

# Innovative ways to address information gaps

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# DATA FOR MANY PURPOSES



**INFORMED  
PLANNING**



**INVESTMENT AND  
TARGETING**



**MONITORING,  
ENGAGEMENT AND  
EVALUATION**

**STRATEGY MATTERS!**

 GLOBAL PROGRAM  
RESILIENT HOUSING

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## A COMPREHENSIVE WBG APPROACH

CITY PLANNING  
& BUILDING  
REGULATIONS

INFRASTRUCTURE  
& SERVICES

SUBSIDIES

END-USER  
FINANCE

ACCESS  
TO LAND

CONSTRUCTION &  
BUILDING MATERIALS  
SECTORS

DEVELOPER  
FINANCE



CHICLAYO



Registro Único  
de Vivienda  
DATOS y TECNOLOGÍA

# Statistics of the housing sector dynamics (Registered in RUV)

SOY EMPRESA

SOY ENTIDAD FINANCIERA

SOY GOBIERNO

SOY ASEGURADORA

SOY ONAVI

SOY ADQUIRIENTE

SOY SUSTENTABLE

SOY PROVEEDOR

## Producción de vivienda



Número de viviendas

3,808 292,646

Año

(Todo)

Mes

(Todo)

Enero

Febrero

Marzo

Abril

Mayo

Junio

Julio

Agosto

Septiembre

Octubre

Noviembre

Diciembre

108,085

142,175

163,835

151,862

159,742

165,248

153,698

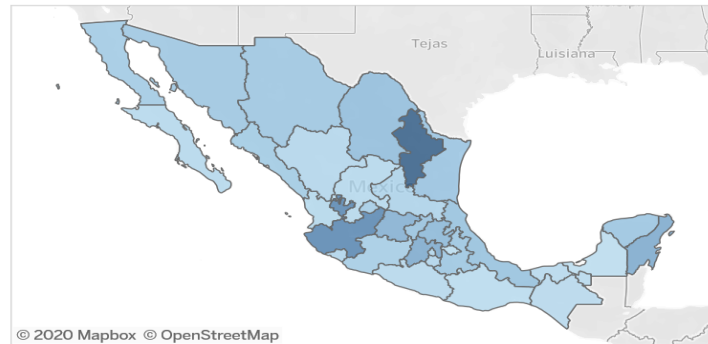
162,531

161,393

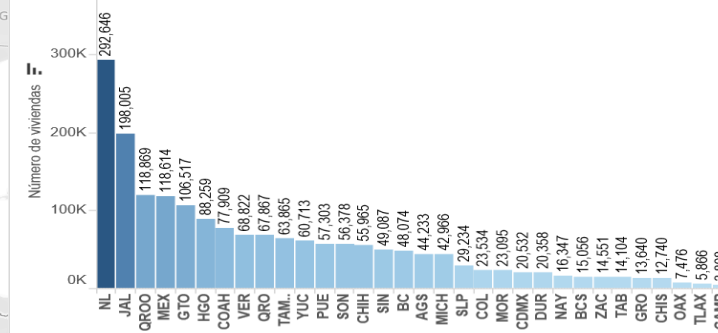
168,980

155,271

143,613



© 2020 Mapbox © OpenStreetMap



Total

Total  
1,836,433

## Clase de vivienda

A. ECONOMICA

B.1 POPULAR 128

B.2 POPULAR 158

B.3 POPULAR 200

C. TRADICIONAL

D. MEDIA

E. RESIDENCIAL

F. RESIDENCIAL +

4.59%

8.25%

30.62%

23.22%

24.02%

9.09%

0.21%

0.01%

## Número de recámaras

Dos o más



96.87%

Una recámara

3.13%

## Tamaño de vivienda

Superficie construida

MENOR A 38

MENOR A 45

MENOR A 60

MENOR A 80

MAYOR A 80

0.37%

20.63%

46.84%

18.16%

14.00%

## Tipo de vivienda

Horizontal



74.65%

Vertical

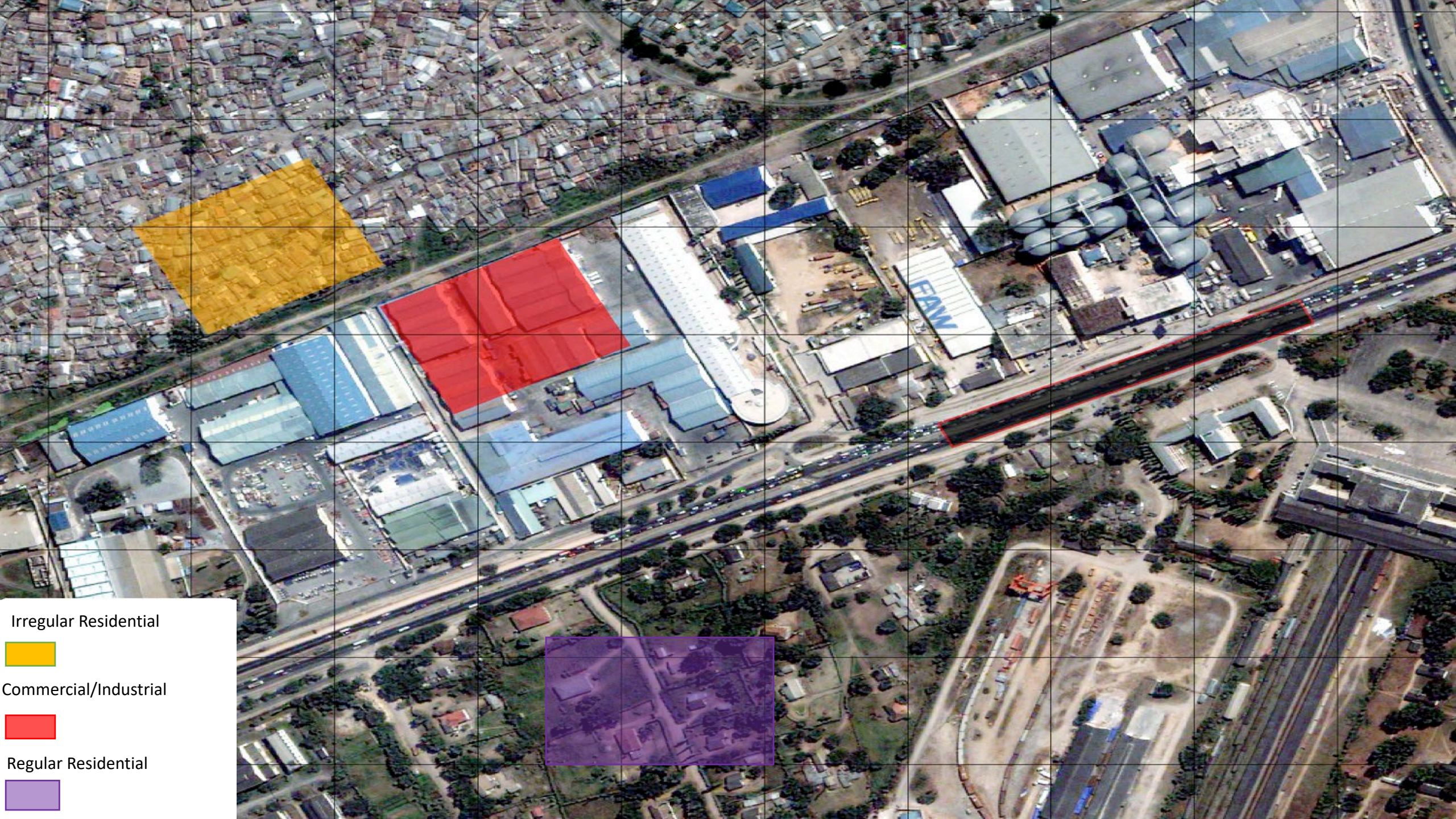


25.35%



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Irregular Residential

Commercial/Industrial

Regular Residential



# Understanding Housing Characteristics

## Improving sampling design when additional data is not available

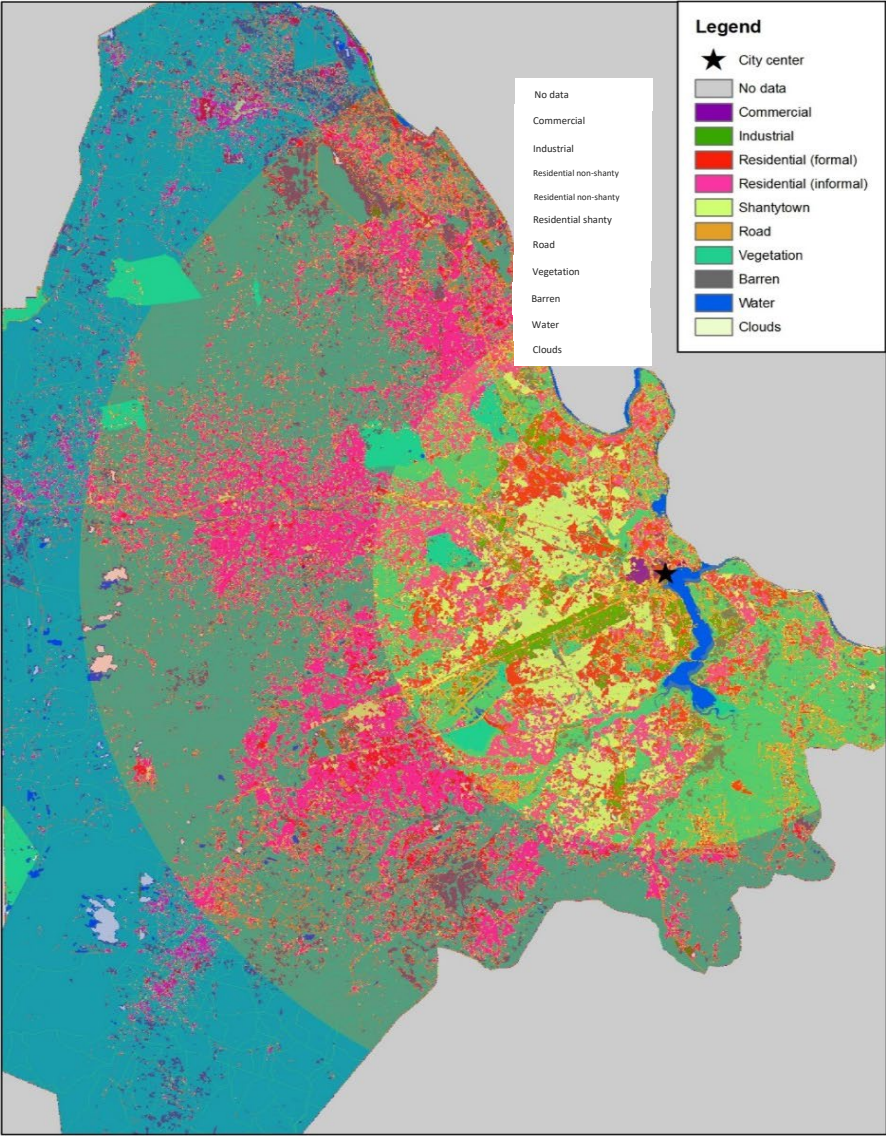
4 strata

200 EAs (selection pps)

2,397 sample households

| Stratum                    | 2012 Census |            |            | DESLSS 2015 |                   |                 |
|----------------------------|-------------|------------|------------|-------------|-------------------|-----------------|
|                            | No. of EAs  | No. of HHs | Population | No. of Eas  | Sample Size (HHs) | Margin of Error |
| 1 Central core, non-shanty | 4,943       | 329,477    | 1,317,095  | 56          | 672               | 5.3%            |
| 2 Central core, Shanty     | 6,073       | 422,123    | 1,586,762  | 64          | 768               | 5.0%            |
| 3 Middle Ring              | 3,692       | 275,620    | 1,146,747  | 51          | 612               | 5.6%            |
| 4 Periphery                | 554         | 41,388     | 166,360    | 29          | 348               | 7.4%            |
| Total                      | 15,262      | 1,068,608  | 4,216,964  | 200         | 2,400             | 2.8%            |

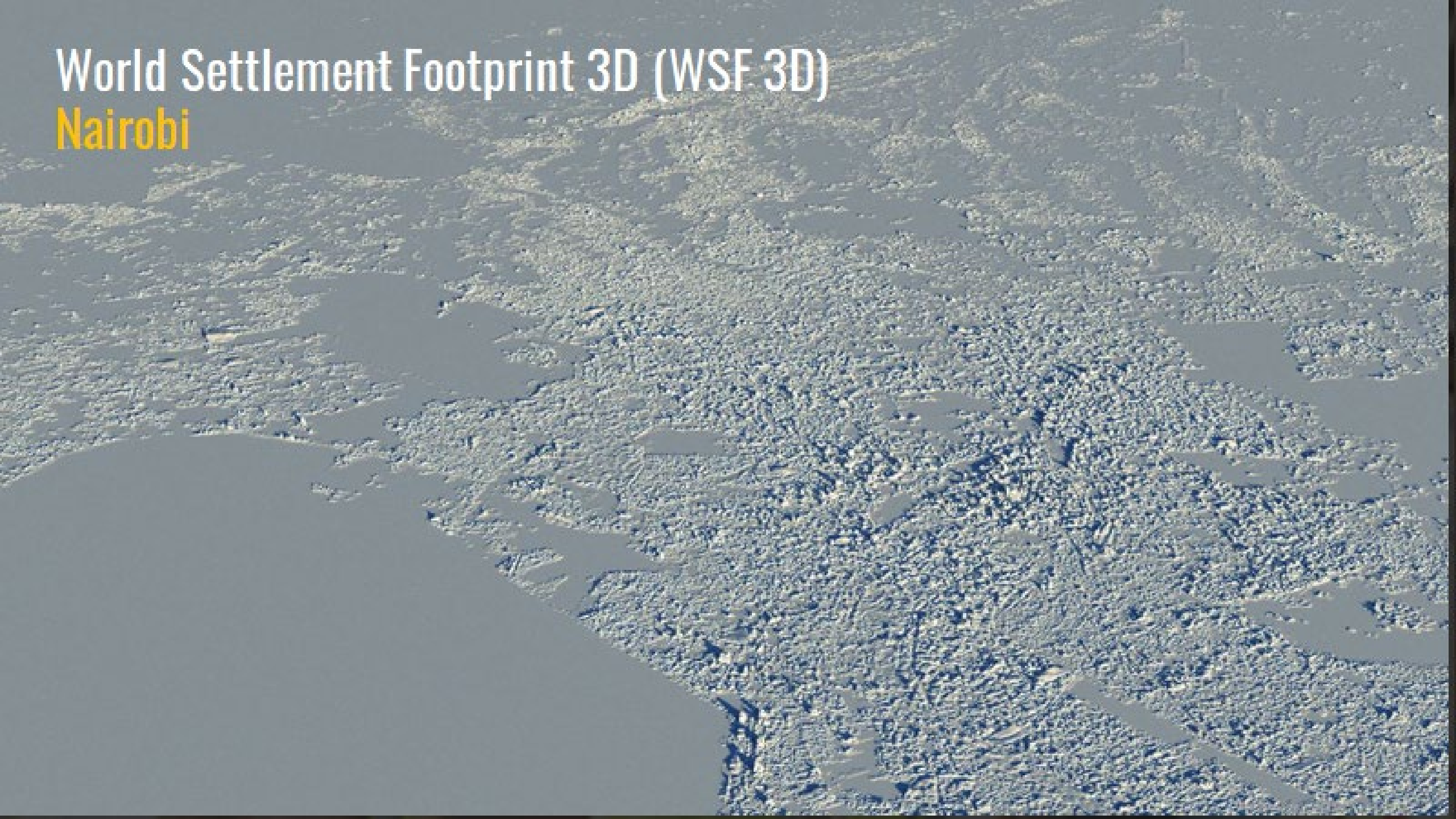
### Dar es Salaam





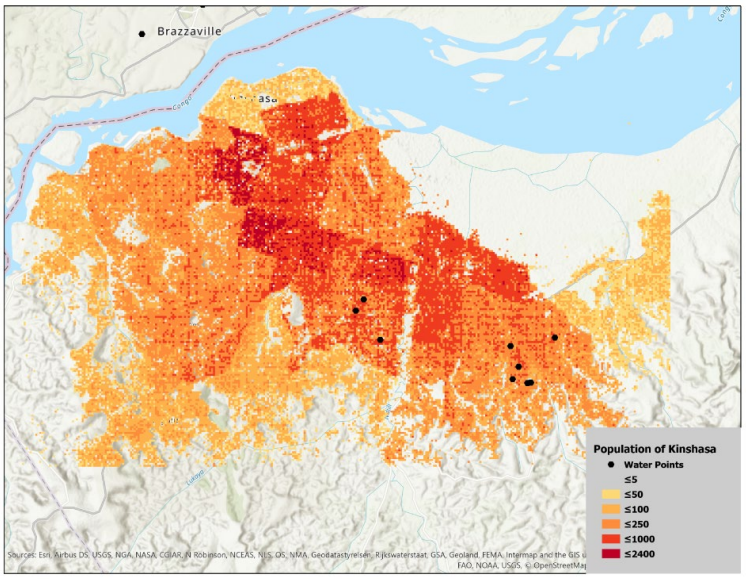
# World Settlement Footprint 3D (WSF 3D)

Nairobi

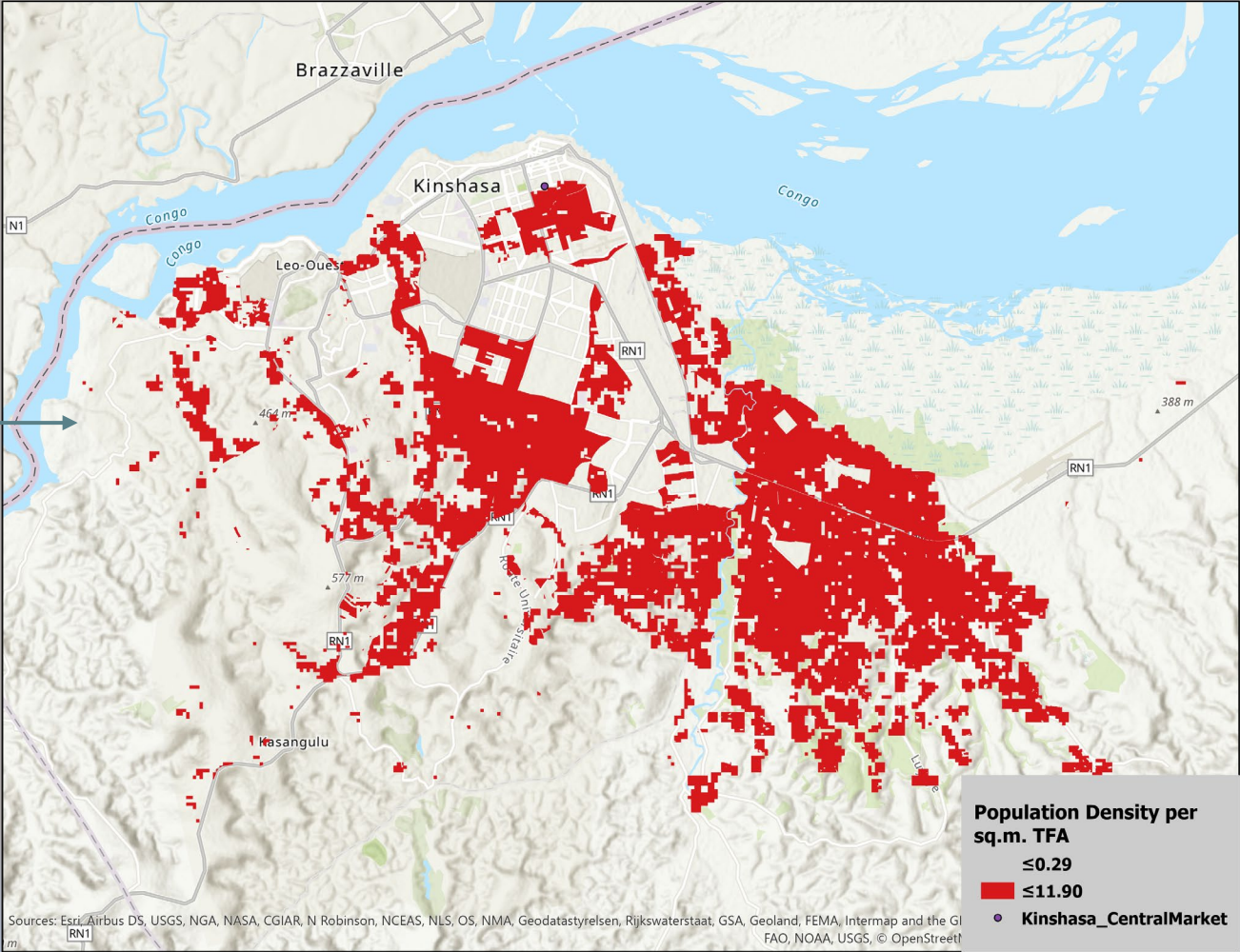
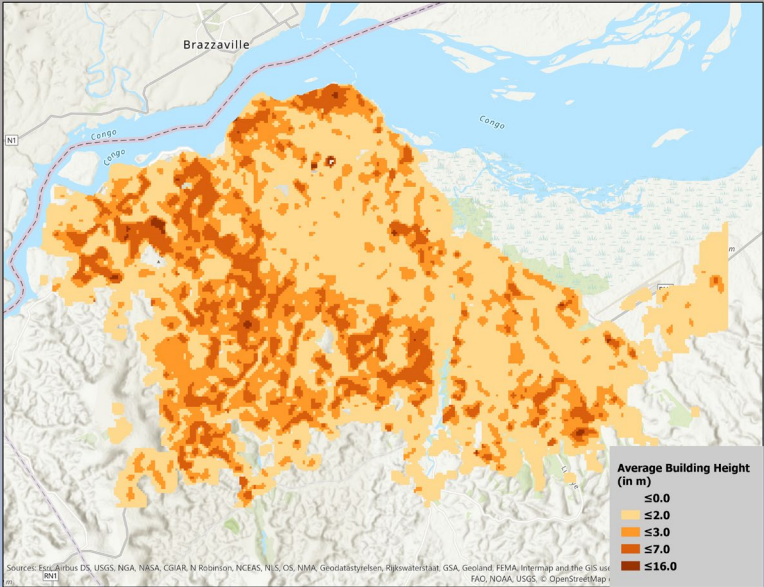


# Where people live in Kinshasa

About 14 million people live in Kinshasa, 80 percent of them in hotspots, in only 31% of the land area



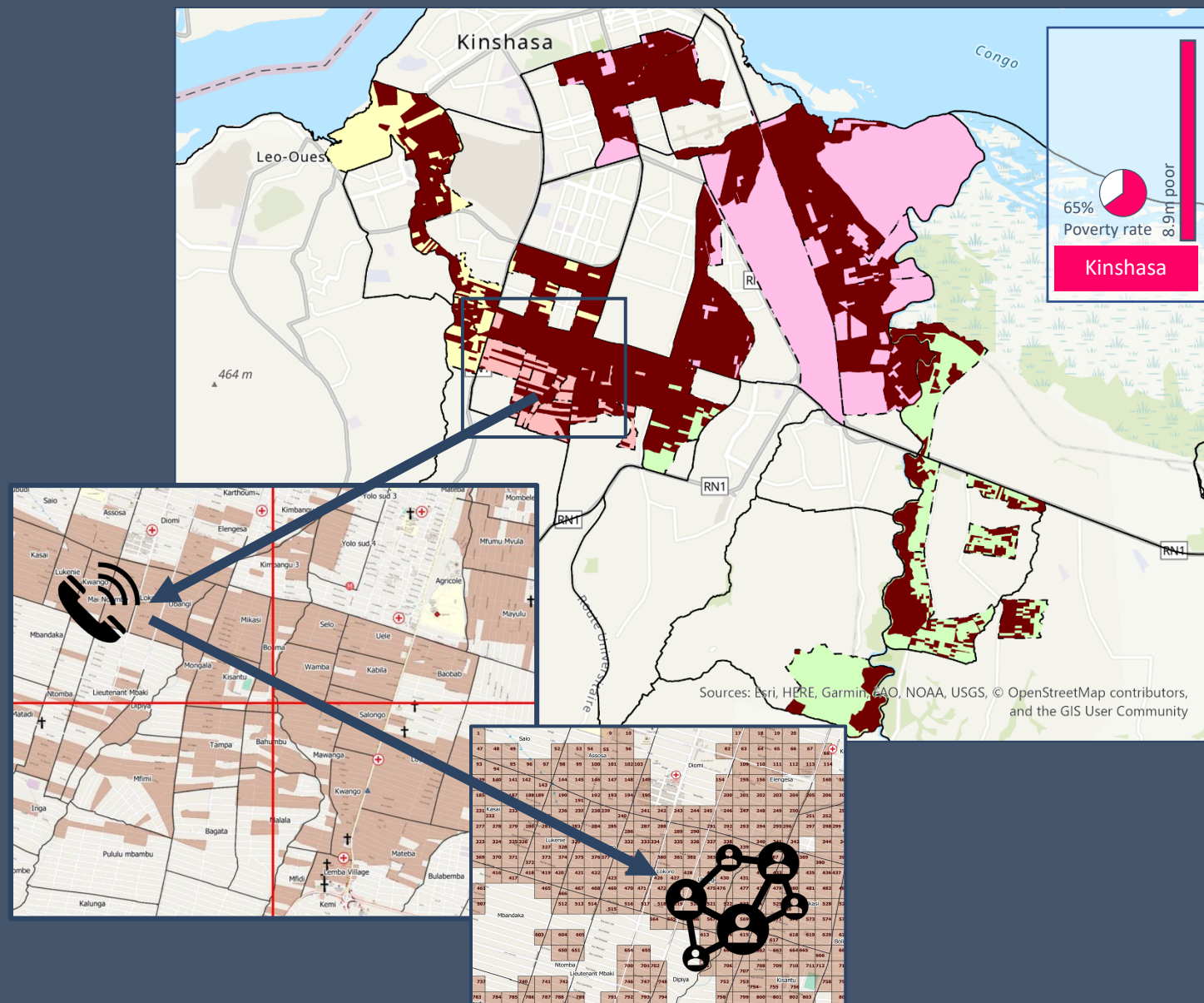
## Average heights (per pixel)





# Emergency cash Transfers in Kinshasa

- Government Multi-Sectoral Response Plan to COVID-19 includes **emergency cash transfers** in Kinshasa as social safety net for urban poor to smooth consumption and prevent negative coping strategy
- Need to identify about **250,000** beneficiary households with no poverty map, no social registry, no pre-existing program, weak digital payment ecosystem
- Hotspots** complemented with **neighborhood characteristics** (high risk of flooding, building density and precariousness, access to jobs)
- The targeted households selected **using physical housing and neighborhood characteristics**
- 4 clusters for 4 telecom companies** to identify, profile customers and provide the Government implementing agency with anonymized phone numbers for people to register





CAR MOUNTED  
CAMERA



DRONE



MACHINE LEARNING  
ALGORITHMS

WE GO INTO CITIES AND MAP NEIGHBORHOODS AND HOMES.



## **MACHINE LEARNING ALGORITHMS** **LINK STREET VIEW AND DRONE INFORMATION, IDENTIFYING** **VULNERABLE STRUCTURES THAT MAY POSE RISKS TO FAMILIES**

### SOME APPLICATIONS IN ST MAARTEN:

- LOCATION AND CHARACTERIZATION OF INFORMAL SETTLEMENTS
- IDENTIFYING BACKYARD HOMES
- ASSESING SPEED OF RECONSTRUCTION AND NEED FOR ROOF RETROFITTING



# ASSESSING THE SPEED OF RECONSTRUCTION



**716** DAMAGED AND **94** DESTROYED BUILDINGS  
**93%** OF THE BUILDINGS ARE RESIDENTIAL



# ROOF RETROFITTING

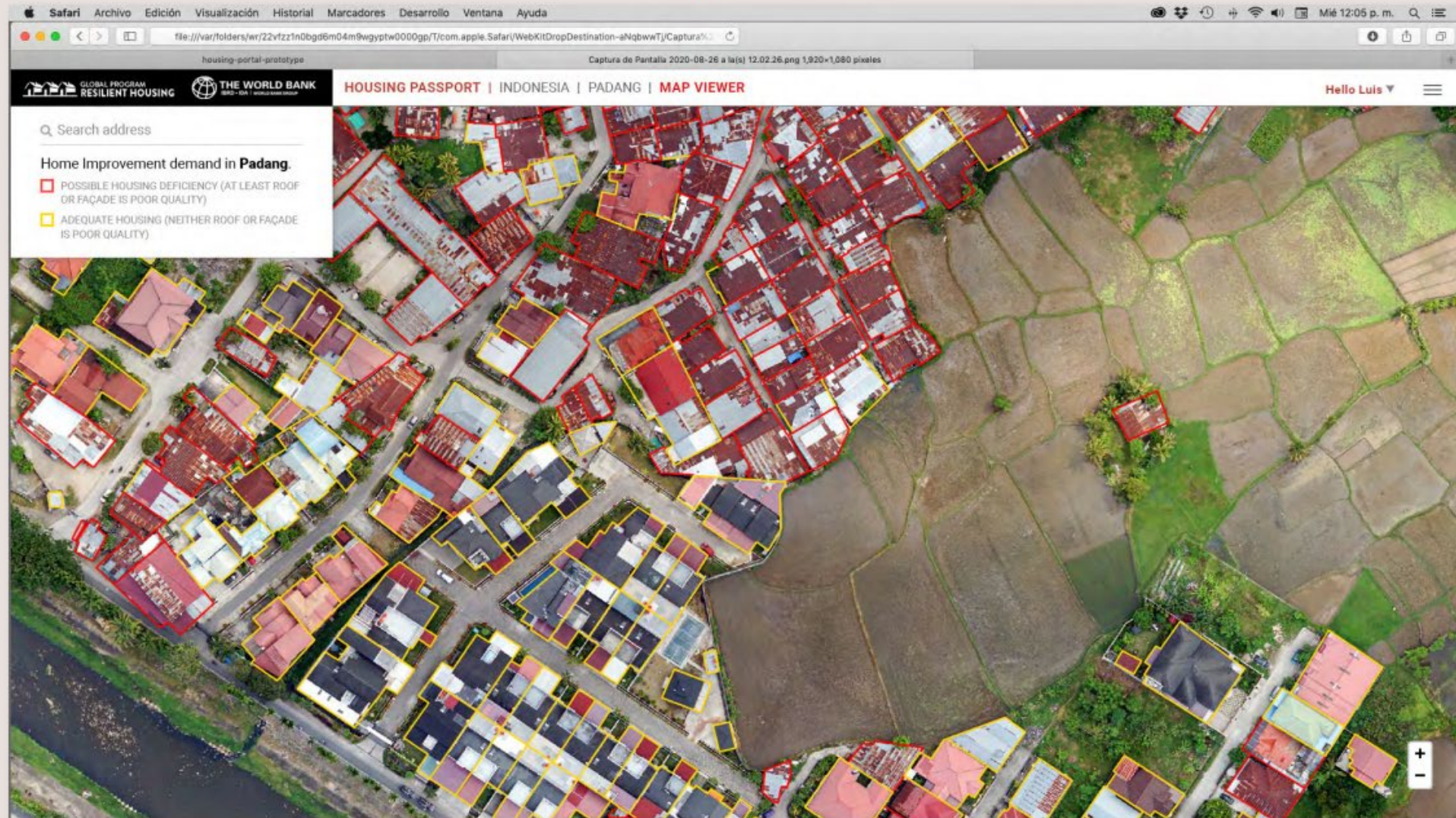


**2,199** POOR, **732** DAMAGED AND **95** DESTROYED ROOFS  
**22.8%** OF THE TOTAL ROOFS



**74,483 HOMES** HAVE A POSSIBLE HOUSING DEFICIENCY (FACADE AND/OR ROOF).

#### 4. THE INNOVATION: THE CASE OF PADANG, INDONESIA





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# THANK YOU!

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<http://www.worldbank.org/en/topic/urbandevelopment>

➤ **Sustainable Cities Blog:**  
<http://blogs.worldbank.org/sustainablecities>

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