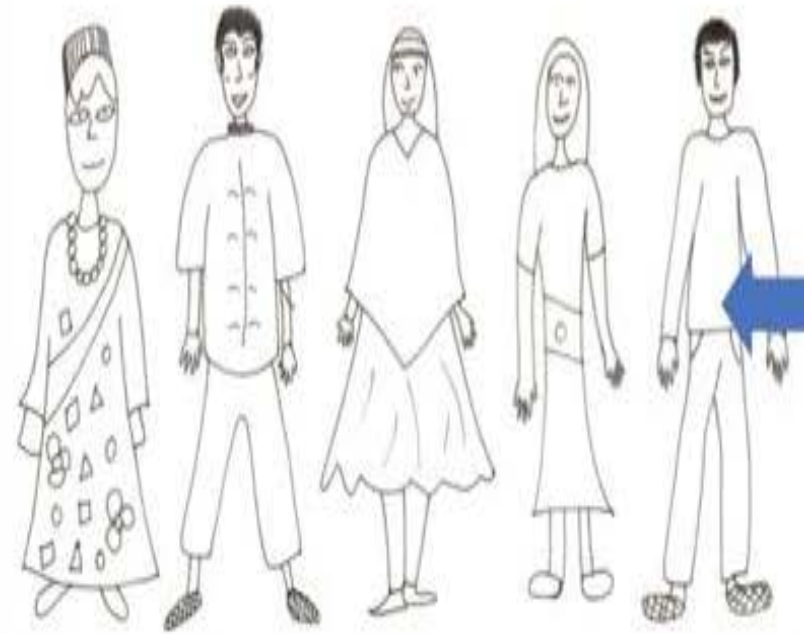
Drone imagery can be used to validate on-the-ground realities of collected datasets.

Data Collection and Analysis

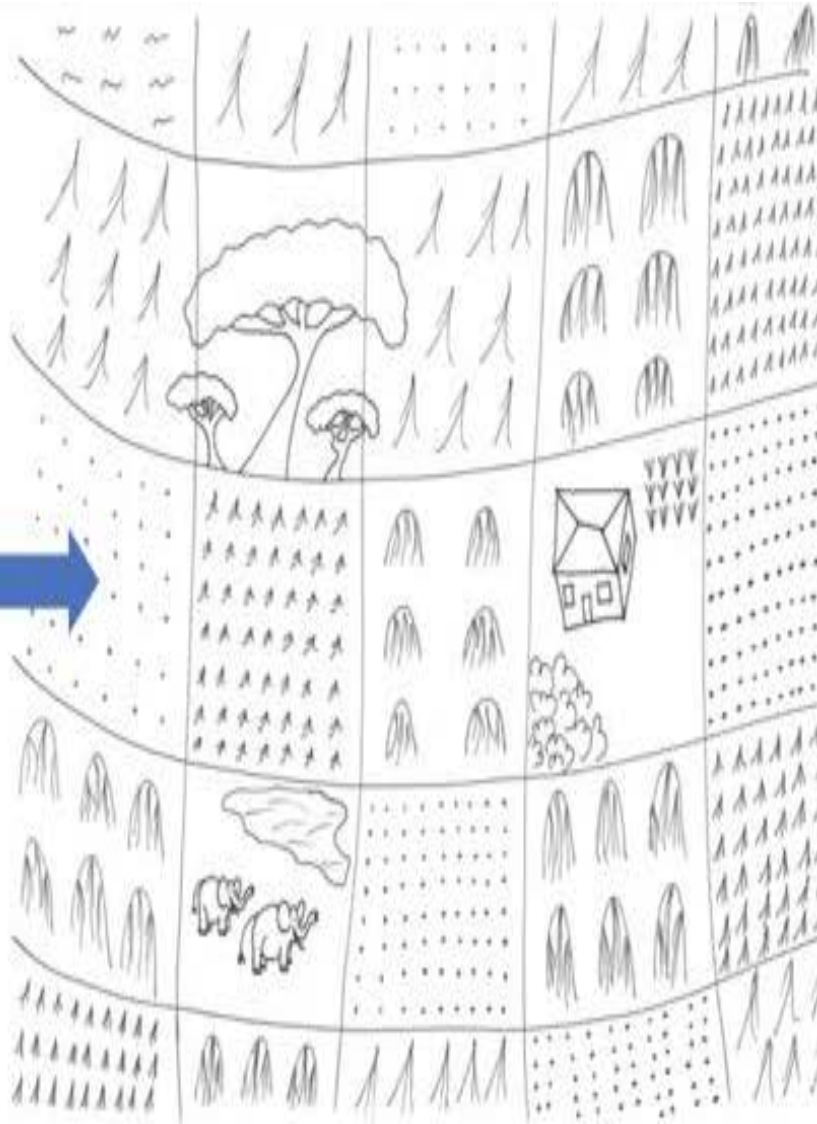
GNSS, or GPS, devices can increase accuracy of data collection of houses and land.

Data Collection and Analysis

Computers and software solutions can aid in data analysis.



Social Tenure



Challenges and Results

Informal or Parallel Registry

The Challenge:

Documentation of Customary Rights by Legitimate Authority

The Tools

The Result

Community map with documented customary rights at +/- 5 Meter Accuracy

Advocacy and Planning

The Challenge:

Advocating for Ethnic & Indigenous Land Rights

The Tools

The Result

Identification of Community Boundaries, Ongoing Monitoring & Advocacy for Community Rights

Intermediate Steps Towards Formalization

The Challenge:

How to formalize rights for slum dwellers in Odisha State, India.

The Tools:

The Result

Field team, using a combination of drone imagery and Cadasta applications successfully documented over 125,000 households

Intermediate Steps Towards Formalization

The Challenge:

Rural Smallholders and Value Chains

The Tools:

The Result

Field team, using a combination of drone imagery and Cadasta applications successfully documented over 125,000 households

Cadasta Use Case:

Tata Trusts | Odisha, India

In the **Indian state of Odisha,** government officials made international history and headlines with the **Odisha Liveable Habitat Mission** which utilizes Cadasta's tools to identify, map, and issue formal land certificates to residents of urban informal settlements. Using drone imagery, community data collectors, and Cadasta's technology, this ambitious program demonstrated the potential of bottom-up data collection and resulted in the issuance of 60,000 official certificates of occupancy. By 2020, an estimated 1 million people will have been documented by the program, enabling these residents to invest in their properties and businesses without fear of eviction.

Cyclone Fani, categorized as an Extremely Severe Cyclonic Storm made landfall earlier this year, affecting over 15 million people in Odisha Sate alone and contributed to at least 8 million USD in damage.

Cadasta Use Case:

Pradan | Odisha, Cadasta

In the **Indian state of Odisha**, Cadasta is partnering with the Indian nonprofit, **Pradan**, to map, document, and advocate for community forest rights. Pradan works with local communities in Odisha state that are eligible to apply for government recognition of rights to forest reserves through the Recognition of Forest Rights Act of 2006 and the Community Forest Resource Rights (CFRR). To do so, Pradan is using Cadasta to map and demarcate agreed-upon forest boundaries to develop a system of protection for the community forest areas. This approach was piloted in one community area with documented individual farms and properties. Pradan now hopes to expand the project throughout the state.

What are
YOUR
Questions?

Habitat for Humanity® Cambodia

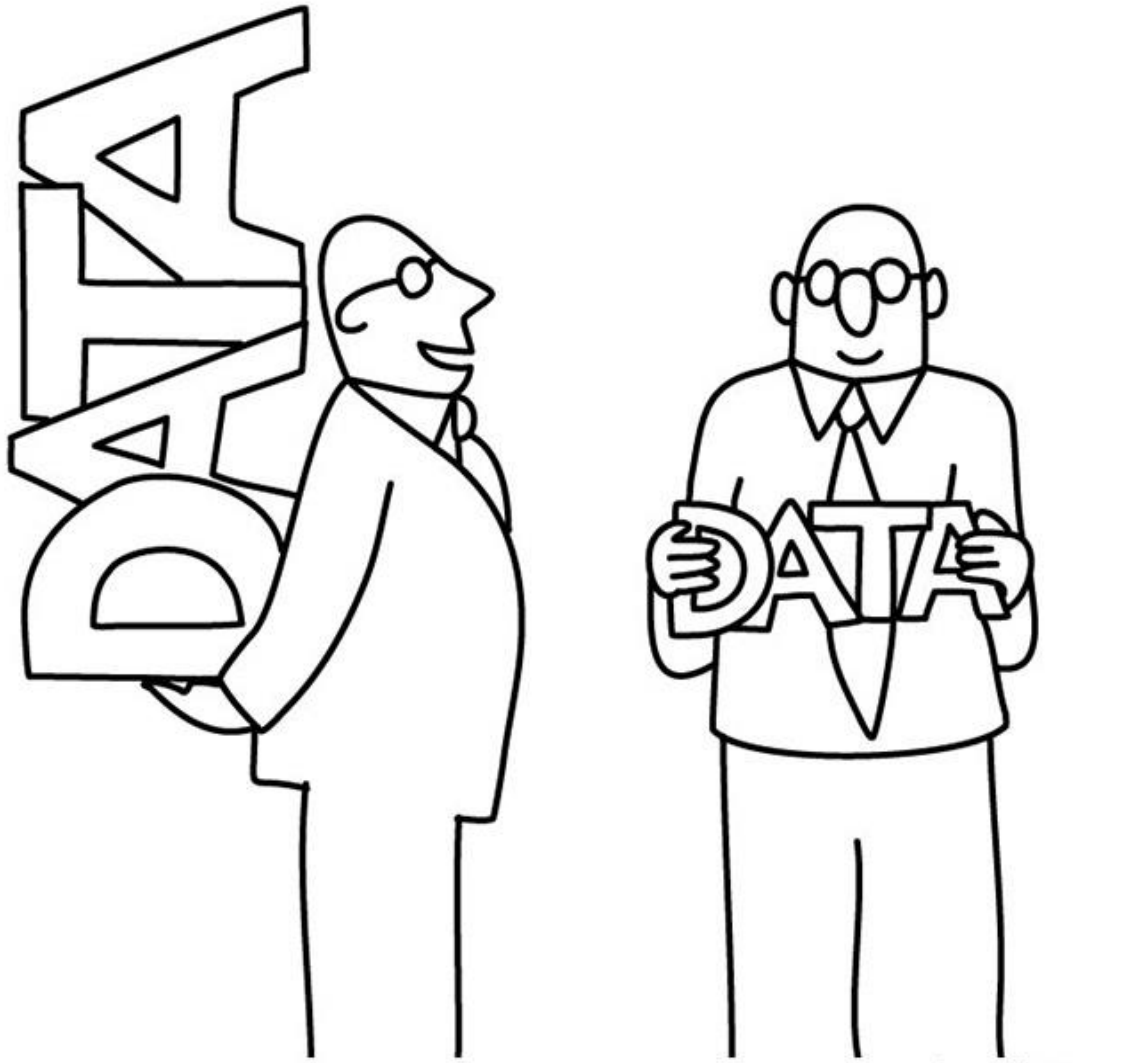
Land and Housing Actions Sparked by Spatial Planning: A Case of Spatial Planning in a Secondary City

Presented by:

Bernadette Bolo-Duthy

National Director, HFH Cambodia

Asia-Pacific Housing Forum



"I think you'll find that mine is bigger..."

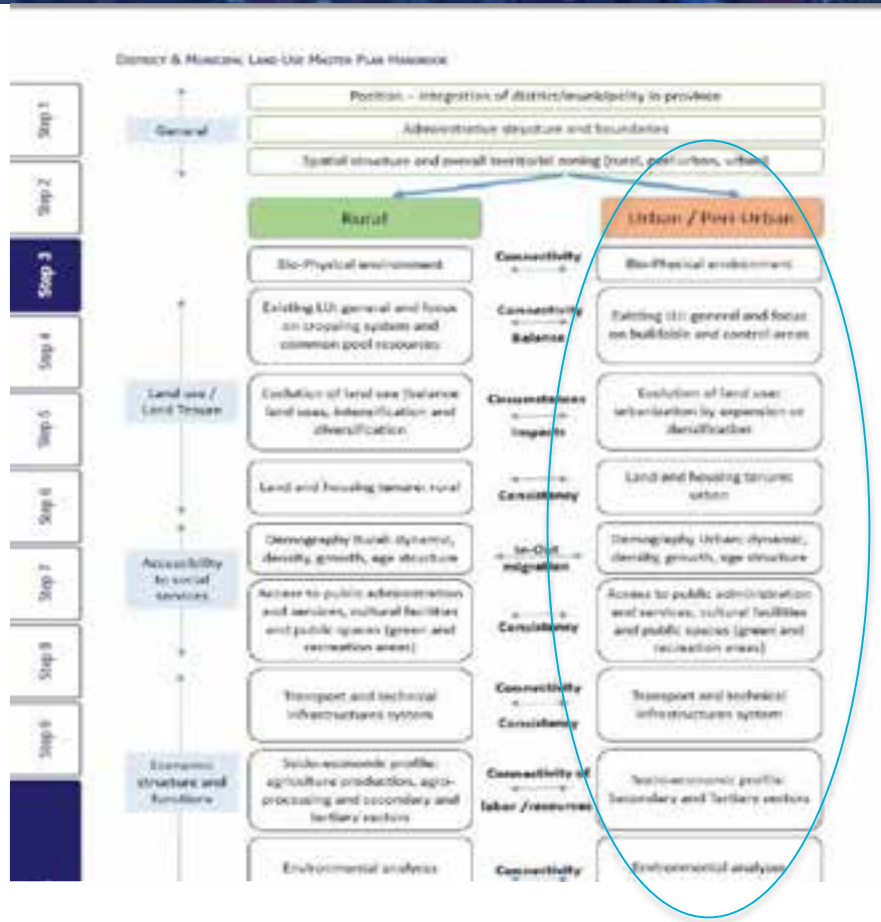
Battambang

- Secondary city
- Rice bowl
- 150,000 Urban Population
- 1M Total Population

DED/GIZ/BTB Master Planning Timeline – Over a Decade

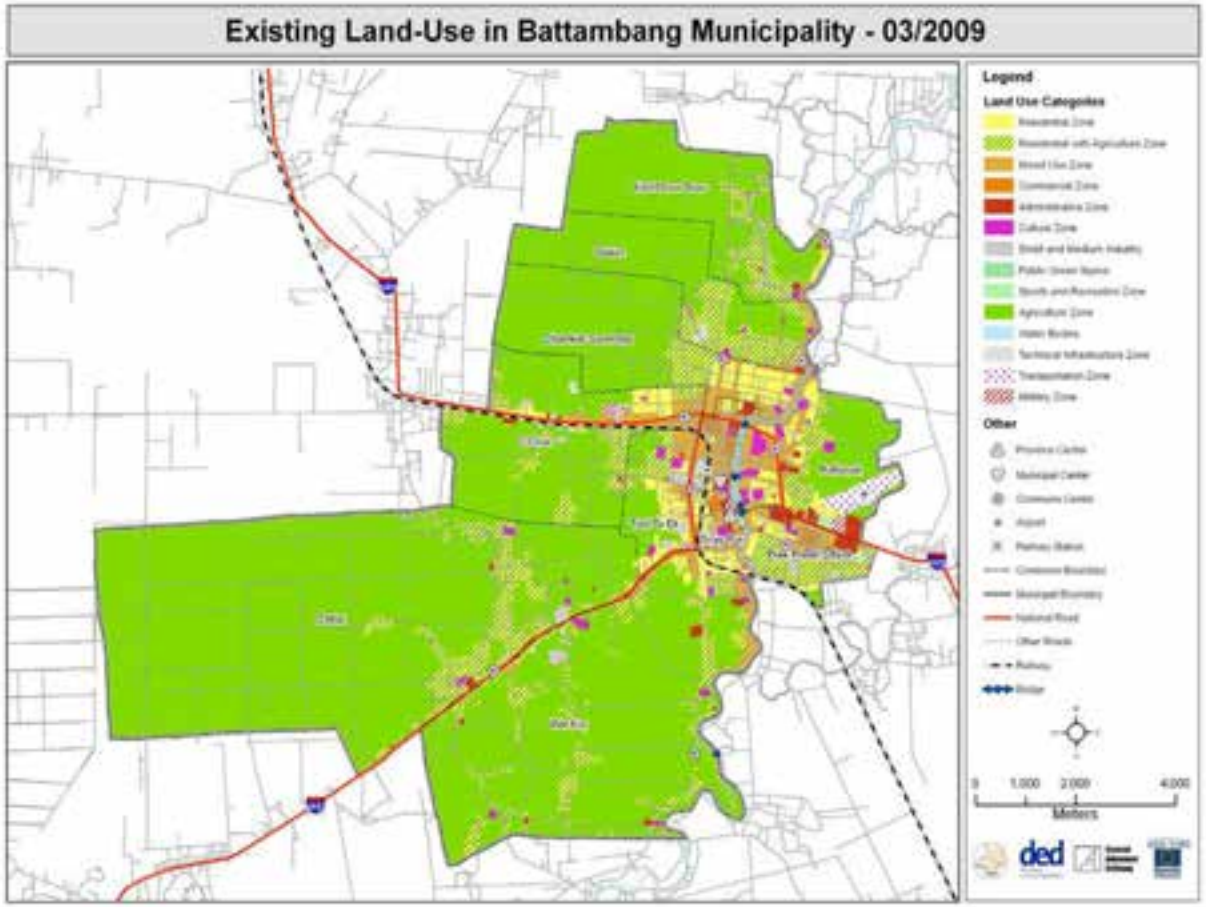
- 2003 – Master Plan Project started (RGC decentralization)
- 2009 – First Municipal Land Use Plan finalised
- 2011 - National Spatial Planning Policy adopted
- 2012 – Provincial Spatial Plan developed
- 2015 - Municipal Land Use Plan Approved

Collected and generated heaps of data

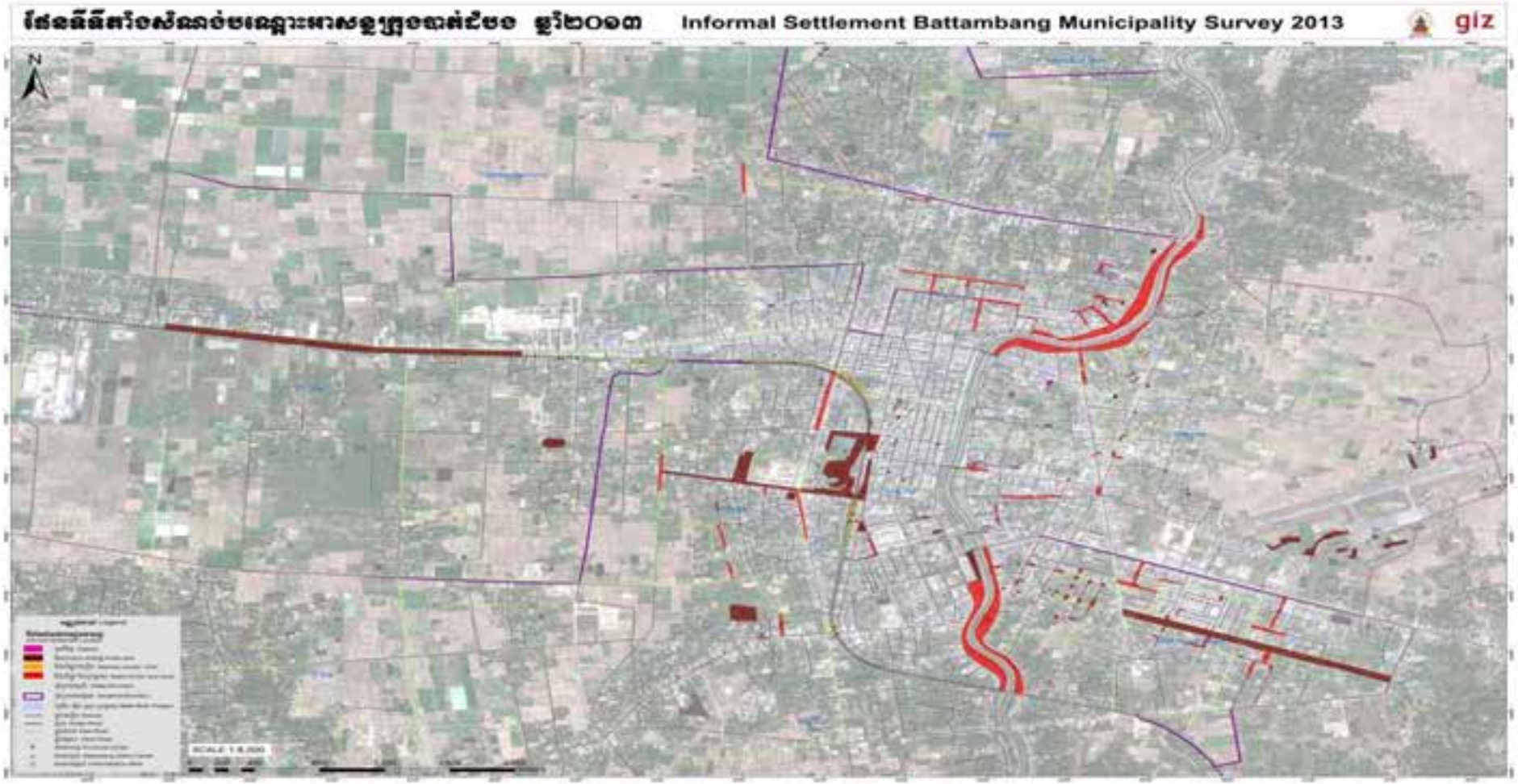


Habitat for Humanity Cambodia

Snapshot of existing uses

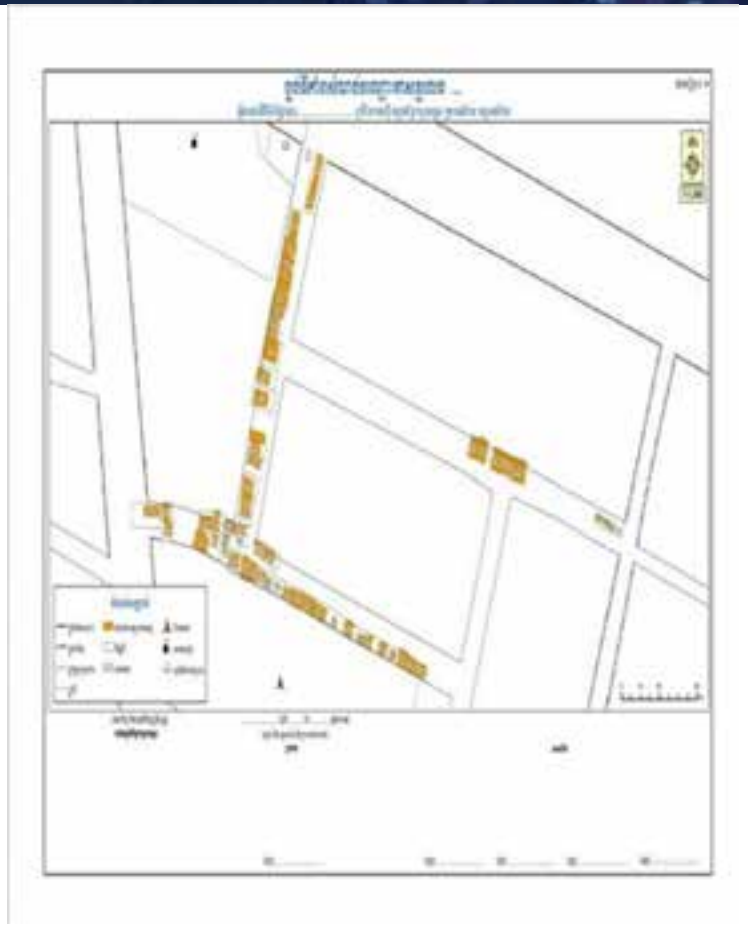


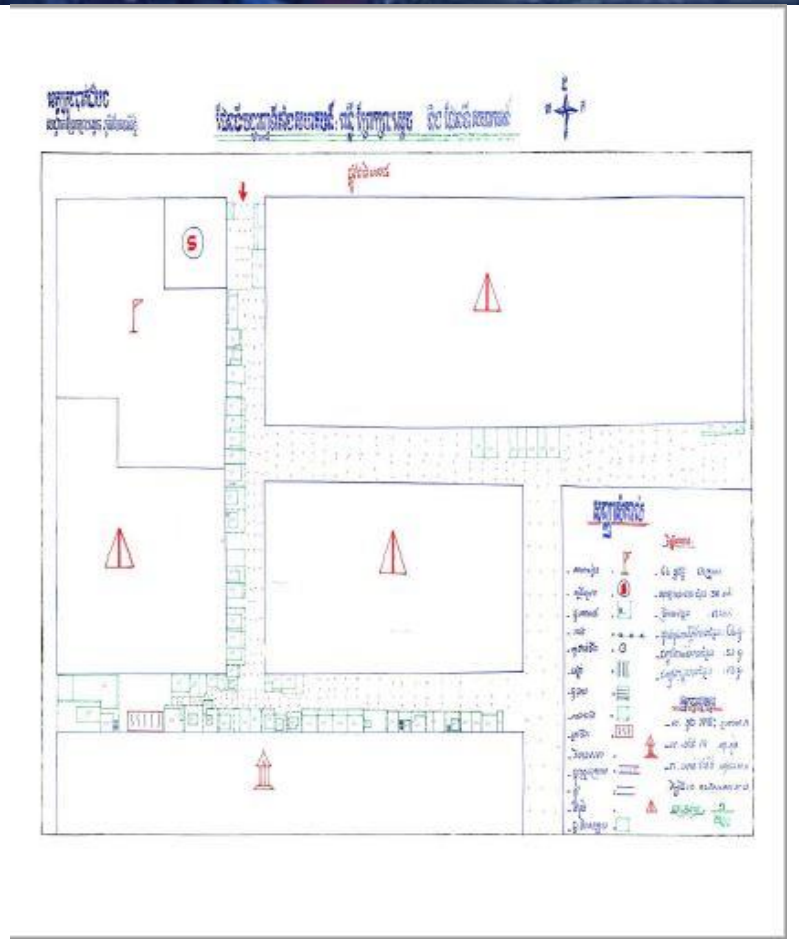
Snapshot of the scale and nature of informality



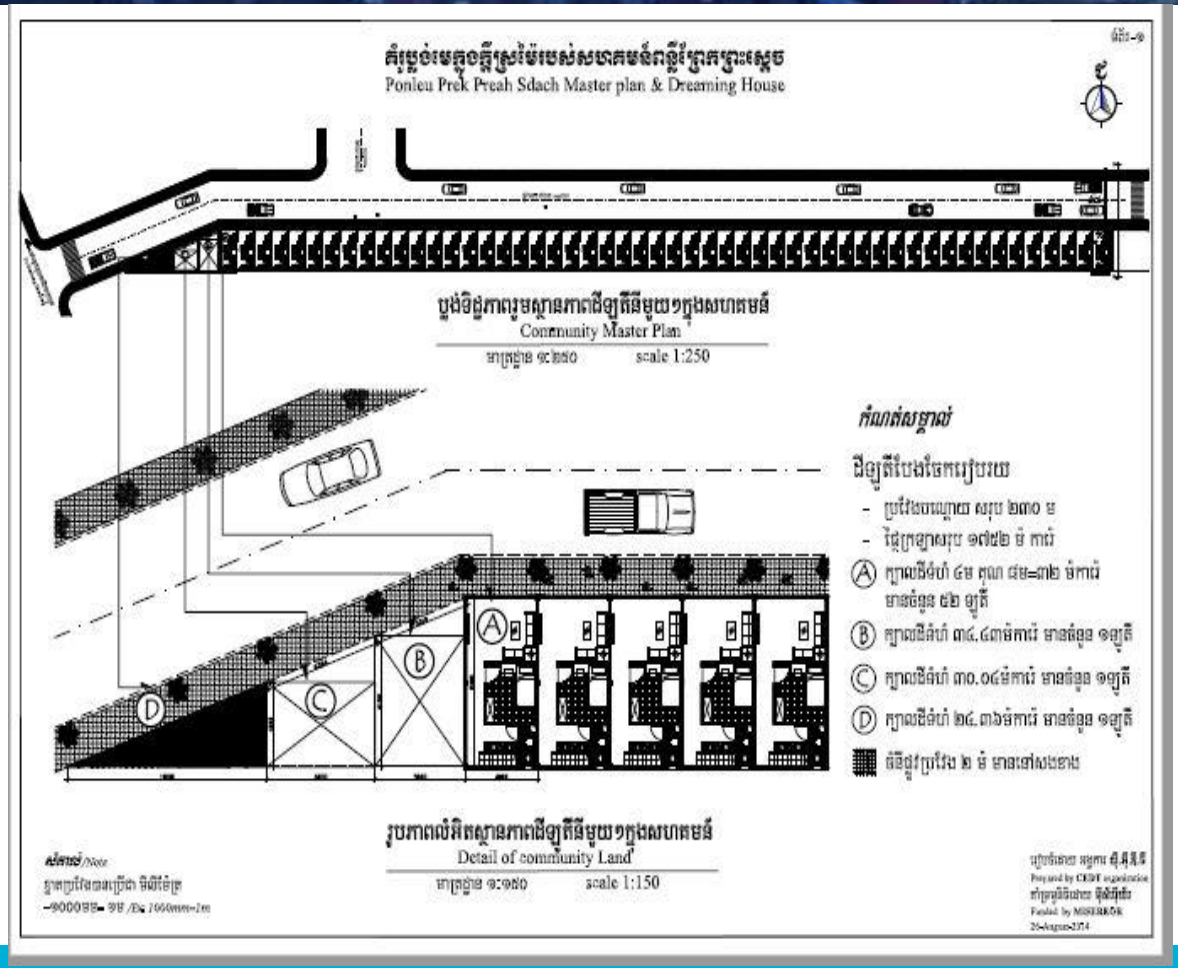
Habitat for Humanity Cambodia

Access to maps led to more maps





… led to more collaborations & dreams



Habitat for Humanity Cambodia

Land and Housing Initiatives

- Organizing and Planning
  - formed savings groups and self-help groups in informal settlements
  - conducted community surveys and mappings
  - established networks and learning from others
- Implementation
  - Minor upgrading to demonstrate community capacity; and intent to be a development partner
  - Preparation of alternative plans
  - Familiarized with land laws

Land and Housing Initiatives

- Negotiations with Government for land
  - Land sharing (made road smaller)
  - Voluntary resettlement
  - On-site upgrading

Land and Housing Outcomes

- Opened the way for meaningful involvement in informal settlements
- ‘Experiencing data’ and documentation led objectivity
- Improved cooperation between the municipal administration, civil society and settlement representatives.
- Legal and practical solutions have already been found for four settlements.
- Enabling them to remain on what was previously state land. Progress has been made in regard to informal settlements.

Land and Housing Outcomes

- The municipality has not forced evictions and/or relocations of informal settlers.
- Funding for community organizing of informal settlements, participatory approaches, testing of land laws, capacity building of government and civil society actors
- Implement the national government's Circular 03 on the regulation of informal settlements, supported by a number of NGOs

Land and Housing Outcomes

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City-wide MappingMethodology

1. ONA
2. GIS & GPS
3. Desk review
4. Focus group discussions
5. IS survey

Who are involved?

Institution	Role
Community Leaders	Data collection
Battambang Municipality	(Approval and encourage local level to support)
Sangkat and Phum Council	(Make appointment with the community)
Community Development Foundation	Develop questionnaires and lead the process
Housing Office of Battambang Province	Technical support and community authorities and community)

Importance of the mapping

- Availability of data to be used by various stakeholders to impact the city positively
- Inform government about the latest data and easy for them to manage the community
- Community know how they should manage their people based on the information gathered
- The information will be accurate

Use of the information

- It is used to plan for the land use and other development priority.
- This information is used to share internally and externally for the benefit of the people.

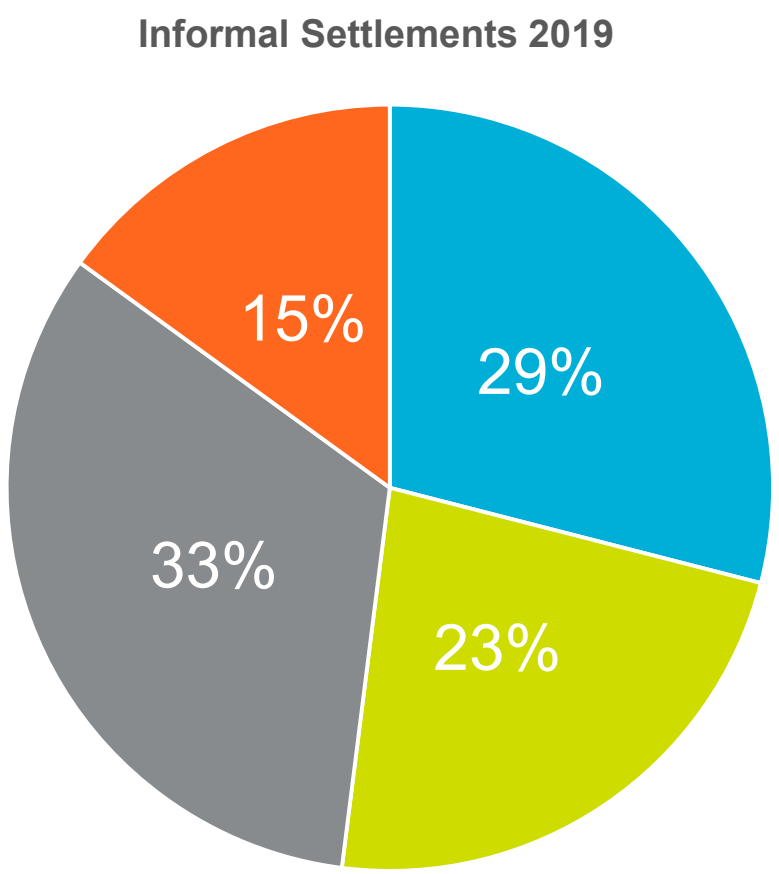
What have been done on the information?

Key findings

Description	Number
60 IS	Own their houses
Total houses	3303
Total households	3817
Total population	16,072

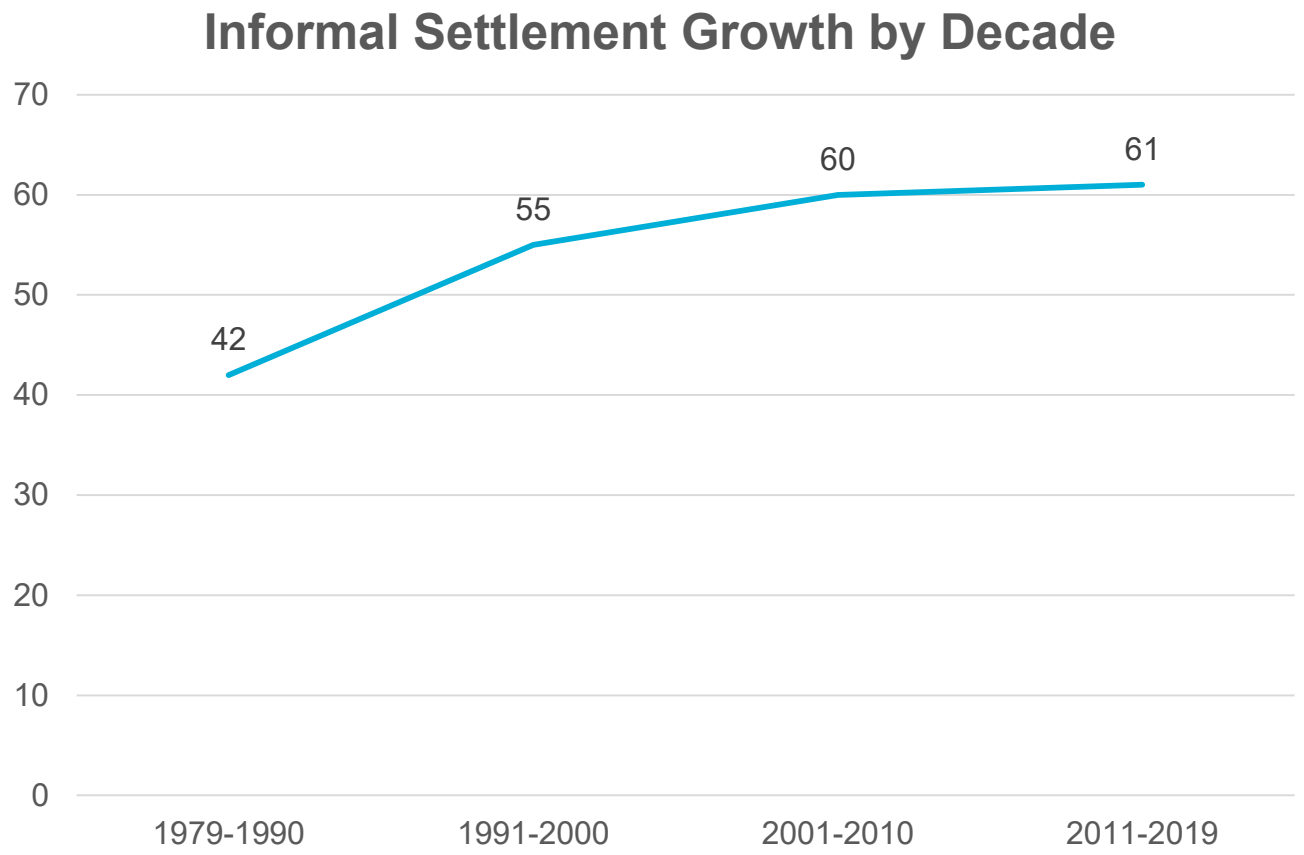
Description	Number
1 IS	rent houses
Total houses	42
Total households	42
Total population	126

Key findings – Location – High risks



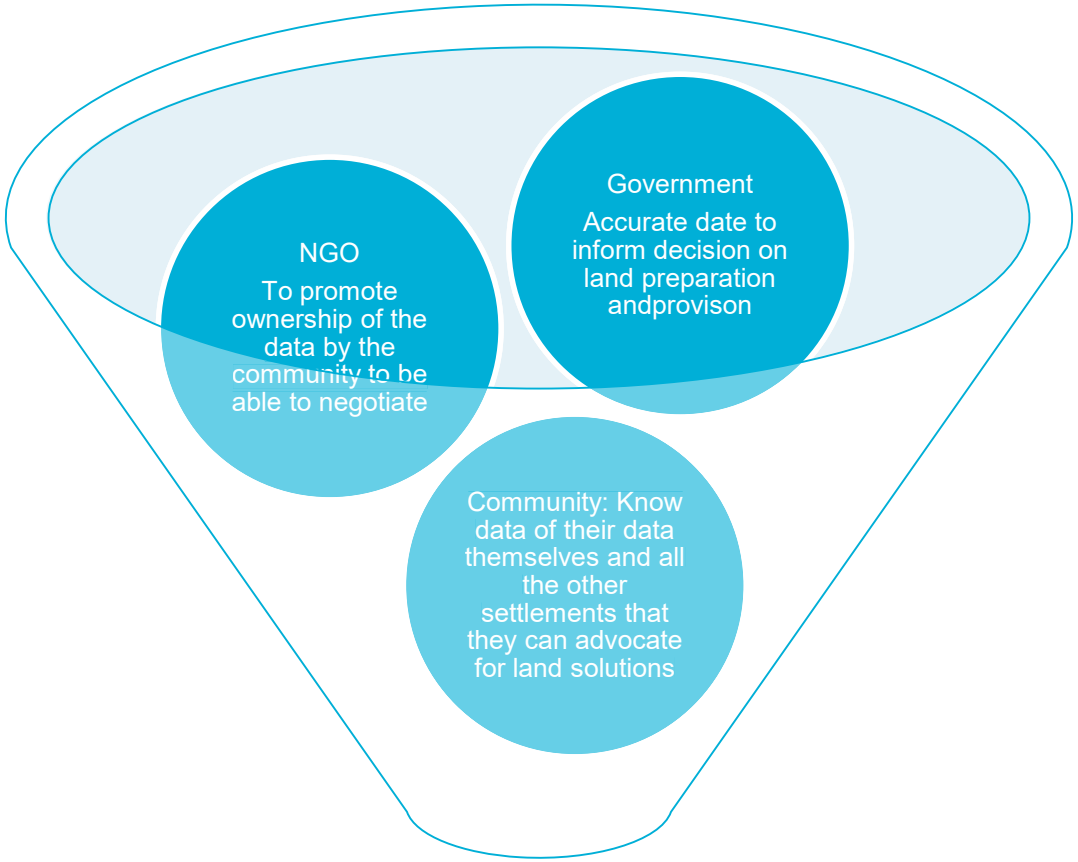
- Along river bank
- Along railway track
- Along road side
- Other land, private

Key findings



Key findings

Habitat for Humanity Cambodia



Secure Tenure

Best practices

- Good collaboration from local authorities
- The communities are actively involved in the process of data collection
- The data collectors could meet all the 61 informal settlement
- Community leaders have opportunities to partner with us
- Good team spirit amongst team

Challenges

Challenges	Solution
Still there are some community people that are not interested in the survey.	We try to encourage those who met us to participate fully.
Technology was challenging; easy to collect GPS information but hard to upload due to poor internet connection	The team try to update and follow up not to miscommunication again.
There is a limitation on the human resources during the pro[illegible]	We try to help them more as we have some experience more than them.

Lessons Learnt

- The relationship between community and authority is strengthened.
- It is a good opportunity to promote learning environment through this process.
- This is to provoke action from local authorities to support more.
- This data is useful for stakeholders to see what they can integrate.
- Increase accountability and accuracy of data

Recommendations

- Authorities must open more to support the community
- Partners should also provide more technical support
- All the processes must comply with the local government laws
- Should learn more about the community income so that we know they can afford a house or not

Thank You,

Habitat
for Humanity®
Cambodia

WHY BIG DATA FOR HOUSING?

DECODING CITIES WITH BIG DATA

& ARTIFICIAL INTELLIGENCE

URBAN METRY

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info@urbanmetry.com
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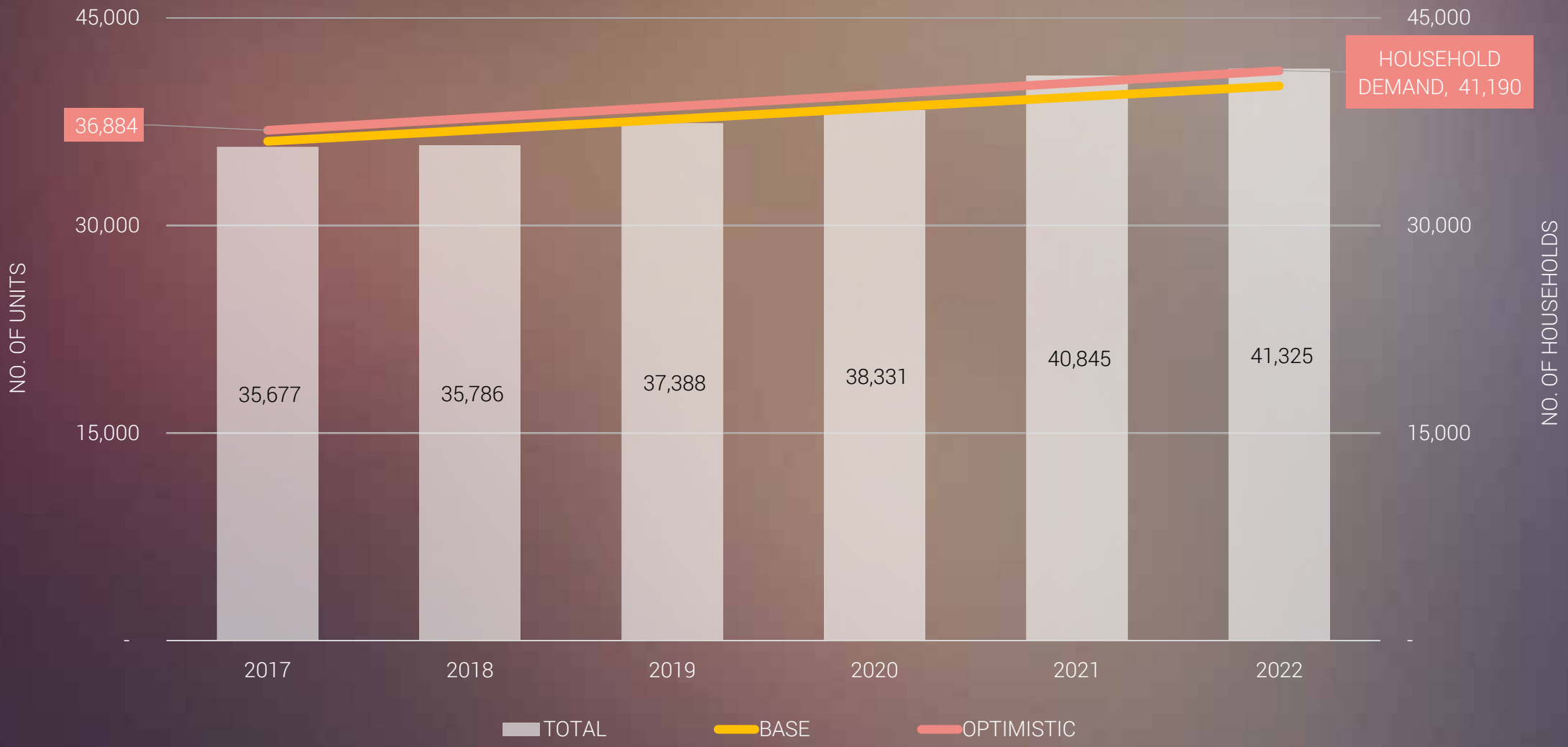
WHO WE ARE

URBANMETRY (formerly known as Property Pricetag) is a property data company that harvests, cleans and analyses large amounts of city data, through its proprietary algorithms to extract trends and patterns in the built environment. It offers this data to the general public, as well as public and private sectors, in hopes of creating a more efficient and transparent property market, improving city planning, and shaping a sustainable urban environment.

We offer the aggregated data to various key stakeholders in the property market including developers, bankers and government bodies to enable better and more relevant analysis during business development and policy making processes.

SUPPLY & DEMAND

THE HOLY GRAIL OF PROPERTY MARKET



Source: Urbanmetry Database

HOW OUR CLIENTS USE OUR DATA?

PROPERTY DEVELOPERS	LAND ACQUISITION	PRODUCT PLANNING	MARKETING
CURRENT CLIENTS	Property developers procure data from Urbanmetry before land acquisition to stress test the assumptions on the GDV and Sales potential of property in locations of interest.	Property developers with existing landbank uses Urbanmetry data to determine the type and timing of product launch. The data is also used to guide design decisions with architects and planners.	Property developers also uses Urbanmetry data to determine the best marketing approach to reach the target market for the product.

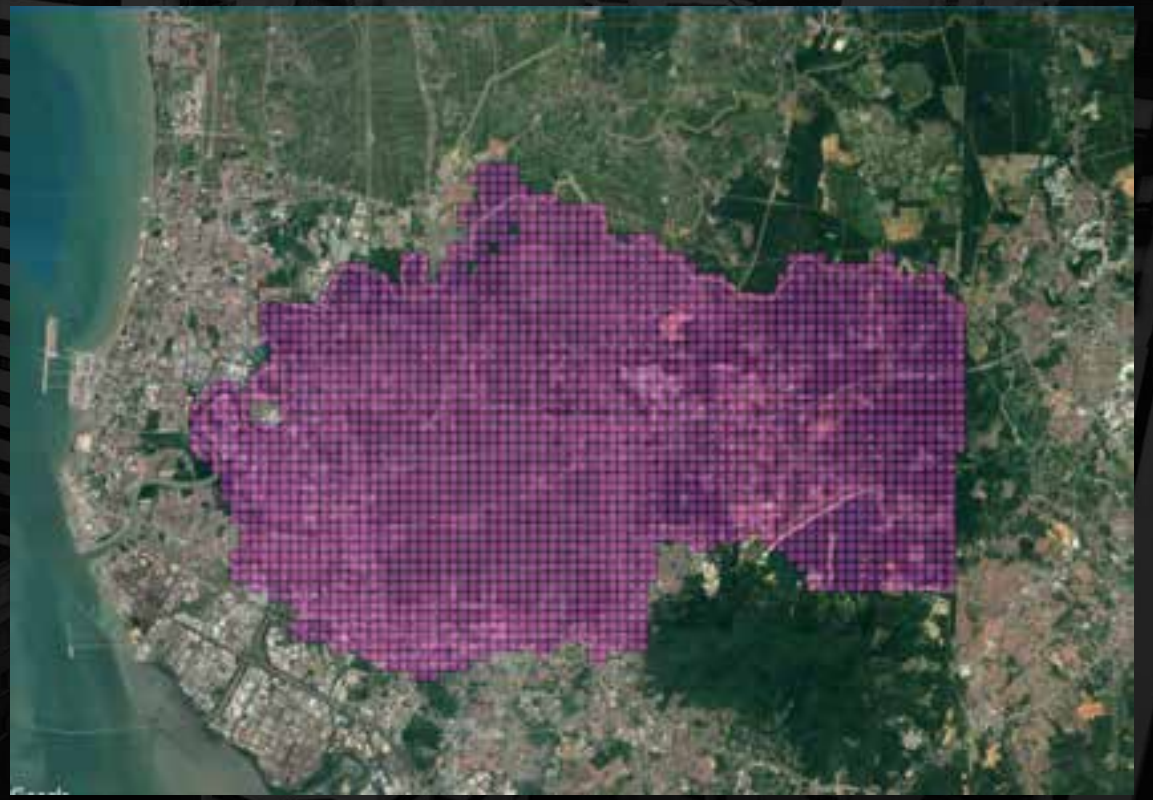
GOVERNMENT	POLICY	MONITORING OF PROPERTY MARKET	AFFORDABLE HOUSING PLANNING & STRATEGY
CURRENT CLIENTS	Government are able to investigate the effectiveness of various Housing and Property Policies with the data. This will also help with modelling impact of new policies.	Government Departments often work in silos and data is usually fragmented across Ministries and Departments. Our consolidated data helps all levels of government gain a comprehensive view of the market.	Different states and federal government agencies have a variety of Affordable housing strategies. Urbanmetry's data allows government to make data driven strategy and planning decisions to best utilise available resources.

BANKS	RISK MANAGEMENT FOR PROPERTY DEVELOPMENTS	MONITORING OF PROPERTY STOCKS & MARKET	MORTGAGE VALUATION
TARGETED CLIENTS	Banks require market research to support term and bridging loans for property developments. Urbanmetry's report is able to quantify the possible risks of property developments funded by the banks.	Funds and investment banks need better data to model the health of property stocks and the overall property market. Urbanmetry's data is able to identify the health of listed property developers.	Urbanmetry's data is able to generate near term forecast valuation of individual properties. This would expedite the mortgage application process for Clients.

URBAN METRY

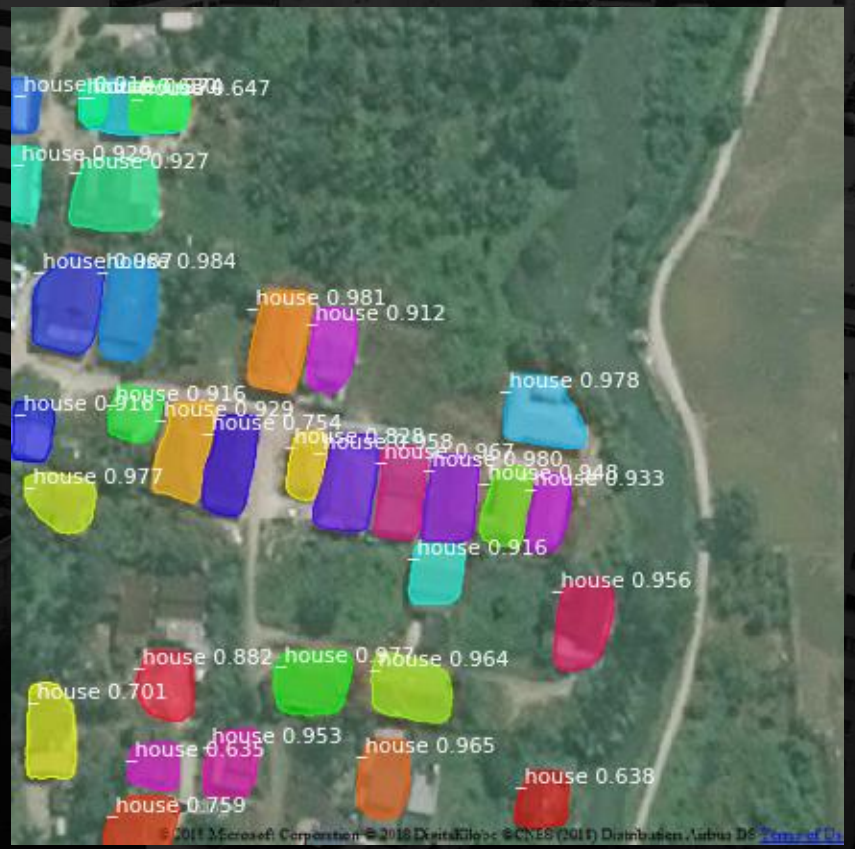
SATELLITE RECOGNITION TECHNOLOGY

WE TRAIN OUR AI BOTS TO COUNT HOMES IN THE LOCAL CONTEXT

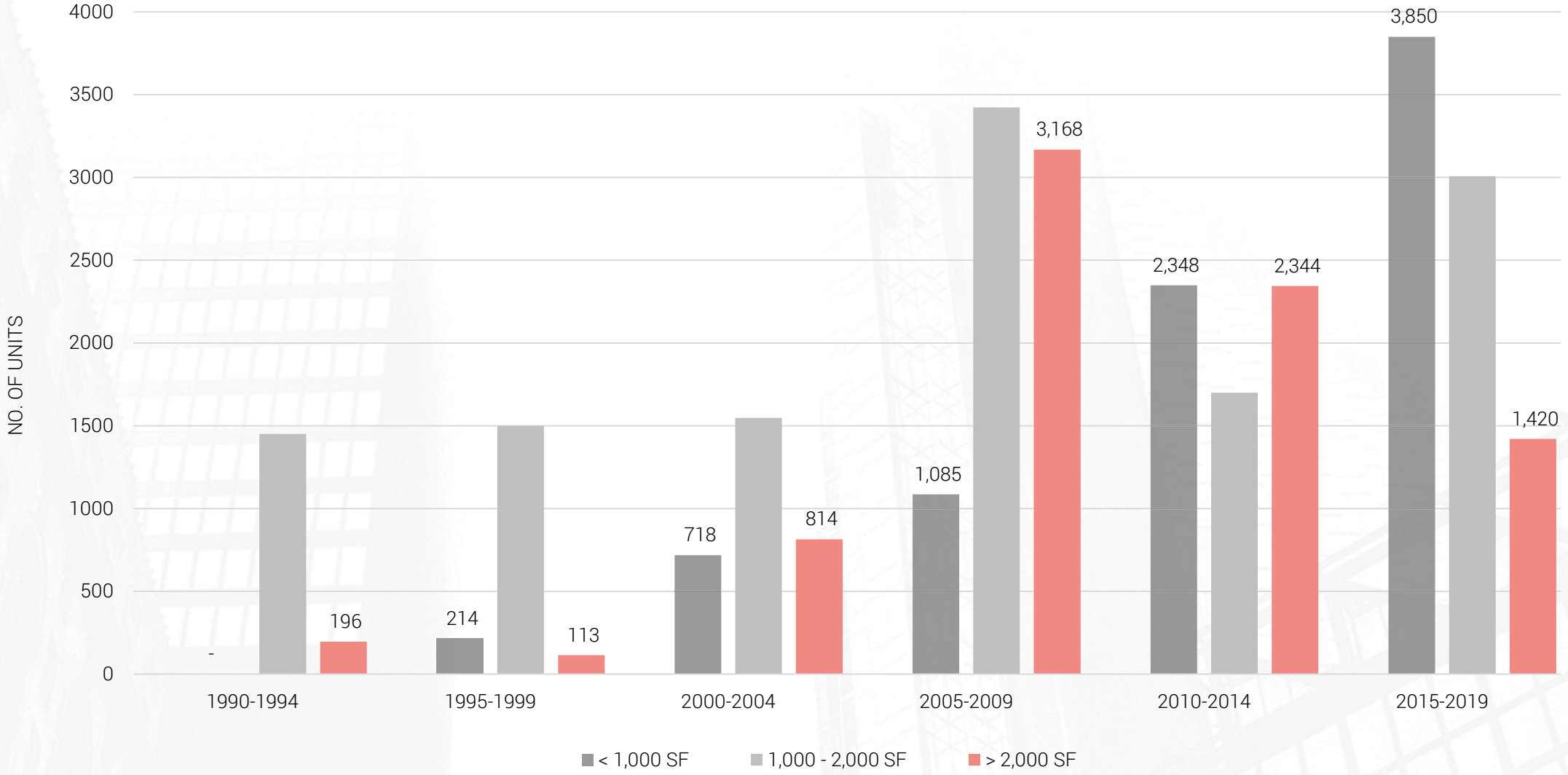


SATELLITE RECOGNITION TECHNOLOGY

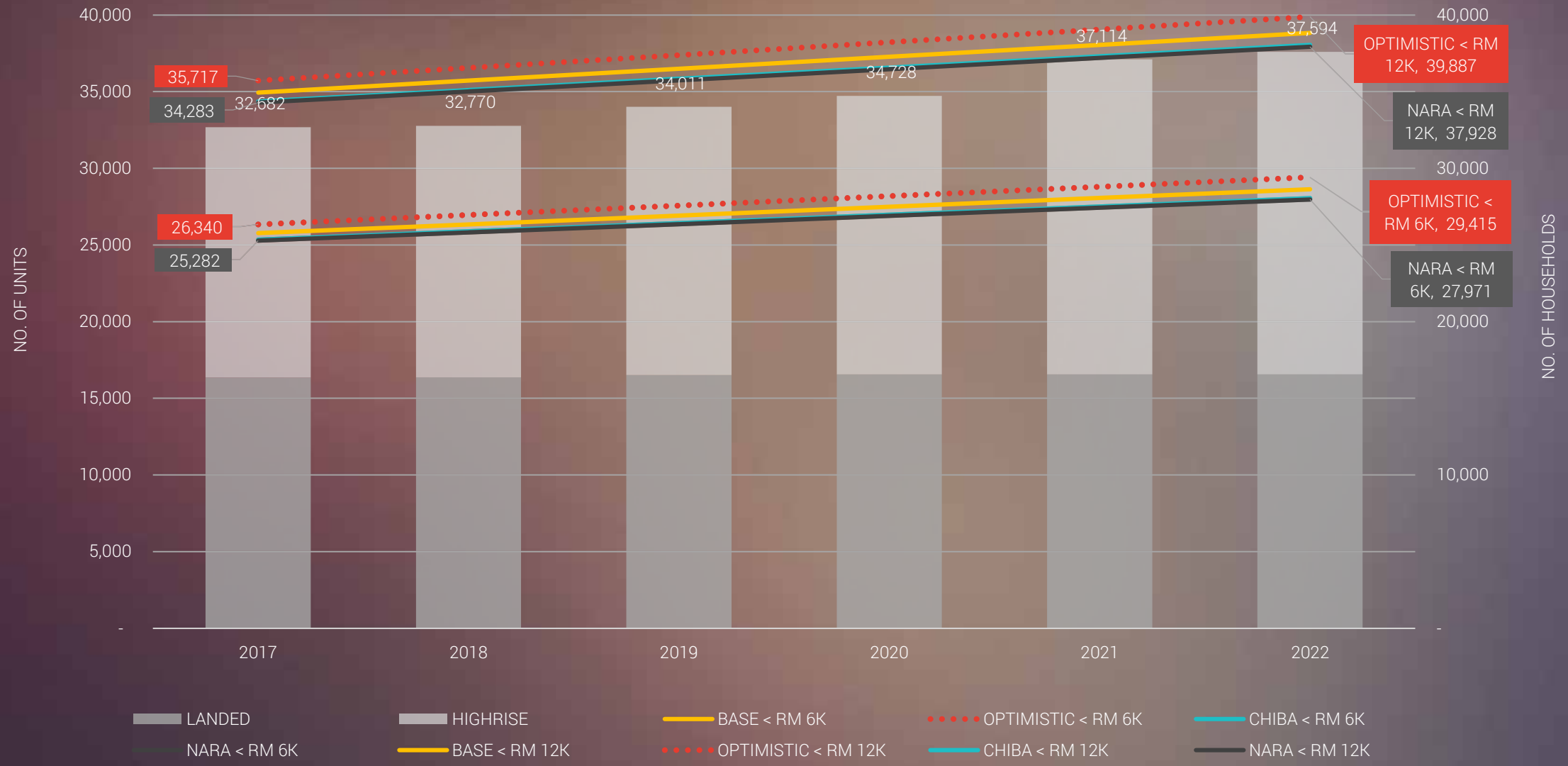
THE AI ALGORITHM IS TRAINED TO IDENTIFY LOCAL RESIDENTIAL & NON-RESIDENTIAL BUILDINGS IN DIFFERENT IMAGE CONDITIONS



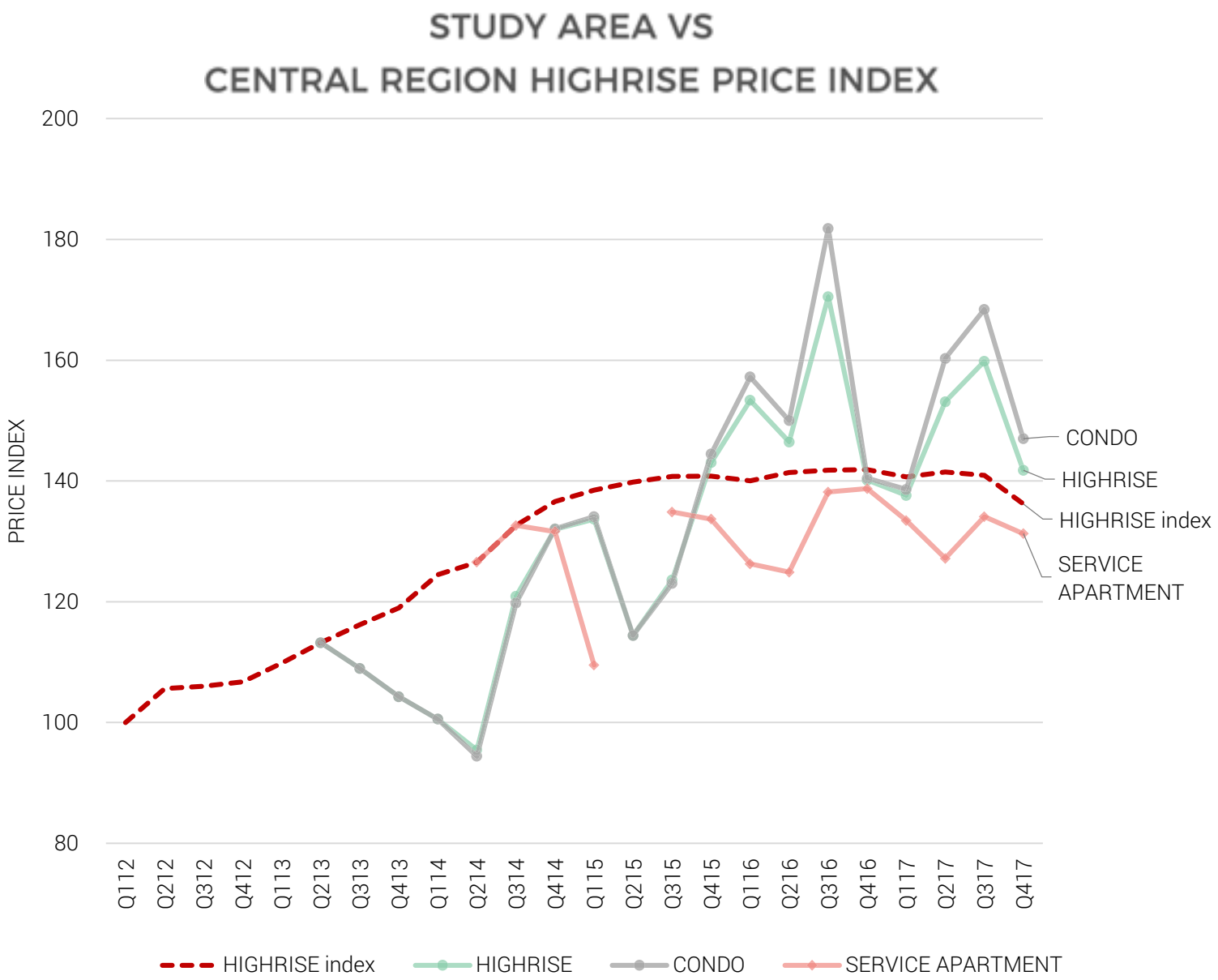
PROPERTY SIZE STOCK TAKE



HOUSEHOLD INCOME UNDER 6K & RESIDENTIAL STOCK UNDER RM 500K (SAMPLE)



Source: Urbanmetry database

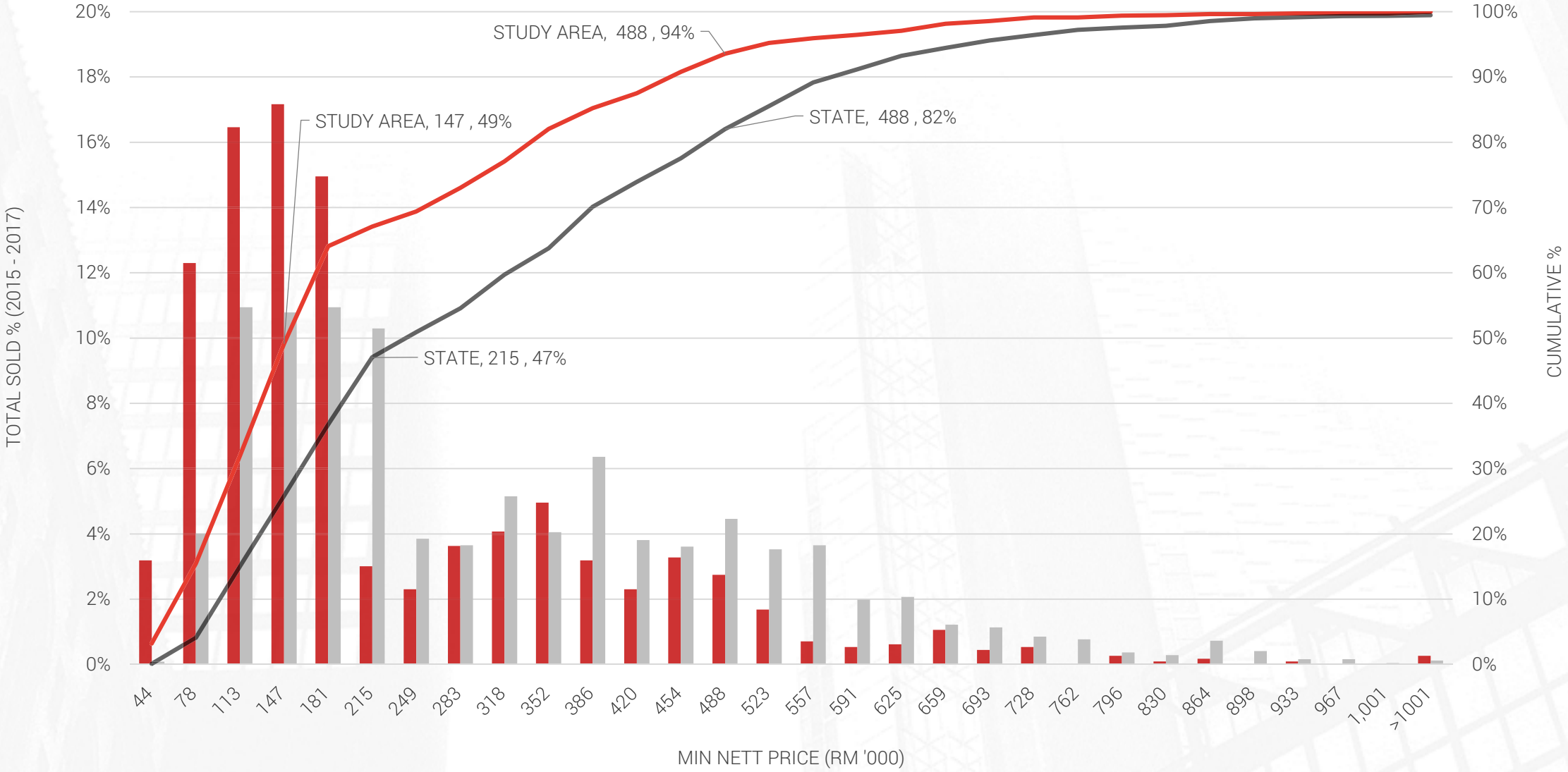


LOCATION SPECIFIC PRICE INDICES

Local neighbourhood specific price indices can prompt policy makers to take proactive actions against escalating or downward trending prices.

Source: Urbanmetry database

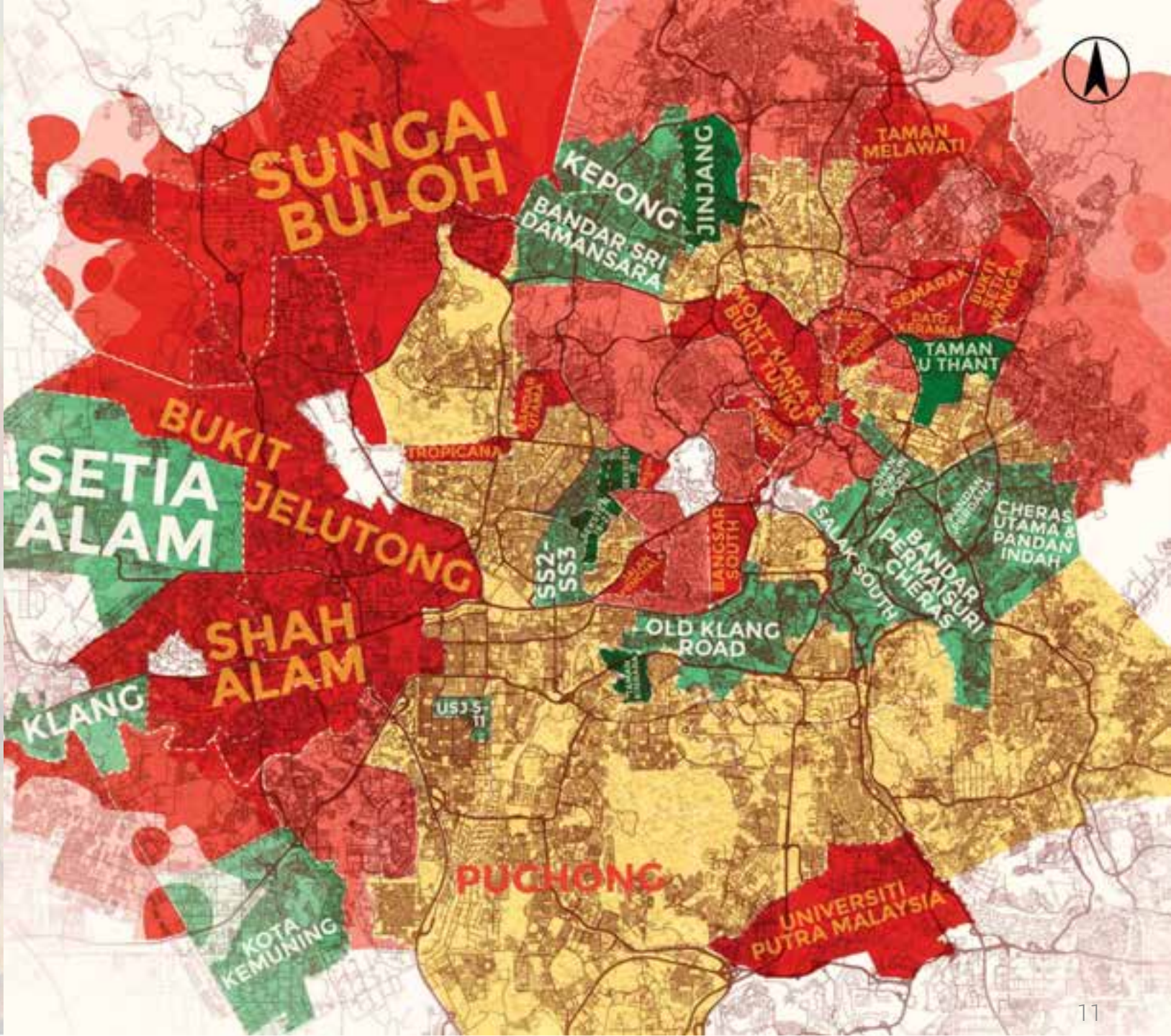
TRACKING TRANSACTIONS CAN REVEAL PRICE SENSITIVITY & MICRO-DEMAND



NASI LEMAK INDEX

How does the city feed its people?

We track the density of halal and non-halal establishments serving food priced under RM15 to see where different communities live.



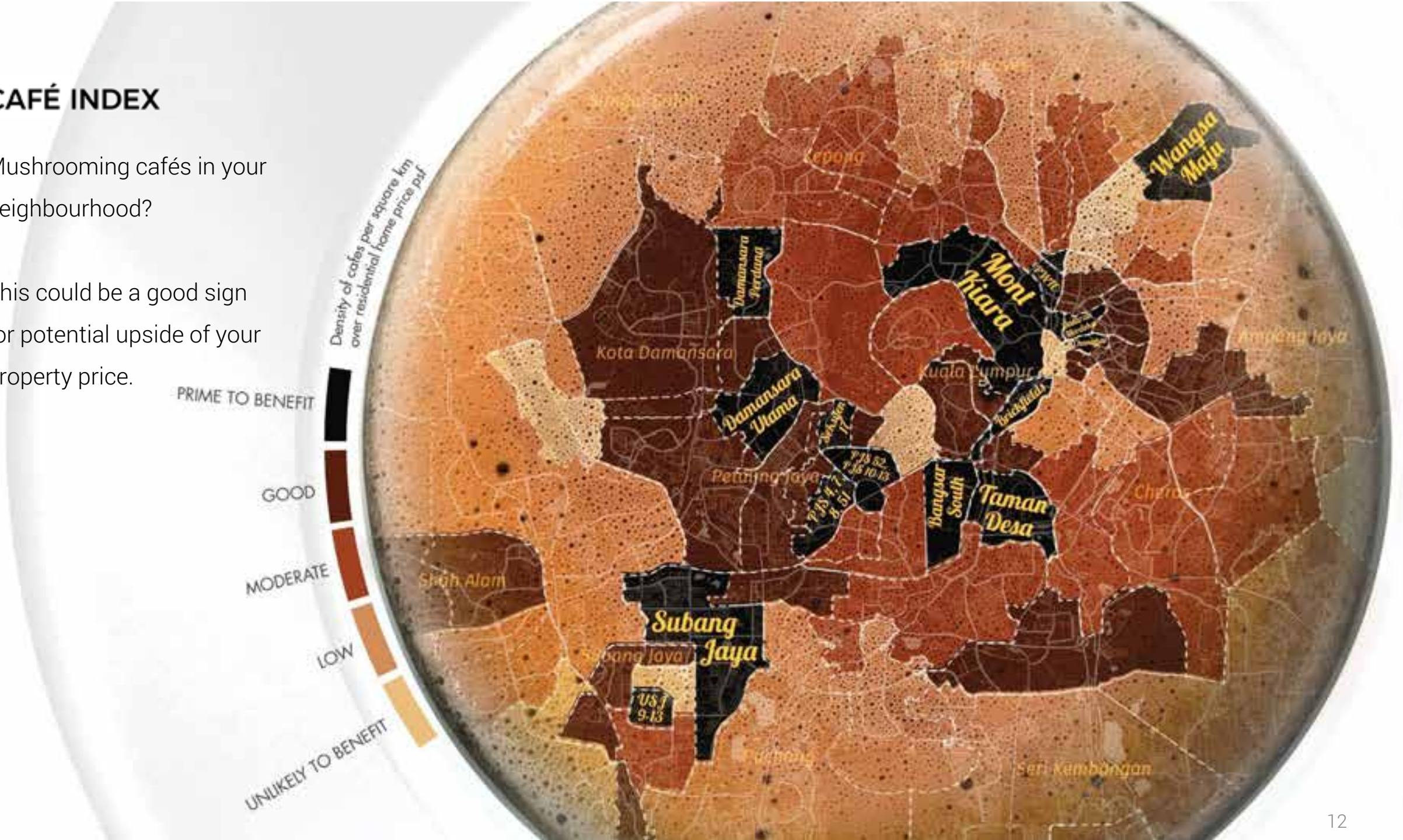
NASI LEMAK INDEX

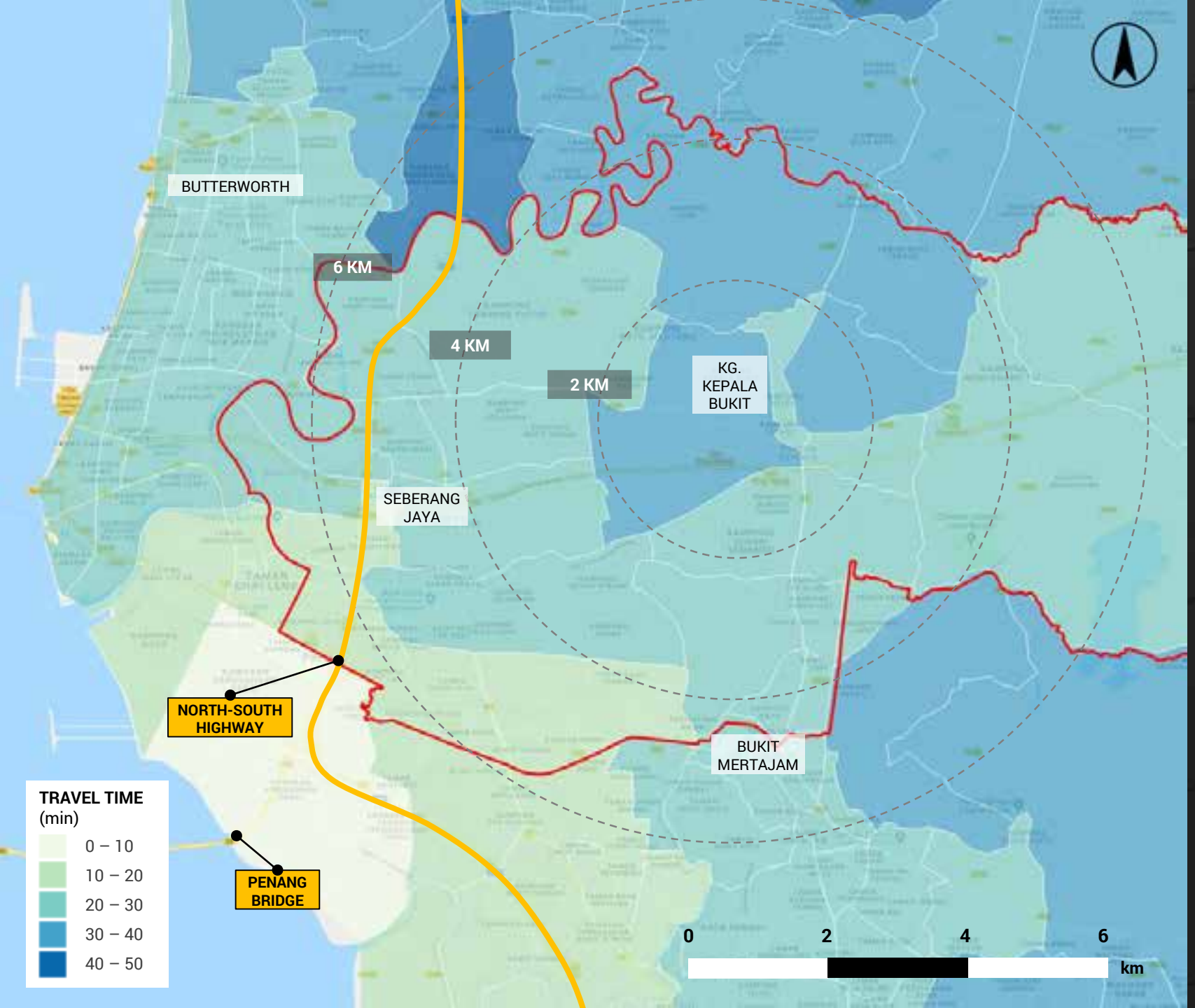
- MOSTLY NON-HALAL FOOD
- MORE NON-HALAL FOOD
- NEUTRAL
- MORE HALAL FOOD
- MOSTLY HALAL

CAFÉ INDEX

Mushrooming cafés in your neighbourhood?

This could be a good sign for potential upside of your property price.





TRAVEL TIME TO PENANG BRIDGE (0800)

Residents in the study area could have difficulty reaching the Penang Bridge during the early morning traffic.

Most residents are only able to reach the bridge within 30 minutes in the morning with the exception of those living in the South-Western neighbourhoods.

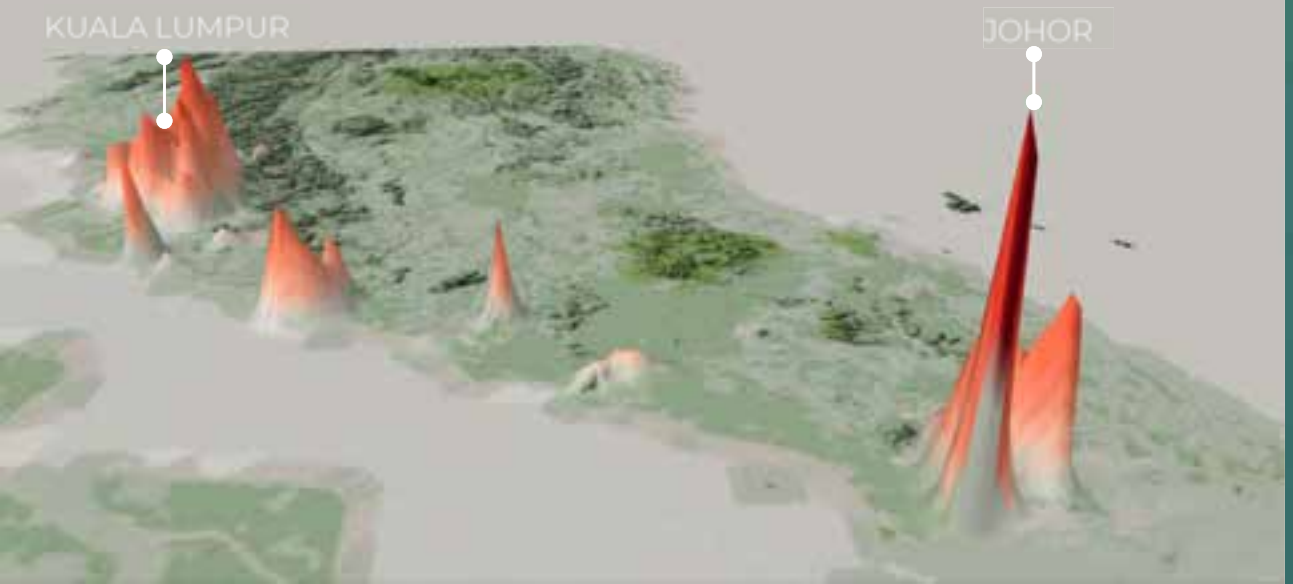
In addition, residents in Kg. Kepala Bukit could take up to 40 minutes to reach the bridge by car.

Source: Google Traffic

Note: Travel time was calculated to Penang Bridge at 0800 hours on 23 July 2018

CURRENT HOUSING STOCK IN MALAYSIA

INCOMING HOUSING STOCK IN MALAYSIA



PAST & PRESENT

AS POLICIES AND SUPPLY FOR HOUSING REQUIRE TIME, TIME SENSITIVE DATA THAT REFLECTS CURRENT AND FUTURE HOUSING STOCK IS IMPORTANT TO EMPOWER POLICYMAKERS AND KEY STAKEHOLDERS TO UNDERSTAND AND RESPOND TO THE MARKET

THANK YOU

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