



Gaza Urban Profile

Gaza Crisis

December 2014

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Introduction

The Israeli military operation that lasted from July 8 to August 26, 2014 in the Gaza Strip has led to massive displacement and destruction of buildings and urban systems (ex. water, electricity, sanitation). This has greatly exacerbated an already precarious situation as the long blockade of the Gaza Strip had resulted in acute vulnerabilities, including a serious housing shortfall. On one hand, neighborhoods have been partially or completely abandoned and return will depend on restoring of basic functionalities and emergency housing support. In some cases quick return will not be possible in view of the scale of destruction. On the other hand, neighborhoods that have received displaced families are overstretched. Some neighborhoods witnessed both concentrated destruction and inward migration. An overall picture of the urban conditions of neighborhood, such as shelter, infrastructure, commercial and social services conditions, can help to prioritize, localize and streamline immediate and longer term interventions. and unleash opportunities that must be capitalized on. Of particular importance, is the need to understand the crisis impacts on vulnerable groups; especially women and children and the poorest communities throughout the Strip.

UN Habitat seeks to provide up to date urban analysis of the impact of the crisis in key cities of Gaza, with focus on most affected neighborhoods, through City Profiles, synthesizing information and insight from existing sources and priority sectors, supplemented by direct field research by UN Habitat teams. Worth mentioning that UN Habitat expertise in urban analysis, community approaches and crisis contexts have informed the development of the City Profiling process in Syria.

In operational terms, urban or city profiles use GIS based mapping to analyze and present the impact of crisis in each affected city or urban neighborhood, taking into consideration damage and displacement, and how they impact a range of sectors including basic infrastructure, shelter, education, health, local economy. It considers the interrelationships between each sector and assesses local capacity within each. The structure of the City Profile provides baseline and current situation data to measure the

impact of the crisis accompanied by narrative description and analysis.

Gaza City profiles are being developed in close coordination with the active institutions that are currently involved in the work on Gaza crisis. These include a wide range of local and international actors such central and local governments institutions, humanitarian aid agencies ,other relevant UN agencies, and the international donor community. Of particular significance is the collaboration and coordination with all the institutions who are working on damage assessments at various stages and levels, as the urban profiles intend to consolidate existing damages data, analyze and update them. For the completion of priority areas profiles, support is needed to accommodate further data collection and updating.



Damage Assessments and Data Sources

The data on damages included in this profile are based on multiple references. However, most of the geo-referenced data and maps on structures damages are extracted from the UNOSAT (OCHA) assessment of 27, August, 2014 that was based on Satellite images. Many background data were obtained through the shelter Cluster initial damage assessment documents. OCHA GIS database was a valuable resource for many produced maps. The Detailed Infrastructure Assessment (DNA) that was conducted by UNDP in October, 2014 provided a good source that helped in updating some of the data and helped in providing an overall picture on the damages across many categories. Profiles produced for water and wastewater damages were based on maps and assessments produced by the Coastal Municipalities Water Utility of Gaza (CMWU), and were cross referenced with the DNA assessment and OCHA data sources. The PCBS census data of 2007 are the key source for the pre-crisis profile. Some data were obtained from UNRWA and ECHO.

For the full achievement of the objectives of urban profiles, it is key to continue updating data related to the impacts of the war as they become available. Of particular importance is to geo-reference the damage assessment data of the DNA, since it is the most recent and accurate assessment of the damages that can provide a strong background for informing interventions and prioritizing them. Equally important is to get more detailed data of urban development aspects on the municipal and neighborhoods level from the relevant municipalities and from the field.

1. GAZA STRIP, PRE-CRISIS SITUATION

1.1 Gaza Pre-crisis Context:

A. General Description

Gaza is a region of Palestine on the eastern coast of the Mediterranean Sea with a total area of 360 km²¹. It has borders with Egypt on the south west for 13 km and with Israel across the east and north for 59 km and it has a 40 km long coastline². The total population of Gaza is 1.8 million and it has one of the highest population growth rates in the World standing at 3.48%. The Palestinian Central Bureau of Statistics projects the population of Gaza to reach 2.13m by 2020³.

Gaza's geography consists of three longitudinal zones of sands, alluvial soil and sandstone ridges. The central agricultural zone attracted inhabitants in the past and became the focus for the main mobility routes and it forms the urban backbone of the strip. Gaza has five governorates comprising twenty five municipalities, four joint councils, and eight refugee camps. Gaza is a highly urbanized region with 74% urban population and with an urbanization rate of 3.1% per annum⁴. Gaza city is the biggest and most condensed urban center with 400,000 inhabitants and a density exceeding 10,000 inh/sqkm while Jabalya Camp and Ash Shati Camp are considered the largest and the mostly dense camps with densities exceeding 50,000 inh/sqkm.



B. History and Politics:

Gaza was inhabited since the 15th century B.C, and has been dominated by many peoples and empires throughout its history. It was incorporated into the Ottoman Empire in the early 16th Century.

Following World War II, Gaza became part of the British Mandate in Palestine and following the 1948 Israeli-Arab war, the newly formed Gaza strip became under the Egyptian administration until 1967 when it was occupied by Israel.

Chronicle history of the recent political development in Gaza Strip

In **1994**, Israel granted the Palestinian authority the right of self-governance in Gaza but not a sovereign state or territory.

In **2000**, the Palestinian second intifada broke with waves of protests and unrest.

Between **2000** and **2004**, the construction of the separation barriers between Gaza and Israel and Gaza and Egypt were completed.

In **2005**, Israel withdrew from Gaza under their unilateral disengagement plan but continued to control its borders.

In **2006**, Hamas won the Palestinian legislative council election and became the elected government.

In **2007**, following Hamas win of the legislative council election, fighting erupted between Hamas and Fatah for a period of 6 months, during which both parties attacked vehicles, personal and buildings of the other side. Hamas expelled Fatah from Gaza and formed a separate government breaking the unity government between Gaza and the West Bank. The blockade on Gaza by Israel



started after Hamas came to power sealing by that its land, air and sea and severely restricting the move of people and goods from and into Gaza.

In Dec **2008**, Israeli army launched series of air strikes on targets in Gaza destroying schools, hospitals, mosques, government buildings, and other buildings.

In Jan **2009**, Israel began the ground invasion in Gaza and the war lasted 22 days. More than 1,200 Palestinian were killed in this war and tens of thousands of homes and other buildings and infrastructure were destroyed leaving over 50,000 persons without an appropriate shelter.

In **2012**, Israel launched an 8 day operation in Gaza (Pillar of Defense) targeting Hamas infrastructure. During this offensive, Israel killed more than 158 people and destroyed more than 124 houses and more than 238 public institutions (mosques, schools, health, governmental, etc.).

In **2014** Hamas and Fatah, after the reconciliation talks, formed a Palestinian unity government.

1 "Gaza Factsheet 2014", the World Bank.

2 The Palestinian Environmental Authority.

3 PCBS.

4 UN-Habitat.

C. Urban and Socio Economic Conditions:

During the past 20 years, Gaza has gone through considerable urban transformation shaped by the Palestinian Authority establishment and the subsequent institution building and boom in construction. However, Hamas ascent to power, years of blockade, and the offensives between 2008 and 2014 prior to the latest assault have resulted in a deteriorating situation in Gaza. According to 2011 PCBS statistics poverty in Gaza stands at 38%. However, recent reports by UNDP and OCHA have indicated that between 70-80%¹ of Gazans live below poverty line given the recent offensives and the continuation of the blockade. In addition, 30% of the newborns in Gaza are living with anemia², 72% of Gazans are food insecure³, 45% of the agricultural land in Gaza is out of production, and by the second half of 2014, unemployment affected 45%⁴ of the Gazans.

The Gaza Strip is characterized by a housing crisis at multiple levels, as a result of high population growth, Israeli restrictions on movement and access of people and building materials, and war damages. It was estimated that before the latest offensive, there was a shortage of 71,000 housing units⁵.

Prior to the crisis, 97% of the people in Gaza had access to water networks⁶, with the ground water from the coastal aquifer as the primary source. However, in spite of high coverage, the service is intermittent and ground water is highly contaminated. This has resulted in the growth of private enterprises using desalination plants and water tankers to distribute drinking water to customers. As for wastewater, it was also estimated that almost 66%⁷ of the people had access to sewage collection systems. In terms of access to energy and electricity, Gaza is suffering a huge deficit in power supply; most of the population is experiencing blackouts for more than 15 hours a day. In terms of mobility infrastructure, movement is highly dependent on roads transport. In addition, Gaza does not have an airport, port, or railway system. Although in 1998, an airport was opened in Gaza for the movement of people

and goods but it was destroyed in 2000 at the beginning of the second intifada. The main crossing points between Gaza and Israel are Erez Crossing to the north and the commercial Karni crossing (opens and closes intermittently since 2011). The main crossing point between Gaza and Egypt is Rafah Crossing to the south. For connection with the outside world, Palestinians from Gaza rely on Egypt as a transit stop. Education and health services in Gaza prior to the crisis were suffering overcrowding and lack of financial resources.

In terms of economy, Gaza is considered an urban economy depending on internal trade, external aid, communication and movement of people. However, Gaza's economy is highly unsustainable due to the restrictions imposed on the movement of people and goods.

Moreover, Gaza is facing a number of environmental challenges including; desertification; salination of fresh water; lack of sewage treatment in many parts of the strip; water-borne disease; soil degradation; depletion and contamination of underground water resources.



The Gaza crisis in 2014, has impacted an already deteriorating humanitarian situation, a struggling governance sector, an overloaded infrastructure as a result of 8 years of blockade and continuous cycles of violence and political fragmentation.

In July 2014, the Israeli army launched a military operation in Gaza which lasted for seven weeks of air strikes and ground operations. The war has killed more than 2,100 Palestinians and displaced more than 500,000 persons at the height of conflict. It had also destructed more than 13,000 homes and affected another 100,000, in addition to damaging 261 schools and 77 health facilities. Moreover, the war has severely affected an already deteriorated infrastructure, water, electricity and sanitary systems. The war has also targeted and destroyed more than 220 industrial facilities and caused more than \$200,000 Million losses in the agricultural sector.⁸

1 "Gaza Crisis Appeal" - OCHA, 2014 and
"Detailed Infrastructure and Damage Assessment" - UNDP, 2014.

2 Ibid.

3 Ibid.

4 Ibid.

5 Ministry of Public Works and Housing.

6 "Detailed Infrastructure and Damage Assessment" - UNDP, 2014.

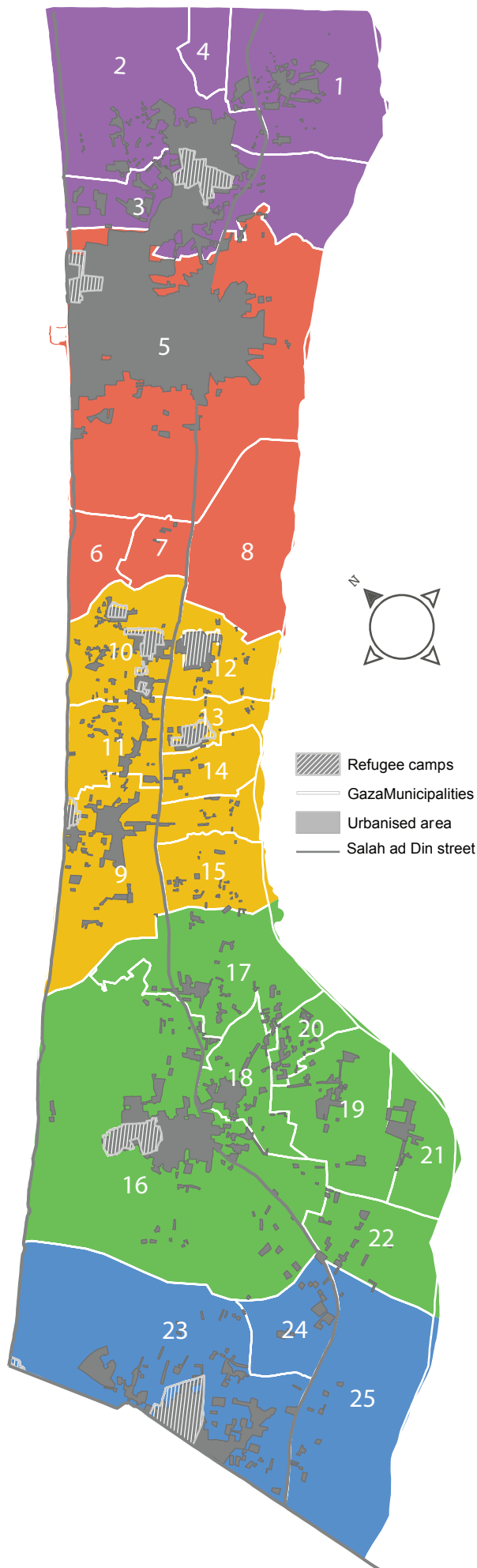
7 Ibid.

8 "Detailed Infrastructure and Damage Assessment" - UNDP, 2014.

1.2 Administrative Map of Gaza

Based on PCBS data from the 2007 census

| JSC for Solid Waste | | JSC for Development | |
|---------------------|----|---------------------|--------------|
| North Gaza 55 | 1 | Beit Hanun | 49 107 inh. |
| | 2 | Beit Lahiya | 83 195 inh. |
| | 3 | Jabalya | 51 073 inh. |
| | 4 | Umm an Naser | 3 628 inh. |
| Gaza 60 | 5 | Gaza | 549 070 inh. |
| | 6 | Al Mughraqa | 7 990 inh. |
| | 7 | Al Zahra | 3 771 inh. |
| | 8 | Wadi Gaza | 3 369 inh. |
| Deir al-Balah 65 | 9 | Deir al Balah | 67 727 inh. |
| | 10 | An Nuseirat | 45 616 inh. |
| | 11 | Az Zawayda | 21 074 inh. |
| | 12 | Al Bureij | 12 252 inh. |
| | 13 | Al Maghazi | 8 134 inh. |
| | 14 | Al Musaddar | 2 330 inh. |
| | 15 | Wadi as Salqa | 5 748 inh. |
| Khan Yunis 70 | 16 | Khan Yunis | 174 240 inh. |
| | 17 | Al Qarara | 24 149 inh. |
| | 18 | Bani Suheila | 38 727 inh. |
| | 19 | Abasan al Kabira | 22 493 inh. |
| | 20 | Abasan al Jadida | 7 410 inh. |
| | 21 | Khuza'a | 11 174 inh. |
| Rafah 75 | 22 | Al Fukhari | 6 766 inh. |
| | 23 | Rafah | 152 950 inh. |
| | 24 | An Naser | 7 923 inh. |
| | 25 | Ash Shoka | 13 480 inh. |



1.2a Refugee Camps

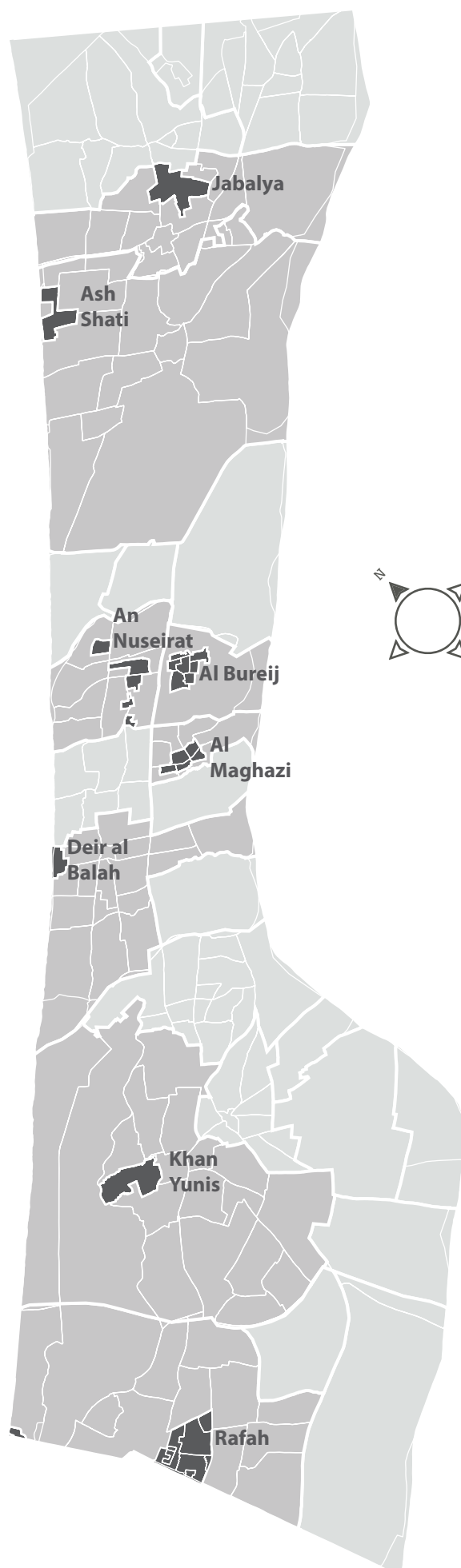
There are 8 refugee camps in Gaza (PCBS code)

| | | | | | |
|----|---|--------------------------|-------------|---------------------|----------------------------|
| 3 | a | Jabalya Camp | 54 123 inh. | 1.04km ² | 52 041 inh/km ² |
| 5 | b | Ash Shati (Beach) Camp | 42 349 inh. | 0.82km ² | 51 645 inh/km ² |
| 10 | c | An Nuseirat Camp | 34 950 inh. | 0.96km ² | 36 406 inh/km ² |
| 12 | d | Al Bureij Camp | 29 867 inh. | 0.73km ² | 40 914 inh/km ² |
| 9 | e | Deir al Balah Camp | 8 009 inh. | 0.18km ² | 33 371 inh/km ² |
| 13 | f | Al Maghazi Camp | 19 998 inh. | 0.55km ² | 36 360 inh/km ² |
| 16 | g | Khan Yunis Camp | 46 059 inh. | 1.00km ² | 46 059 inh/km ² |
| 23 | h | Rafah Camp | 43 405 inh. | 1.36km ² | 31 915 inh/km ² |

There are 8 refugee camps in Gaza strip with a population of 278,641 residents (PCBS census 2007). Ash Shati and Jabalya Camps are considered the largest and the most dense with densities exceeding 50,000 inh/km². Gaza camps are characterized with high levels of poverty, poor infrastructure and lack of services.

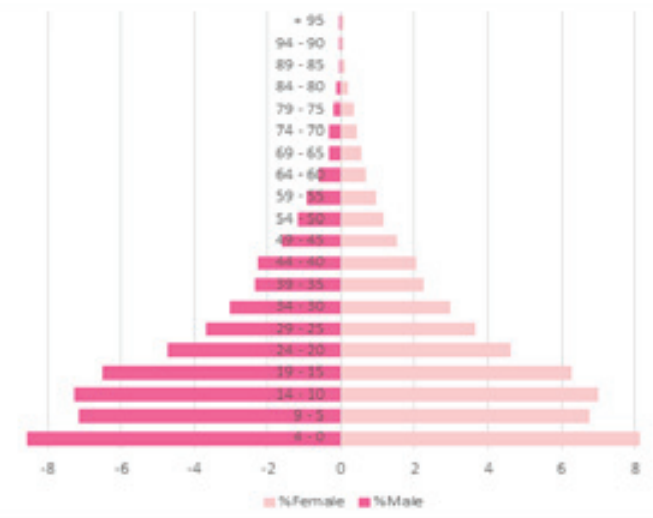
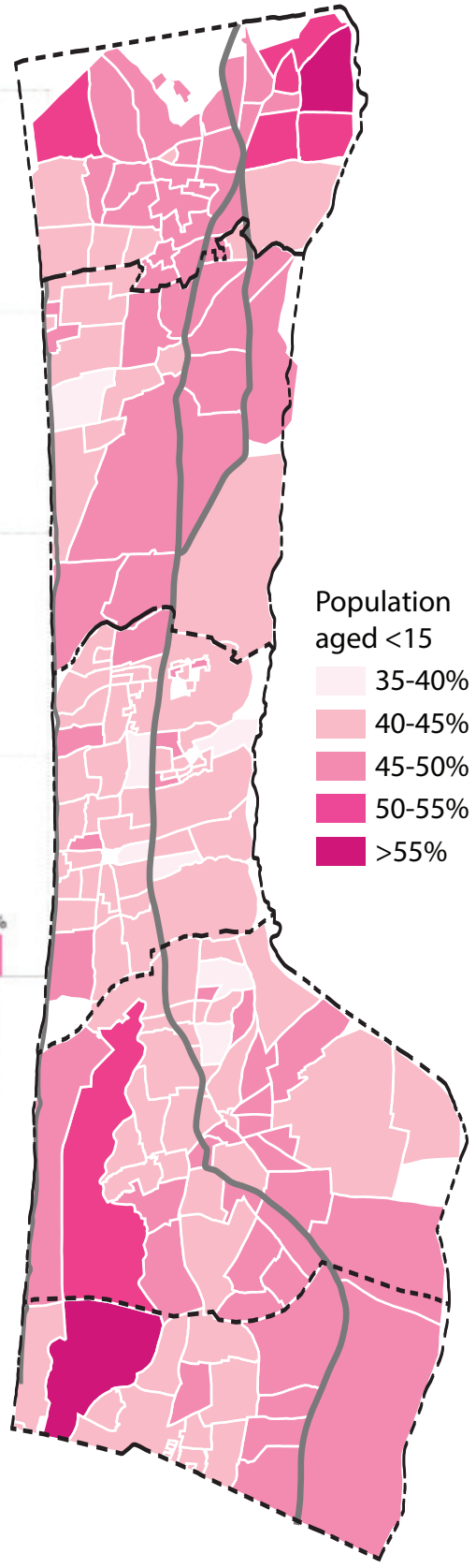
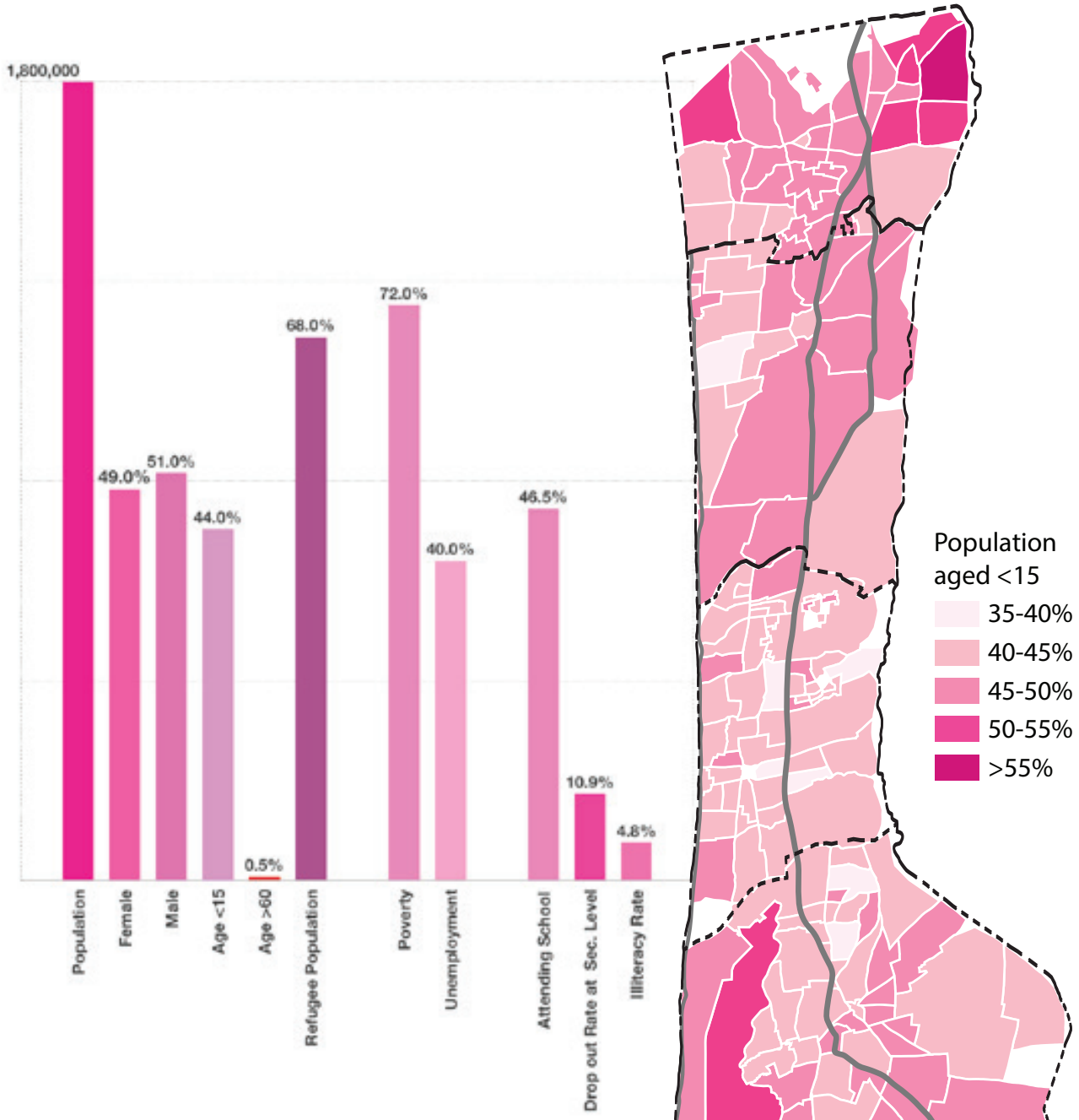
Joint Service Councils (JSC)

As shown on the table to the left, in Gaza, there are two multi-purpose councils, and two single-purpose councils for solid waste management. The single-purpose councils are more operational, and the JSC for Solid Waste in the "middle area" (D) serves all 13 municipalities in the governorates of Deir al-Balah and Khan Yunis.



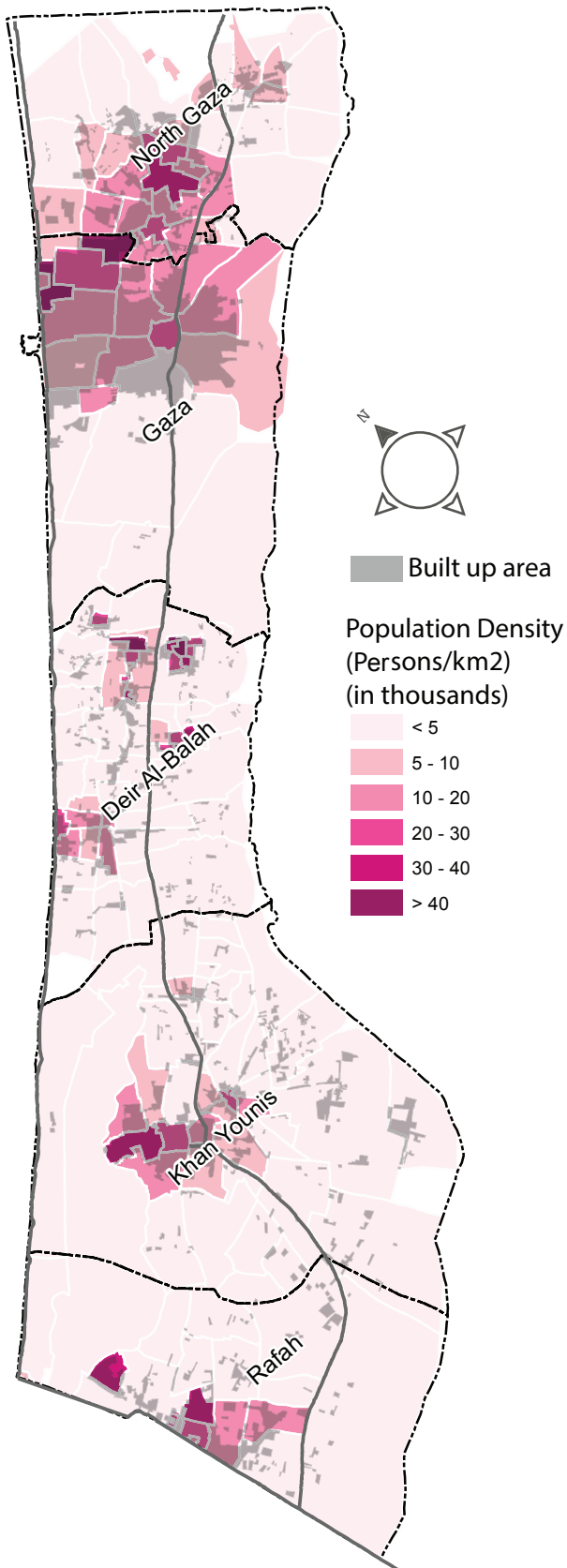
1.3 Demographic Statistics Based on PCBS data from the 2007 census

1.3a Population Characteristics



Gaza has a young population, and the median age is 18 (compared to a world average of 28). At the time of the 2007 census, around 45% of the population was below 15 years of age. This underlines the importance of including children and their needs in planning and recovery effort.

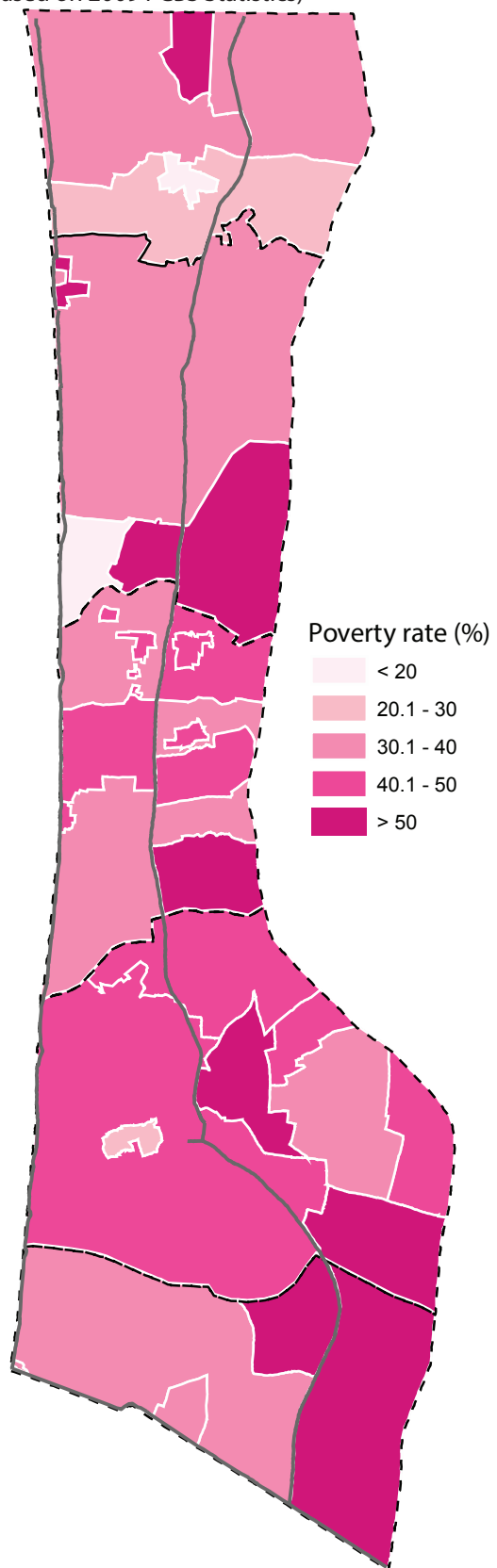
1.3b Population Density



The map shows that the most dense areas in Gaza are Refugee Camps with densities that exceed 40,000 persons /km², followed by the main cities of Gaza, Jabalya, Deir Al Balah, Khan Younis and Rafah Governorates with densities that range between 20,000 to 40,000 persons /Km²

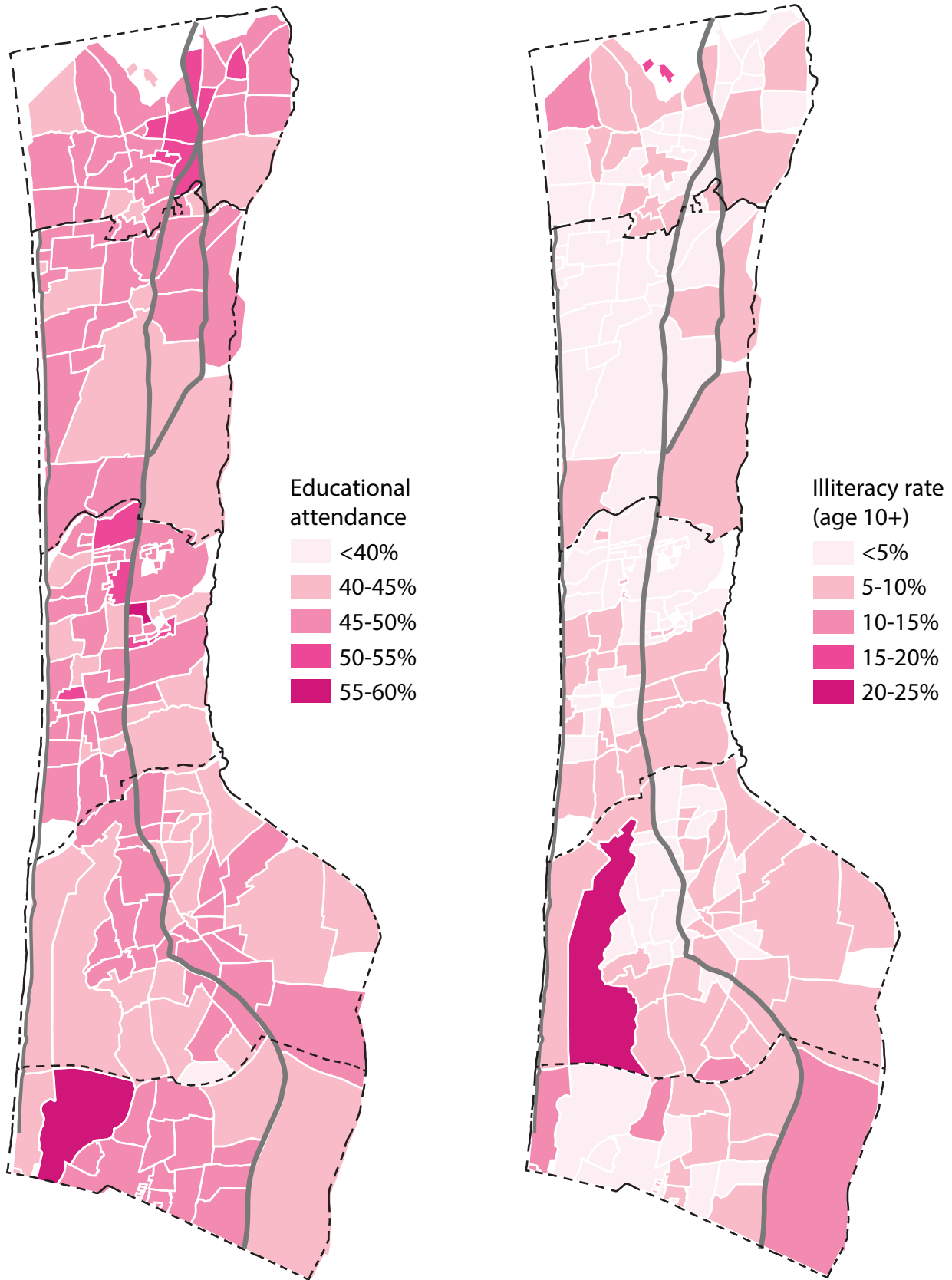
1.3c Poverty

(Based on 2009 PCBS Statistics)



The map shows that poverty is more prevailing in the middle and southern governorates (i.e Deir Al Balah, Khan Younis and Rafah, in addition to Southern Gaza (Johr Al Diek) and Umm an Naser in North Gaza. Poverty in these areas is extreme with rates that exceed 40% of families living below Gaza poverty line.

1.3d Educational Attendance, Literacy Rate

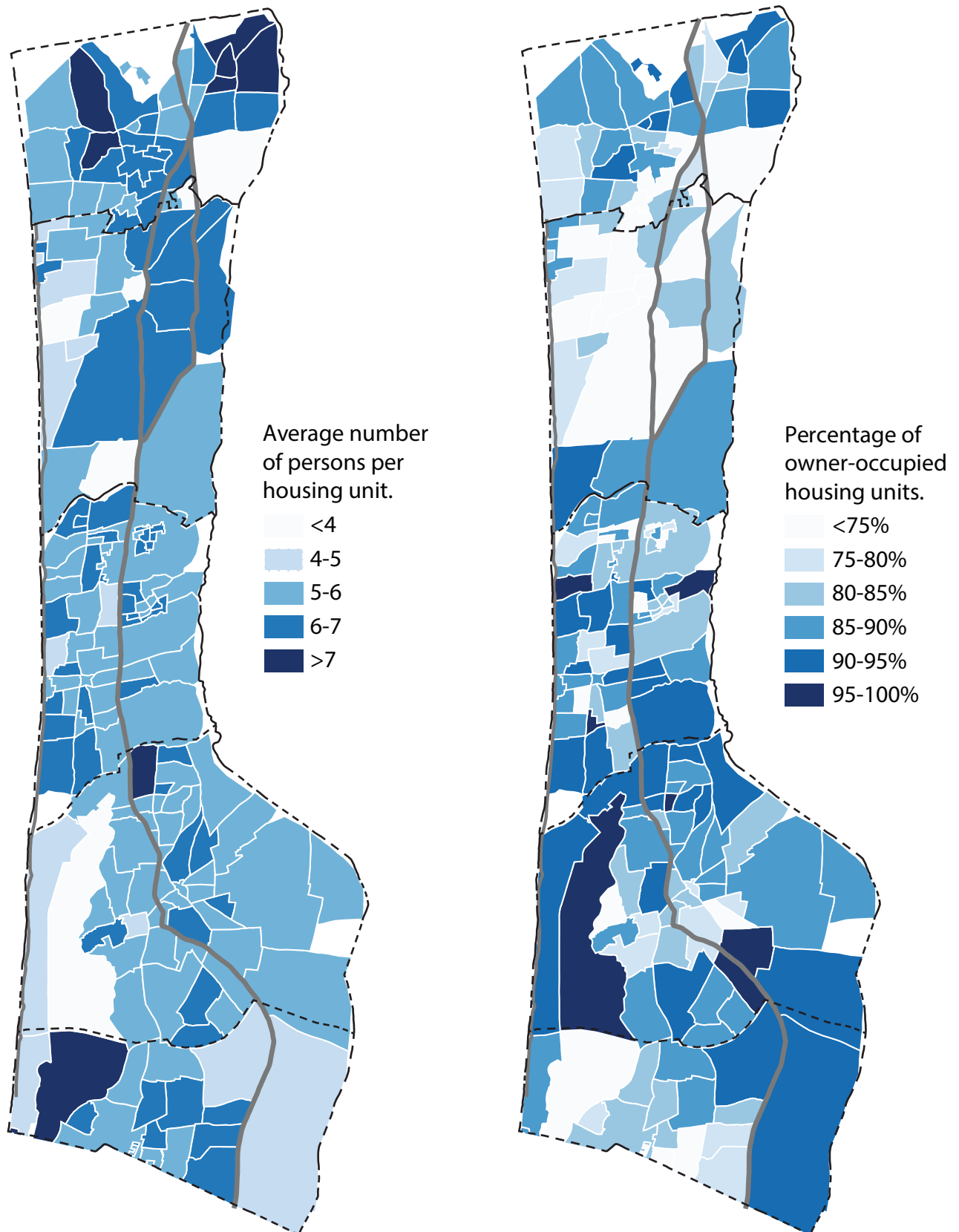


The map above shows the percentage of children above 5 years of age attending school at the time of the 2007 census. The percentage is marginally higher for boys (47%) compared to girls (46%). The regional average is low (46.5%), and school attendance is higher in urban areas than in rural.

Female illiteracy is more than twice as high as male illiteracy in Gaza. According to data from the 2007 census, 4.8% of the population above 10 years is illiterate, and the percentage is higher in rural than in urban areas. The illiteracy rate is highest in the two southernmost governorates.

1.4 Housing Statistics Based on PCBS data from the 2007 census

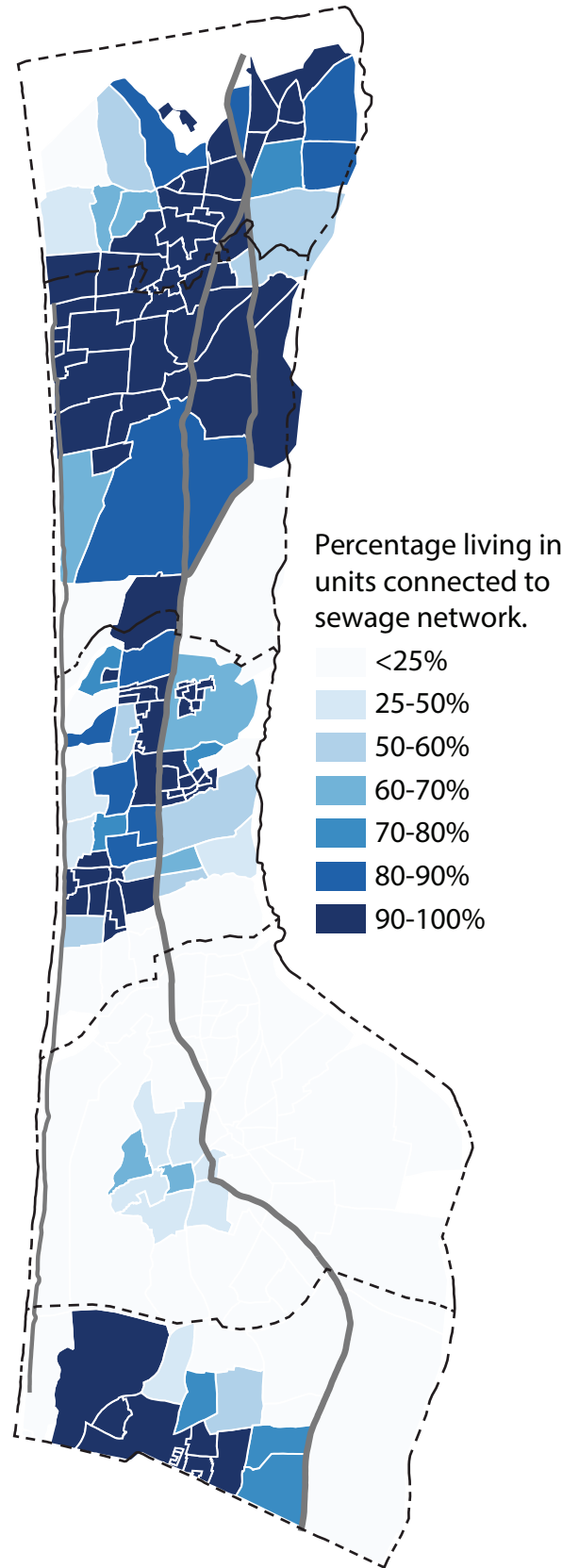
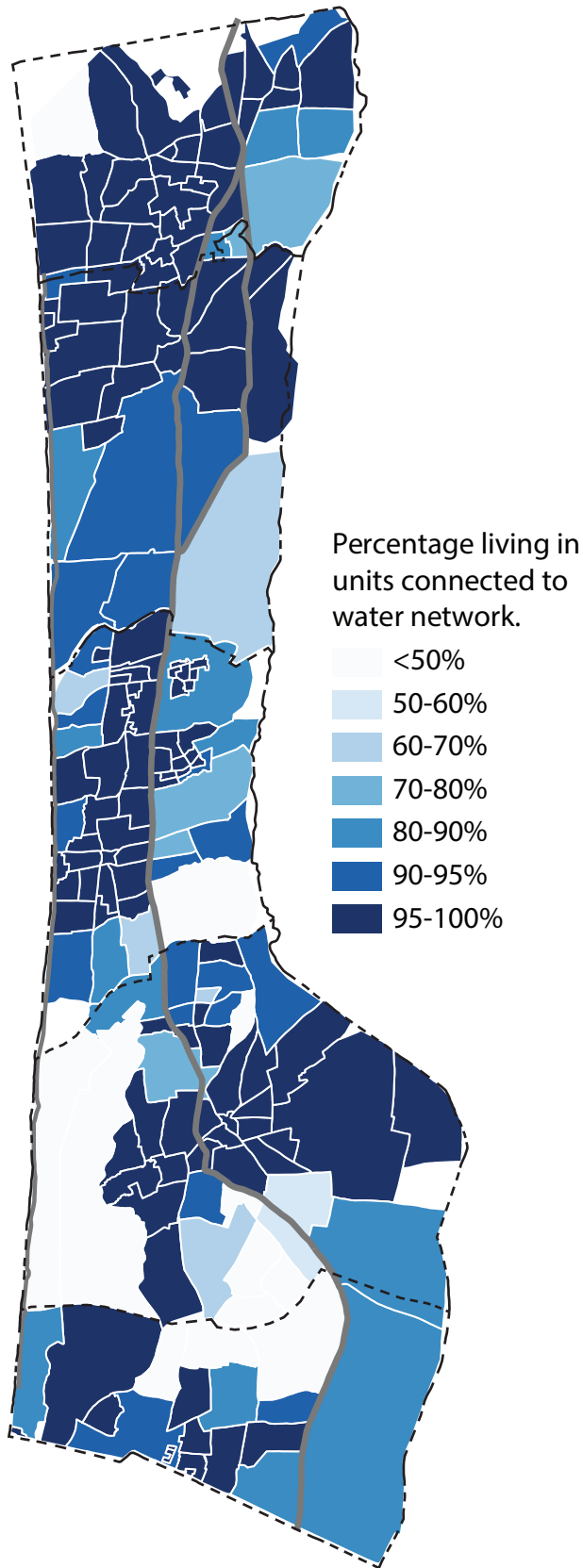
1.4a Overcrowding and Tenure



The number of persons per housing unit can be an indicator of overcrowding. Parts of Beit Hanun and Beit Lahiya average more than 7 persons per unit. Eastern parts of Gaza city are all above the regional average of 5.77. Refugee camps also have high numbers of persons per housing unit.

Around 80% of the housing units in Gaza were owner-occupied at the time of the 2007 census. Families who lost rented shelter can be more vulnerable and difficult to target for shelter support. Gaza city has a higher concentration of rented units than the rest of the Gaza Strip.

1.4b Connection to Water/Sewage Networks



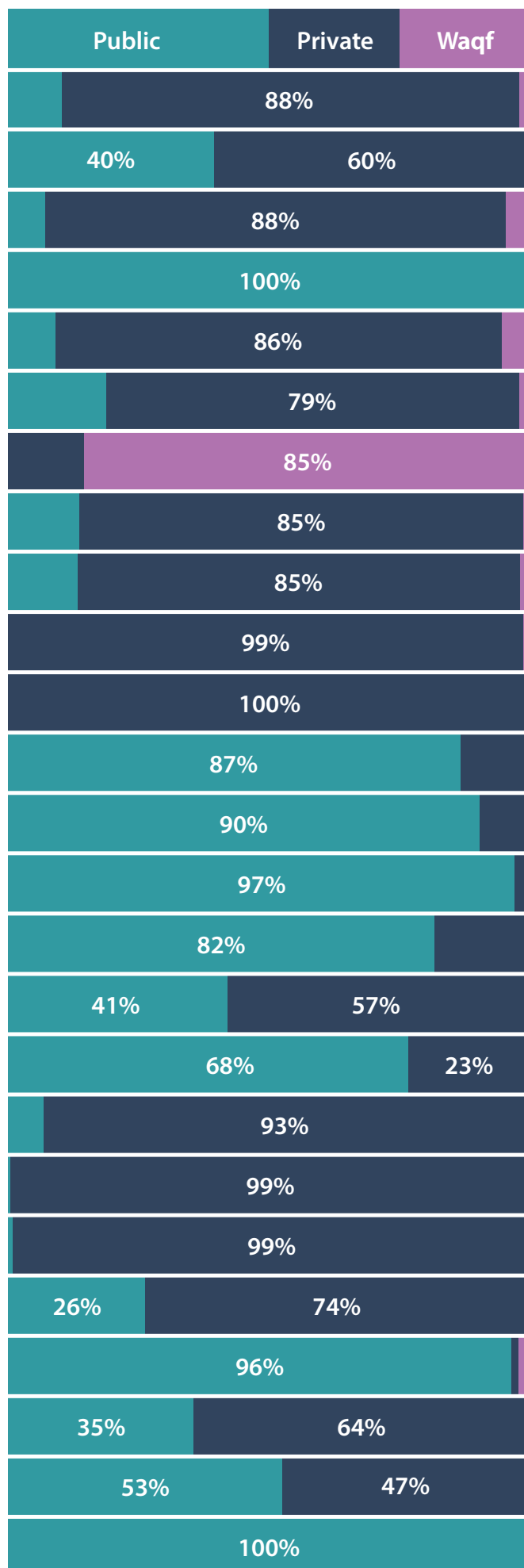
In 2007, 96% of the inhabitants in Gaza were living in housing units connected to public water networks. The households without connections are mainly in rural areas, while urban centres (Beit Lahiya, Beit Hanun, Gaza, Deir al-Balah, Khan Yunis and Rafah) were close to full coverage.

Connections to sewage networks were less established, and included 78% of inhabitants. The percentage is lowest in Khan Yunis governorate, both in urban and rural areas (average of 27%), but also eastern parts of Deir al-Balah and Rafah governorates were lacking sewage connections.

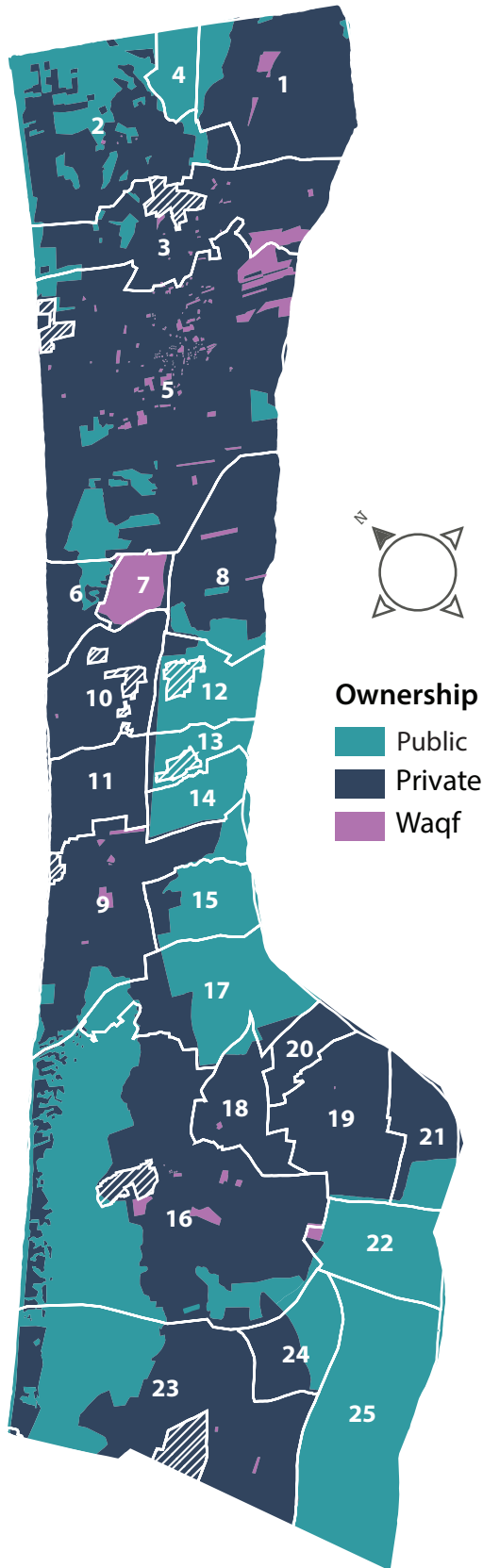
1.5 Land Ownership

Percentage owned by public/private/waqf

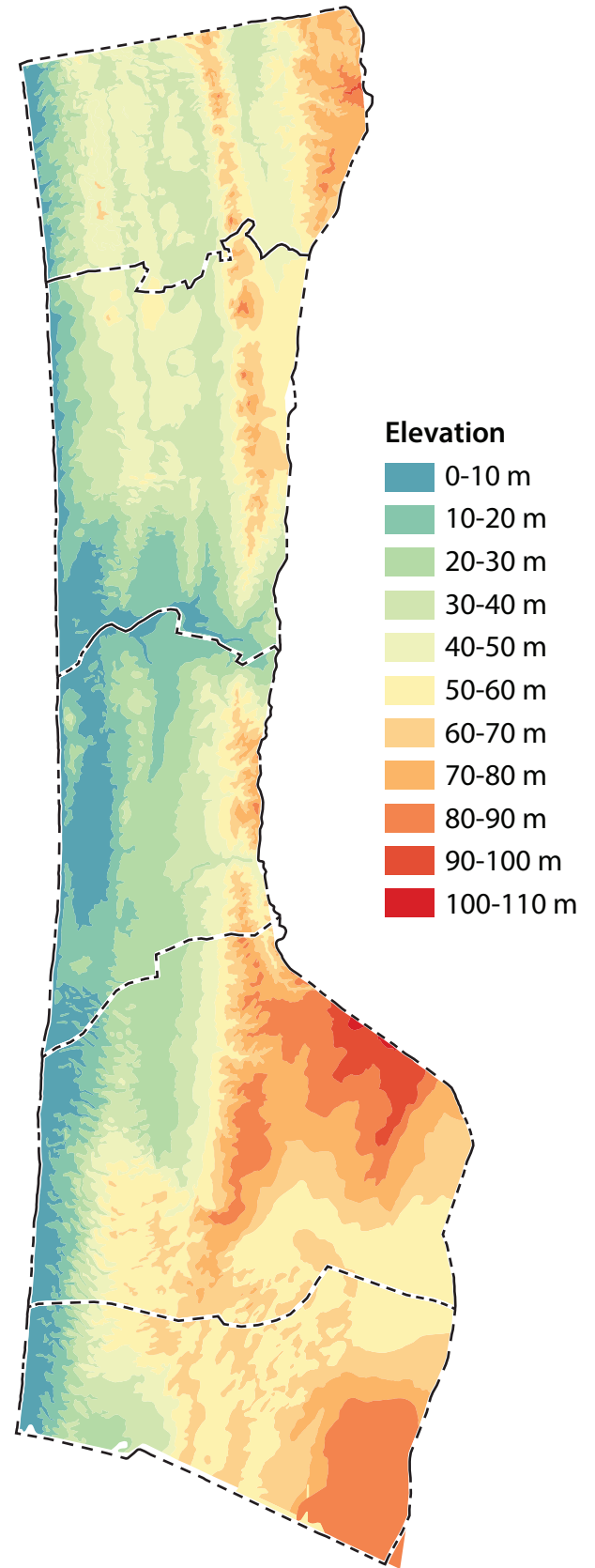
| North Gaza | 1 | Beit Hanun | 18.1 km ² |
|---------------|----|------------------|----------------------|
| | 2 | Beit Lahiya | 22.6 km ² |
| | 3 | Jabalya | 18.1 km ² |
| | 4 | Umm an Naser | 3.0 km ² |
| Gaza | 5 | Gaza | 52.4 km ² |
| | 6 | Al Mughraqa | 4.4 km ² |
| | 7 | Al Zahra | 3.3 km ² |
| | 8 | Wadi Gaza | 14.2 km ² |
| Deir al-Balah | 9 | Deir al Balah | 18.6 km ² |
| | 10 | An Nuseirat | 9.2 km ² |
| | 11 | Az Zawayda | 6.9 km ² |
| | 12 | Al Bureij | 6.2 km ² |
| | 13 | Al Maghazi | 3.4 km ² |
| | 14 | Al Musaddar | 4.4 km ² |
| | 15 | Wadi as Salqa | 6.4 km ² |
| Khan Yunis | 16 | Khan Yunis | 53.5 km ² |
| | 17 | Al Qarara | 14.3 km ² |
| | 18 | Bani Suheila | 6.8 km ² |
| | 19 | Abasan al Kabira | 12.6 km ² |
| | 20 | Abasan al Jadida | 3.3 km ² |
| | 21 | Khuza'a | 6.7 km ² |
| | 22 | Al Fukhari | 9.2 km ² |
| Rafah | 23 | Rafah | 32.6 km ² |
| | 24 | An Naser | 6.6 km ² |
| | 25 | Ash Shoka | 22.6 km ² |



Map of municipalities and land ownership, based on data from the Ministry of Planning (MOPAD).



Topographic map.



According to this map, the majority of land in Gaza is privately owned (63%). Around 2% of the land is classified as Waqf (properties donated for religious or charitable purposes). The remaining 35 % are public lands.

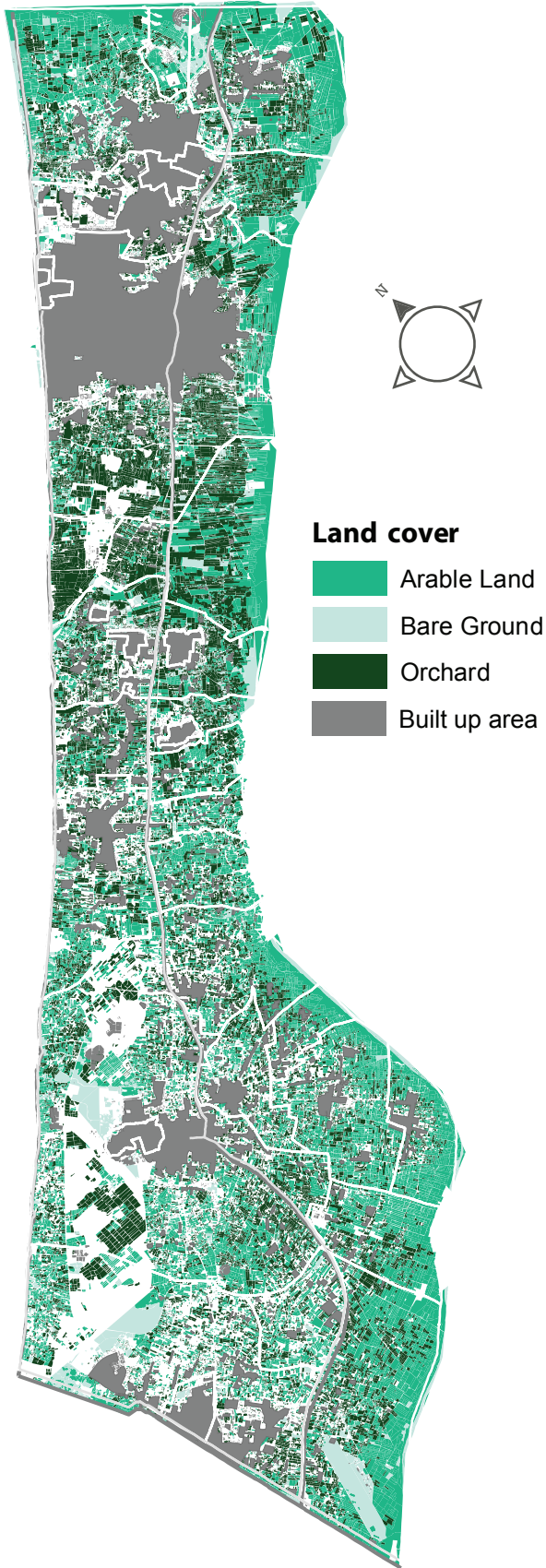
The Gaza Strip is relatively flat, with elevations ranging from 0-110 metres above sea level. The highest areas are found in eastern parts of Khan Yunis Governorate. The lowest areas are in the west, and along the border between Gaza and Deir al-Balah governorates (Wadi Gaza).

1.6 Land Cover

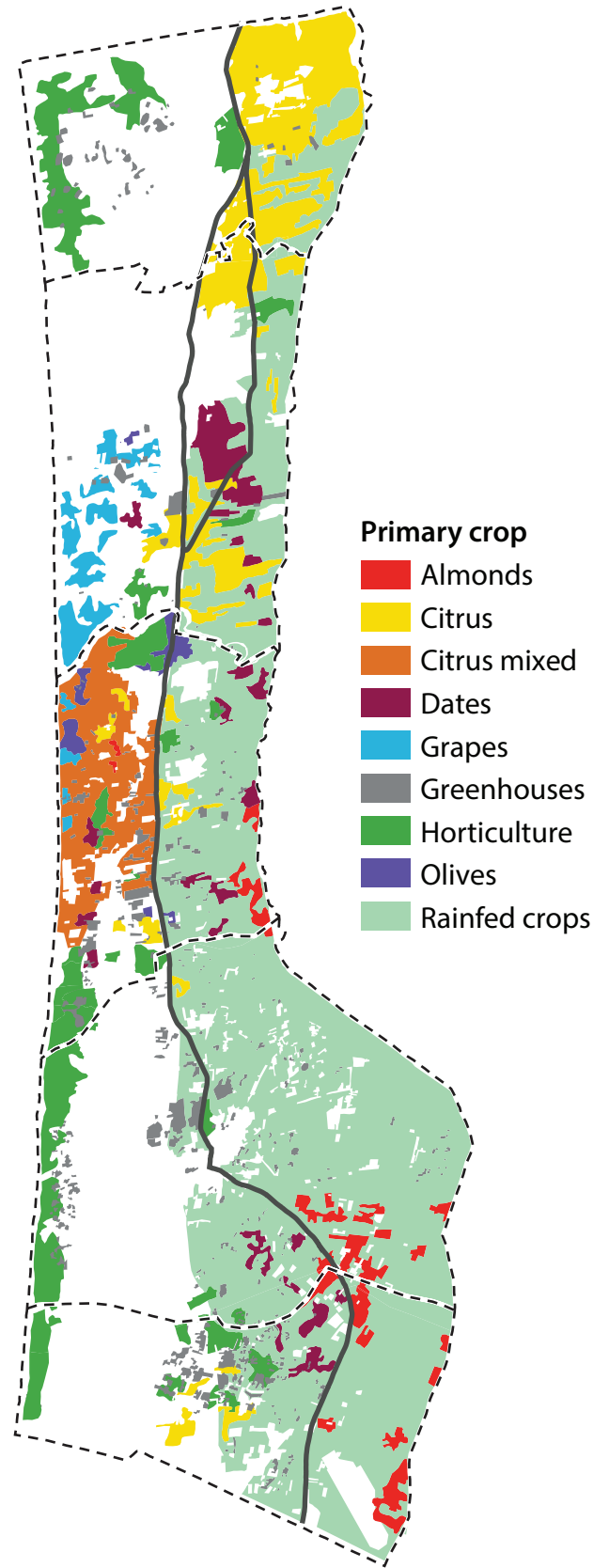
Percentage of urbanised, bare and arable land

| | | | | 45% - Urbanised | Bare | Arable - 42% |
|---------------|----|------------------|----------------------|-----------------|------|--------------|
| North Gaza | 1 | Beit Hanun | 18.1 km ² | 30% | | 48% |
| | 2 | Beit Lahiya | 22.6 km ² | 35% | | 46% |
| | 3 | Jabalya | 18.1 km ² | 52% | | 38% |
| | 4 | Umm an Naser | 3.0 km ² | 34% | | 25% |
| Gaza | 5 | Gaza | 52.4 km ² | 56% | | 34% |
| | 6 | Al Mughraqa | 4.4 km ² | 41% | | 58% |
| | 7 | Al Zahra | 3.3 km ² | 26% | | 68% |
| | 8 | Wadi Gaza | 14.2 km ² | 17% | | 62% |
| Deir al-Balah | 9 | Deir al Balah | 18.6 km ² | 48% | | 47% |
| | 10 | An Nuseirat | 9.2 km ² | 41% | | 44% |
| | 11 | Az Zawayda | 6.9 km ² | 39% | | 57% |
| | 12 | Al Bureij | 6.2 km ² | 19% | | 56% |
| | 13 | Al Maghazi | 3.4 km ² | 38% | | 49% |
| | 14 | Al Musaddar | 4.4 km ² | 30% | | 65% |
| | 15 | Wadi as Salqa | 6.4 km ² | 33% | | 60% |
| Khan Yunis | 16 | Khan Yunis | 53.5 km ² | | | 41% |
| | 17 | Al Qarara | 14.3 km ² | 39% | | 54% |
| | 18 | Bani Suheila | 6.8 km ² | 50% | | 43% |
| | 19 | Abasan al Kabira | 12.6 km ² | 29% | | 67% |
| | 20 | Abasan al Jadida | 3.3 km ² | 28% | | 58% |
| | 21 | Khuza'a | 6.7 km ² | 28% | | 60% |
| | 22 | Al Fukhari | 9.2 km ² | 32% | | 66% |
| Rafah | 23 | Rafah | 32.6 km ² | | | 28% |
| | 24 | An Naser | 6.6 km ² | 46% | | 51% |
| | 25 | Ash Shoka | 22.6 km ² | 21% | | 58% |

Map of land cover - urban/agriculture/bare land.
Based on ECHO mapping of agricultural damage.



Map showing primary crops and their location.
Data obtained from UNRWA. Date unknown.



According to this map, 45% of Gaza Strip is covered by buildings and roads, while 42% is agricultural land. Bare land (12%) is found mainly in the access-restricted area along the border. Data discrepancies occur for the abandoned settlement area in Khan Yunis (16) and Rafah (23).

Major agricultural products in Gaza include citrus, dates, olives and flowers. Rainfed crops (e.g. potatoes, cereals, cabbage, peas) are found mainly in the south-east. Shortage of water and export restrictions have had severe negative impacts on the sector's productivity and economy.

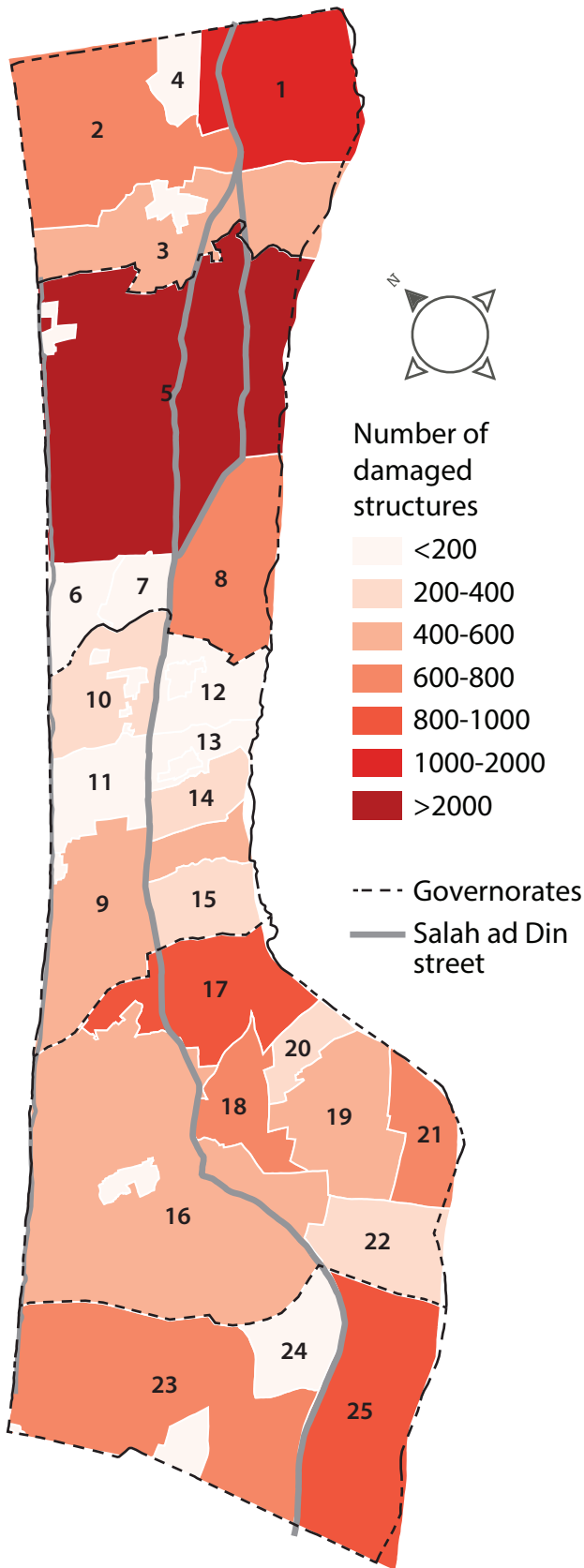
2. GAZA STRIP, POST CRISIS SITUATION

2.1a Damaged Structures

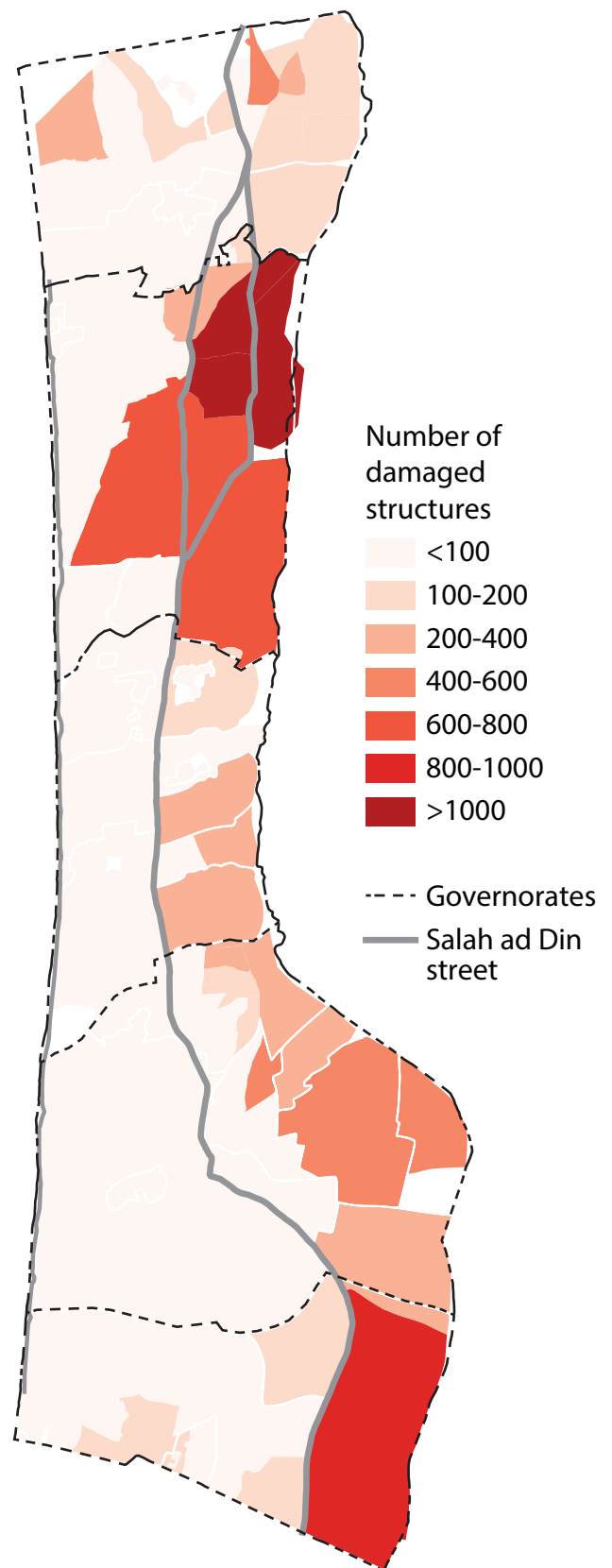
Based on data from UNOSAT assessments.

| | | | Sum | Fully | Partially | Minor | /km ² |
|----|-------------------|----------------------|------|-------|-----------|-------|------------------|
| 5 | Gaza | 52.4 km ² | 3546 | 37% | 28 | 35 | 68 |
| 1 | Beit Hanun | 18.1 km ² | 1584 | 41% | 28 | 31 | 88 |
| 17 | Al Qarara | 14.3 km ² | 951 | 46% | 16 | 38 | 66 |
| 25 | Ash Shoka | 22.6 km ² | 824 | 61% | 18 | 21 | 36 |
| 8 | Wadi Gaza | 14.2 km ² | 800 | 79% | 11 | 10 | 56 |
| 23 | Rafah | 32.6 km ² | 724 | 45% | 22 | 33 | 22 |
| 2 | Beit Lahiya | 22.6 km ² | 716 | 48% | 21 | 31 | 32 |
| 18 | Bani Suheila | 6.8 km ² | 702 | 32% | 28 | 40 | 103 |
| 21 | Khuza'a | 6.7 km ² | 601 | 56% | 24 | 20 | 89 |
| 19 | 'Abasan al Kabira | 12.6 km ² | 583 | 50% | 22 | 27 | 46 |
| 16 | Khan Yunis | 53.5 km ² | 579 | 37% | 23 | 40 | 11 |
| 9 | Deir al Balah | 18.6 km ² | 557 | 46% | 16 | 38 | 30 |
| 3 | Jabalya | 18.1 km ² | 539 | 37% | 22 | 41 | 30 |
| 20 | 'Abasan al Jadida | 3.3 km ² | 311 | 32% | 23 | 45 | 93 |
| 14 | Al Musaddar | 4.4 km ² | 287 | 69% | 14 | 17 | 65 |
| 15 | Wadi as Salqa | 6.4 km ² | 277 | 44% | 23 | 32 | 43 |
| 22 | Al Fukhari | 9.2 km ² | 277 | 54% | 23 | 23 | 30 |
| 10 | An Nuseirat | 9.2 km ² | 251 | 37% | 22 | 41 | 27 |
| 11 | Az Zawayda | 6.9 km ² | 153 | 24% | 27 | 49 | 22 |
| 12 | Al Bureij | 6.2 km ² | 150 | 36% | 29 | 35 | 24 |
| 24 | An Naser | 6.6 km ² | 134 | 36% | 22 | 42 | 20 |
| 4 | Umm an Naser | 3.0 km ² | 113 | 50% | 33 | 18 | 38 |
| 13 | Al Maghazi | 3.4 km ² | 62 | 29% | 39 | 32 | 19 |
| 7 | Al Zahra | 3.3 km ² | 60 | 23% | 32 | 45 | 18 |
| 6 | Al Mughraqa | 4.4 km ² | 17 | 47% | 6 | 47 | 4 |

Intensity of Damaged Structures per municipality



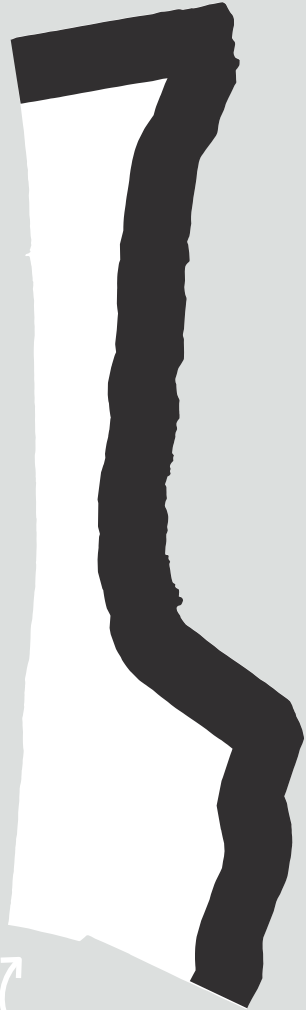
Intensity of Damaged Structures per neighborhoods



While damages occur in all municipalities, some are more heavily affected than others. Gaza city and Beit Hanun top the list when it comes to the number of structures (identified on satellite imagery), but municipalities in the governorates of Khan Yunis and Rafah also feature prominently.

When the mapping of structural damages is broken down into smaller areas (in this case the statistical divisions from PCBS), a pattern emerges showing a higher concentration of damage within a 3 km buffer to the east of Salah ad Din street and along the northern border.

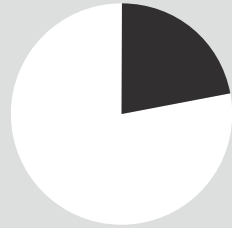
2.1b Heat Map



165km²
+ 195km²
= 360km²



45%
of Gaza area



21%
of Gaza buildings¹



71%
of damaged buildings²

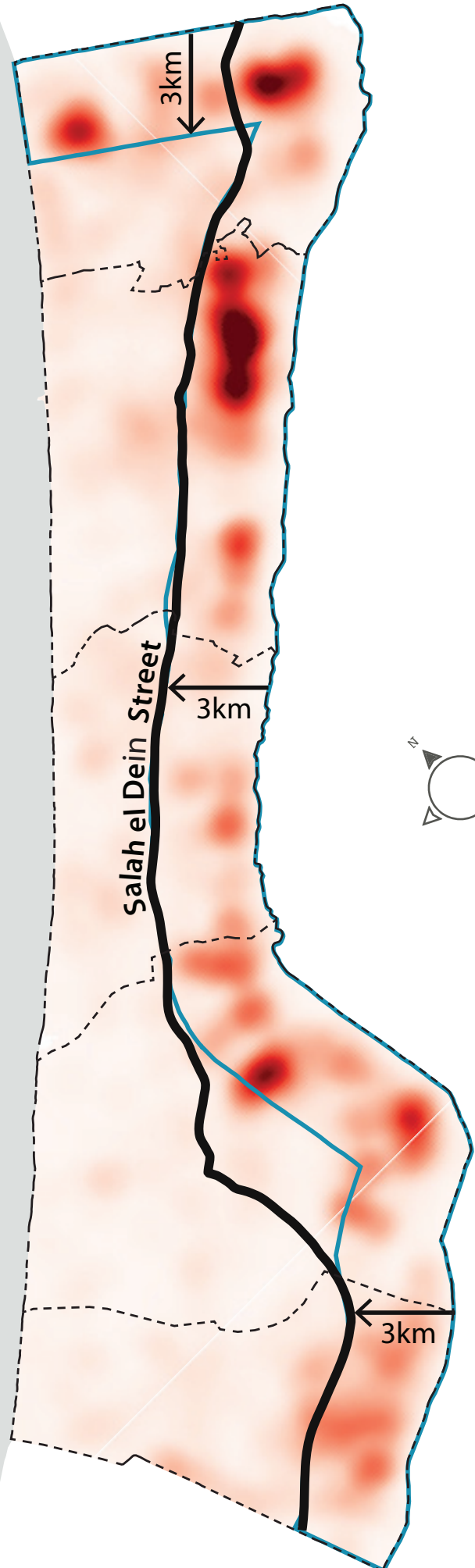
¹ Based on building outlines digitised by the Ministry of Planning and Development.

² Percentage of damaged structures (including destroyed, severely and moderately damaged) mapped by UNOSAT on the basis of Pleiades satellite imagery from August 27-28, 2014.

Damaged structures per km²

| | | | |
|--|-----------|--|-----------|
| | 0 - 50 | | 300 - 350 |
| | 50 - 100 | | 350 - 400 |
| | 100 - 150 | | 400 - 450 |
| | 150 - 200 | | 450 - 500 |
| | 200 - 250 | | > 500 |
| | 250 - 300 | | |

- International boundary
- Salah el Dein Street
- 3km buffer from Israeli border



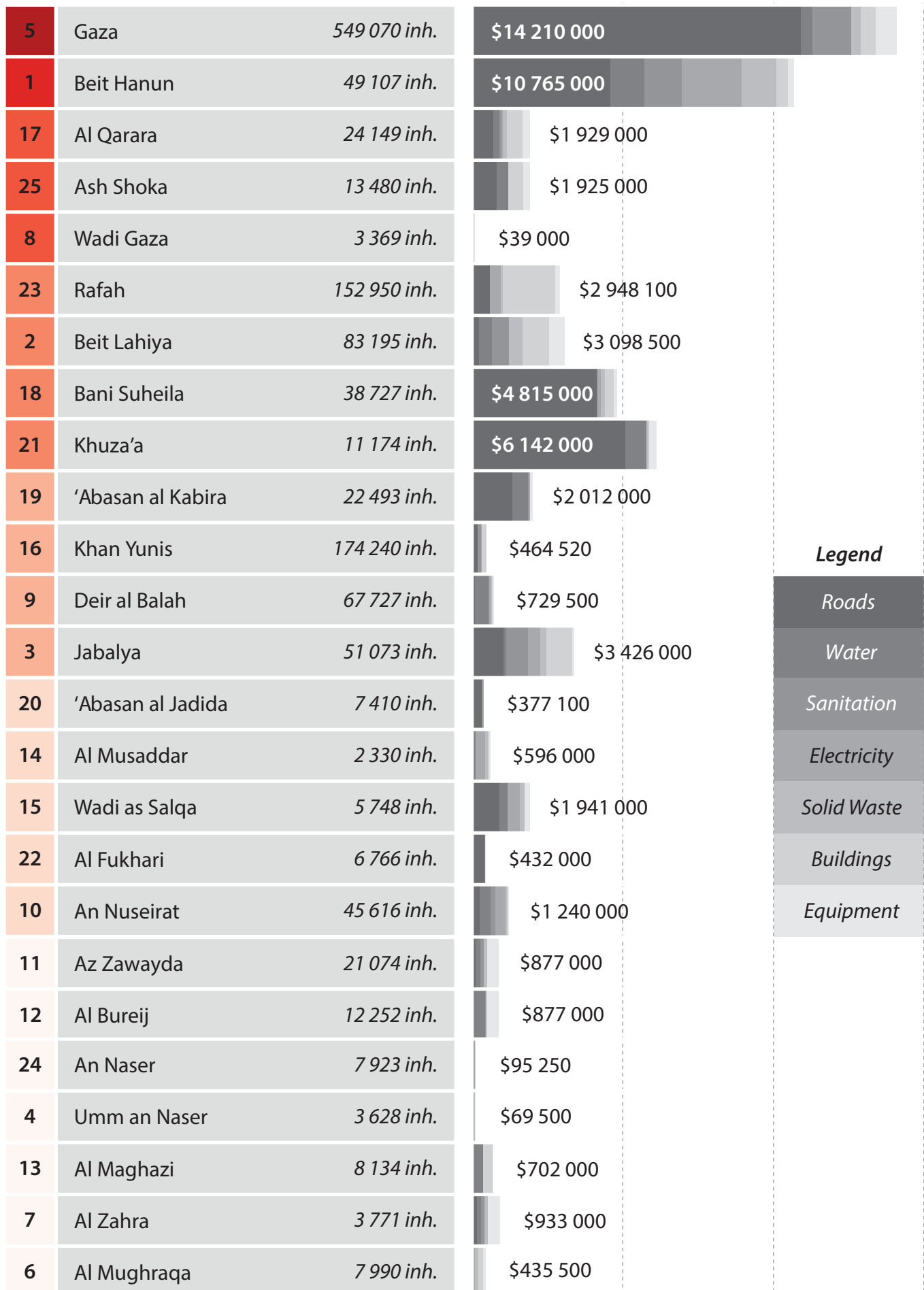
2.2 Municipalities Assessment of Urgent Needs

Based on quick, internal damage assessment, July 2014

\$ 5 000 000

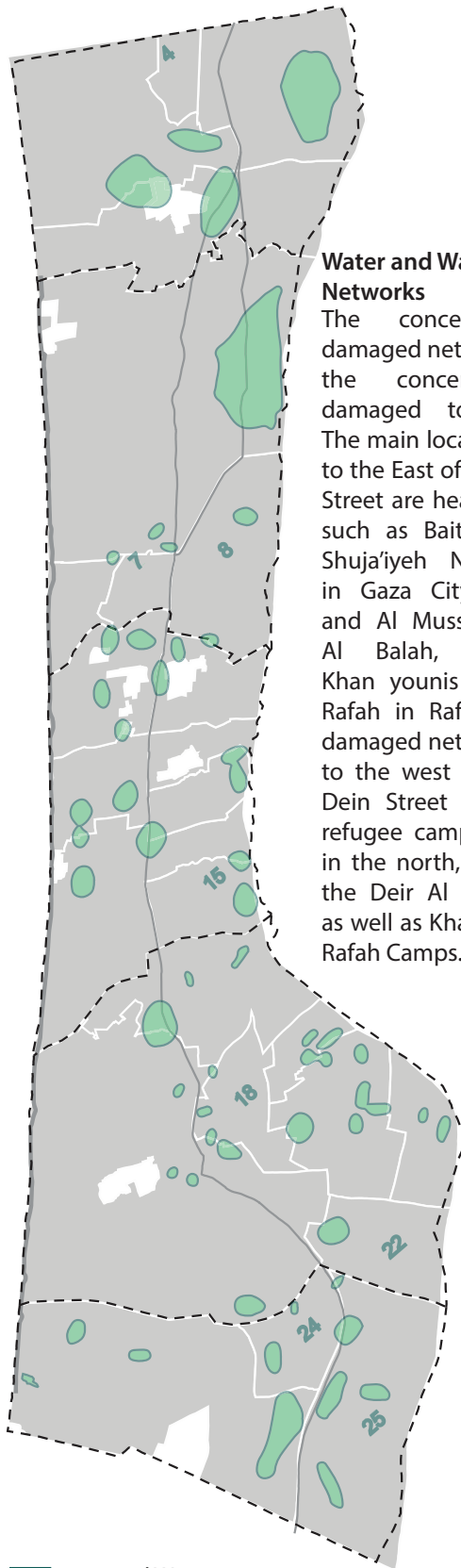
\$10 000 000

\$15 000 000



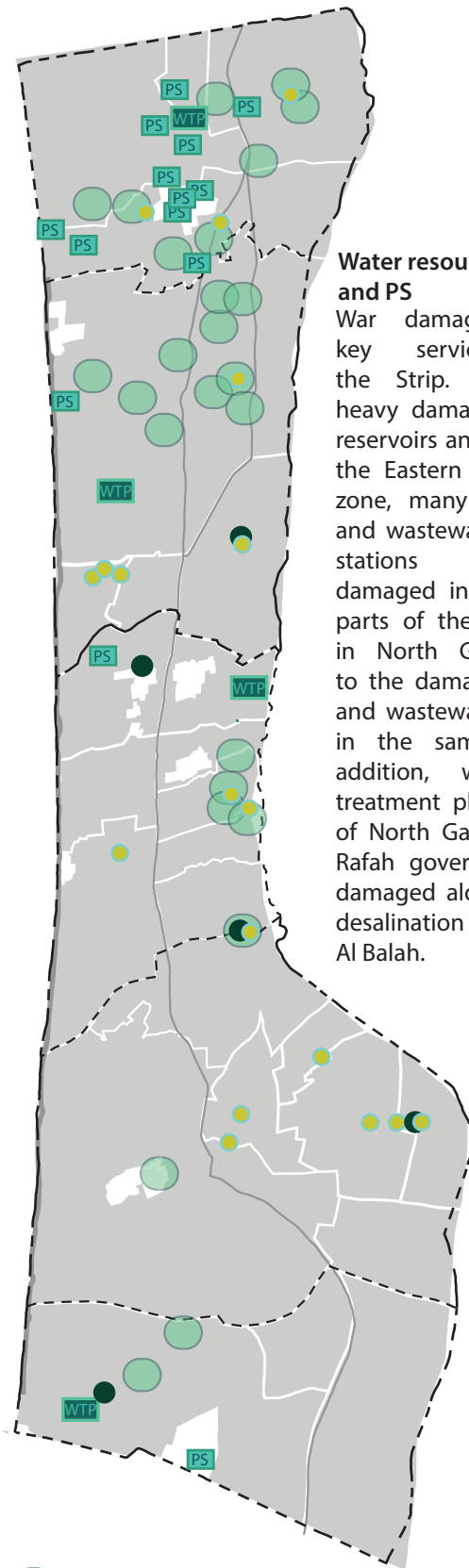
2.3 Damaged Infrastructure

Based on data from CMWU, 2014



Water and Wastewater Networks

The concentration of damaged networks mirrors the concentration of damaged structures. The main localities that fall to the East of Salah El Dein Street are heavily affected, such as Bait Hanoun, Al Shuja'iyeh Neighborhood in Gaza City, Al Qarara and Al Mussadar in Deir Al Balah, Khuza'a in Khan younis and Eastern Rafah in Rafah. However, damaged networks extend to the west of Salah el Dein Street affecting the refugee camps of Jabalya in the north, and most of the Deir Al Balah Camps as well as Khan Younis and Rafah Camps.



Water resources, WWTP and PS

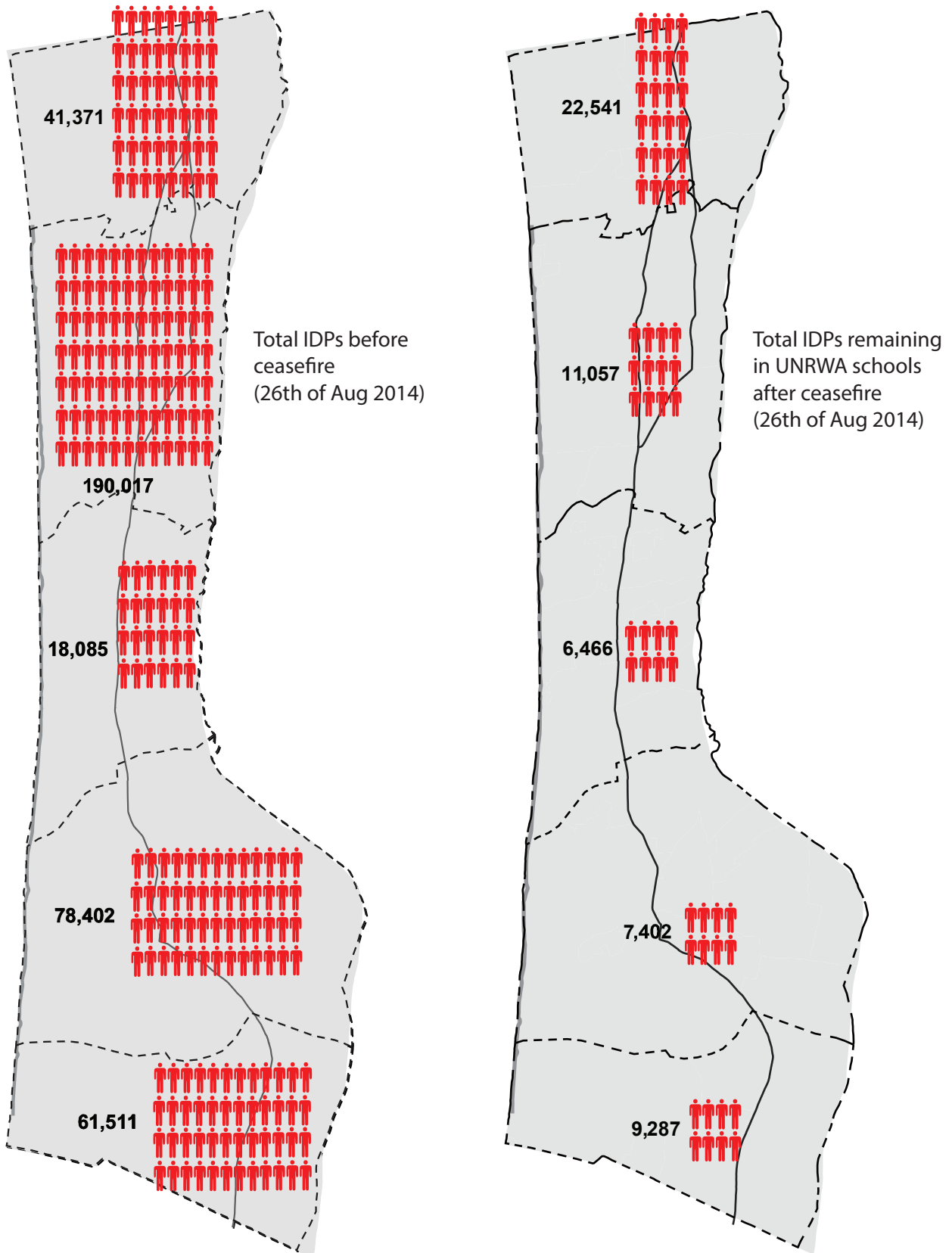
War damages affected key services all over the Strip. Besides the heavy damages of water reservoirs and wells along the Eastern 3 Km buffer zone, many water wells and wastewater pumping stations (PS) were damaged in the western parts of the buffer zone in North Gaza, parallel to the damages of water and wastewater networks in the same areas. In addition, waste water treatment plants (WWTP) of North Gaza, Gaza and Rafah governorates were damaged along with two desalination plants in Deir Al Balah.

- Damaged Water and Wastewater Network
- Governorates
- Salah al Dein Street
- Refugee Camps

- Damaged Water Wells
- Damaged Water Tank
- Damaged Desalination Plant
- Damaged Wastewater Pumping Station PS
- Damaged WWTP

2.4 Displacement Situation

Based on OCHA data



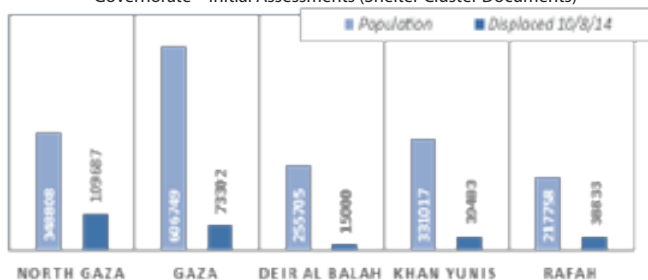
IDPs movement between places depended on many factors such as; the severity of attacks in the targeted locations during the crisis, the adequacy of the living conditions in temporary shelters or with host families, the potentials to find alternative accommodation, or return to original houses. Therefore, IDPs concentration and distribution across the various localities within the Strip differed significantly between the onset of the assault, the height of the conflict and after the ceasefire. IDP's concentration is also expected to change along the process of reconstruction. It may be difficult also to track all IDPs temporary movement, especially those residing with host families. As of October 18th, 2014, the number of IDPs residing in 18 UNRWA Schools were estimated to be 42,500. In addition, the Ministry of Social Affairs estimated that additional 47,000 IDPs are residing with host families.

2.5 Summary of Findings

Affected Population and Displacement:

At the height of the conflict IDPs reached 500,000 comprising 28% of Gaza population. As of October 18, 2014, the remaining IDPs at temporary collective shelters (18 UNRWA Schools) are estimated to be 42,500 IDPs, while 47,000 IDPs¹ are residing with host families. The majority of IDPs have managed either to return their partially damaged houses or found alternative accommodation (i.e temporary, pre-fabricated, rented) accommodation. Although, the pattern of displacement is not mapped, a general pattern of displacement from the Eastern side towards the Western side of the strip has been witnessed.

Number of displaced population to total population in each Governorate - Initial Assessments (Shelter Cluster Documents)



Most Affected Areas:

The concentration of damages was within the 3 km buffer zone East of Salah El Dein Street that runs the Strip from north to south, and along the northern border. 71% of the damaged buildings are located within this 3km zone. The most affected communities with concentrated damages were A) Beit Hanoun, Beit Lahia, East Jabalya in North Gaza; B) Gaza City (Shijaiya and Al Zaitoon neighbourhoods), Wad Gaza (Joher Al Dick) in addition to multi-storey buildings in different neighbourhoods in Gaza; C) Wadi Gaza (Al-Bureij, AlNusairat Camps) and Deir Al Balah, Al Musaddar, Al Maghazi Camps in Deir Al Balah; D) Khuza'a, Al Qarara and Bani Suhaila in Khan Yunis, and E) East Rafah (Ashoka) in Rafah². Ranking Al Shijaiya (Gaza City), Beit Hanoun, Al Qarara, Ashoka and Wadi Gaza to be the most affected in terms of the total number of destroyed structures.

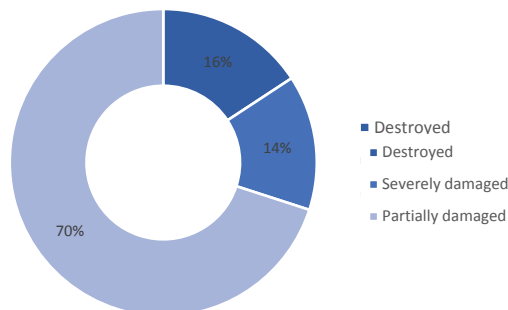
Structures and Shelter Damages

Shelter damages were severe.

The total number of damaged structures is not final yet. However, the preliminary assessment of UNOSAT estimated the total number to be 14,798 structures. Damaged shelters were estimated to be 55,855 housing units, divided between 8,800 destroyed units, 7,953 severely damaged, and 39,120 partially damaged units. The following detailed assessment by UNDP and UNRWA preliminary estimates refer to 113,366 damaged housing units divided between



13,529 destroyed units, 8,392 severely damaged and 91,445 partially damaged (as shown in the figures below). The two assessments reveal significant discrepancies in the results, which can be explained by the large number of partially damaged units, that was identified through the detailed assessments of UNDP and UNRWA.



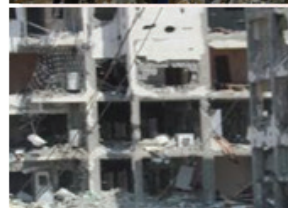
Shelter Damage Displacement



Partially damaged

Damages are in part of the house and some parts are still inhabited and the estimated cost of repair is between USD 5,000 and USD 10,000.

91,445 units/ 548,670 individuals



Severely damaged

Damages are in essential parts of the house, uninhabited until major work takes place. Cost between USD 10,000 and USD 20,000.

8,392 units/ 50,352 individuals



Destroyed

Totally destroyed or beyond repair houses, need demolition and reconstruction. Cost over USD 20,000.

13,529 units/ 81,174 individuals

Infrastructure and Social Services:

The war resulted in severe destruction and damages to the main infrastructure installations, main and local infrastructure networks, and basic social services (i.e education and health), which caused temporary or permanent disruption of the services across the strip. Impacts can be summarized by:

Water: All over the strip, a total of 20,000 m of water pipes have been damaged, in addition to 25 wells, 16 reservoirs, and 6 desalination units that have been completely or partially damaged³. The concentration of the damages was in the Eastern 3km buffer zone, mainly in Bait Hanoun, Al Shuja'iya, Khuzaa, Al Musaddar, and Eastern Rafah (Ashoka), in addition to refugee camps, mainly Jabalya, Nusairat, Al-Bureij, Deir Al Balah, Al Maghazi and Rafah Camps⁴. In particular, the war have resulted in almost complete destruction of the networks of Al Shuja'iya, Khuzaa and Rafah eastern areas⁵

¹ Ministry of social affairs

² UNOSAT Assessment cross referenced with the "Detailed Infrastructure Damage Assessment of the 2014 Gaza War" - UNDP

³ "Detailed Infrastructure Damage Assessment of the 2014 Gaza War" - UNDP

⁴ "Detailed Infrastructure Damage Assessment of the 2014 Gaza War" - UNDP cross referenced with CMWU Assessment

⁵ "Detailed Infrastructure Damage Assessment of the 2014 Gaza War" - UNDP

Wastewater: A total of 15,000m of sewerage pipelines have been damaged throughout the strip, along with 12 pumping stations that were partially damaged. Gaza, Rafah and Bait Lahia wastewater treatment plans were also damaged¹. The concentration of the damages is similar to that of water networks².

Roads³: In total, 39, 56 Km of asphalted municipal and regional roads have been damaged, in addition to 11.1km of interlock-tiled roads that were destroyed by the war and the war aftermath throughout the Gaza Strip. The concentration of damages was to the Eastern side of Salah El Dein Road, mainly in Al Shuja'iya neighbourhood, Khuzaa, Bani Suhaila ,Qarara and Beit Hanoun. Despite that most damaged roads have been opened for traffic by removing debris, they are still not asphalted. Movement of people and goods remain difficult in the Eastern parts. Internal roads in Beit Hanoun, Al Shuja'iya and Khuzaa remain closed due to the massive destruction inside these areas.

Electricity⁴: During the war, the damages of Gaza power station fuel tanks and feeder lines resulted in a complete electricity outage throughout the strip. This was partially fixed by Gaza Electricity Distribution Company (GEDCO) by October 2014. However, Gaza is left with a deficit of 65% of the current peak demand of 350MW. As of October 18th, due to the damages, and lack of spare parts and materials, Gaza power plant is out of service, depending only on supply from Egypt and Israel with outages exceed 18 hours /day. In addition, 20-25% of Gaza population have no electricity.

Education⁵

Out of the existing 520 education facilities in Gaza, 261 were damaged. Damages were widespread across the government and UNRWA preliminary and secondary schools. In total, over 559,000 students were affected by the war impacts. Damages were concentrated in the eastern parts of Gaza Governorate, where 3 schools were totally destroyed, 4 were severely damaged and 83 were partially damaged. The war also impacted schools operation in general. The school year started on September 14th three weeks later than planned, as 113 schools were used as shelters for IDPs. As of October 18th, 18 UNRWA schools are still used as collective shelters for IDPs.

Health⁶

The Ministry of Health and the World Health Organization identified 87 health facilities (hospitals and clinics) to be assessed. 77 of these were damaged, while 25 were either totally destroyed or suffered from severe and major damages. The most affected facilities were in Gaza Governorate, where 10 hospitals and 17clinics were damaged.

Urban Functionality

In addition to the impacts of infrastructure and social services damages that caused temporary or permanent disruption of the services across the Strip, the war resulted in severe combined impacts on particular areas and neighbourhoods that hindered/are hindering their

functionality. The capacity of these areas to provide basic level of services and adequate living environment to their residents is severely reduced, if not completely ceased to exist in parts of these areas.

Based on the available data, past and ongoing needs assessment, the following municipalities/neighbourhoods or parts of them can be rendered as localities with severely difficult living conditions that need immediate interventions to bring them back to an acceptable level of urban functionality. These areas lack adequate level of mobility due to closed internal roads, and lack functioning water and wastewater services. They also suffer from severe electricity outage, in addition to massive destruction of structures that cripple housing and other urban and commercial functions:

North Gaza Governorate:

- 1 Bait Hanoun

Gaza Governorate:

- 2 Gaza City (Al Shuja'iya neighbourhood)
- 3 Wadi Gaza

Deir Al Balah Governorate :

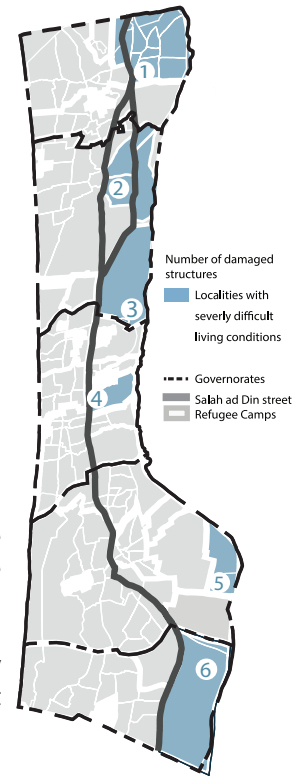
- 4 Al Musaddar

Khan Younis Governorate:

- 5 Khuzaa

Rafah Governorate:

- 6 Ash Shoka



More detailed urban profiling of these areas is needed to have better understanding of the damages impacts and identifying of priority interventions, in addition to capturing any potential development opportunities and neighborhood re-planning options to build back better Gaza.

Identifying Priority Areas and Interventions

Although the most dysfunctional areas represent priority for interventions, other factors need to be considered. Aspects of population size and density, as well as poverty rates in localities are important factors. For example, considering that poverty rates in As Shoka and Khuzaa exceed 40 % gives these two areas priorities for support and it also impacts the nature of immediate and long terms interventions and their components

The following sections of this document aim at using the available pre- crisis and damages data available so far to set the background for further analysis of these priority areas upon more data and resources availability.

1 "Detailed Infrastructure Damage Assessment of the 2014 Gaza War" - UNDP cross referenced with CMWU Assessment
 2 "Damages Assessment Report Water and Wastewater Infrastructure/CMWU
 3 To date, no detailed geo referenced data available. The included data are taken from the UNDP "Detailed Infrastructure Damage Assessment of the 2014 Gaza War"
 4 As 3 above
 5 As 3 above
 6 As 3 above



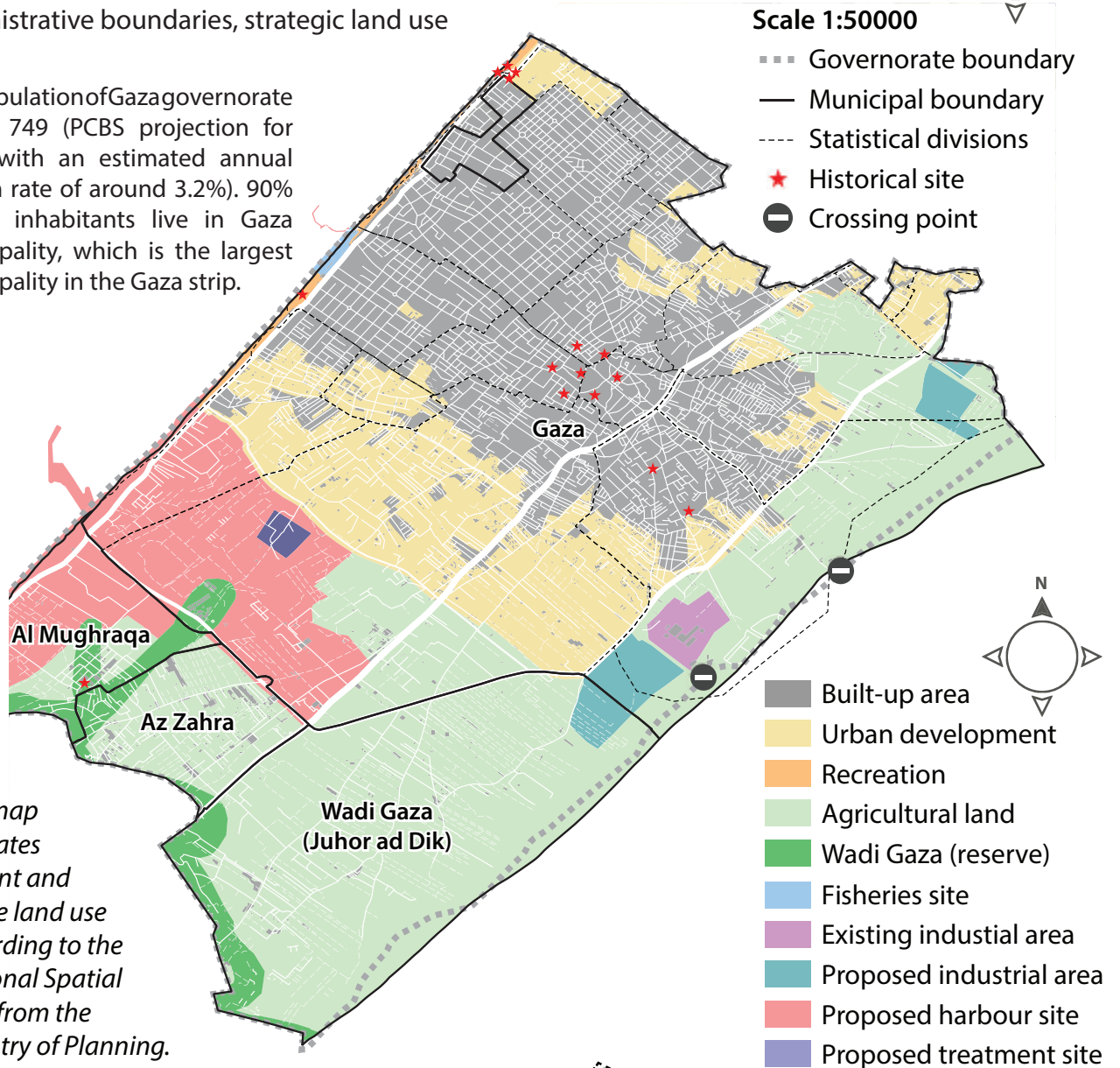
3. MUNICIPAL LEVEL ANALYSIS

3.1 Gaza Municipality

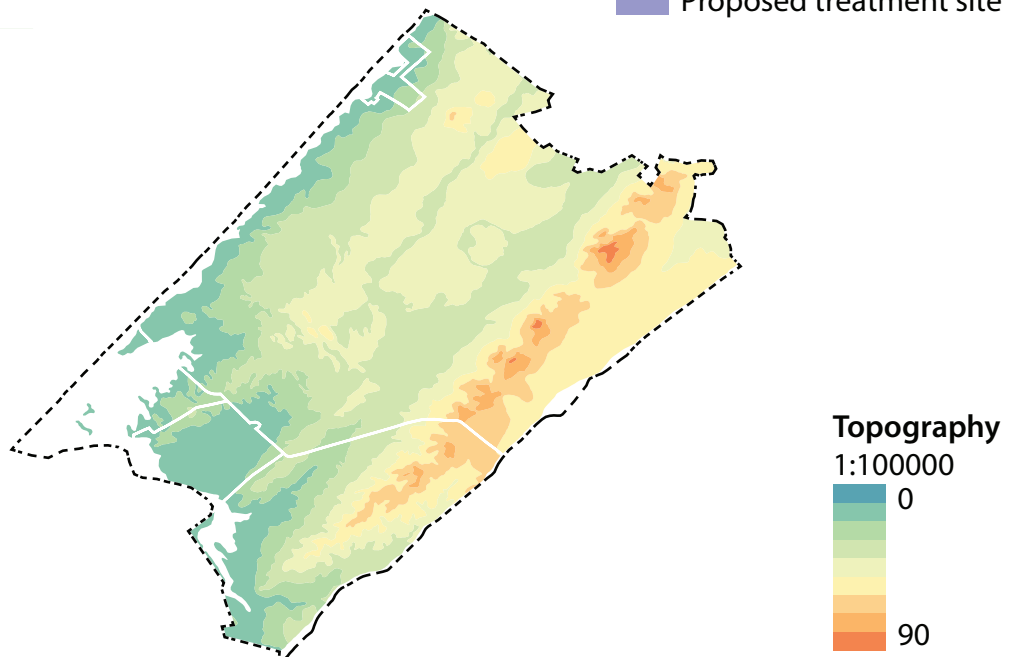
3.1a Governorate Context

Administrative boundaries, strategic land use

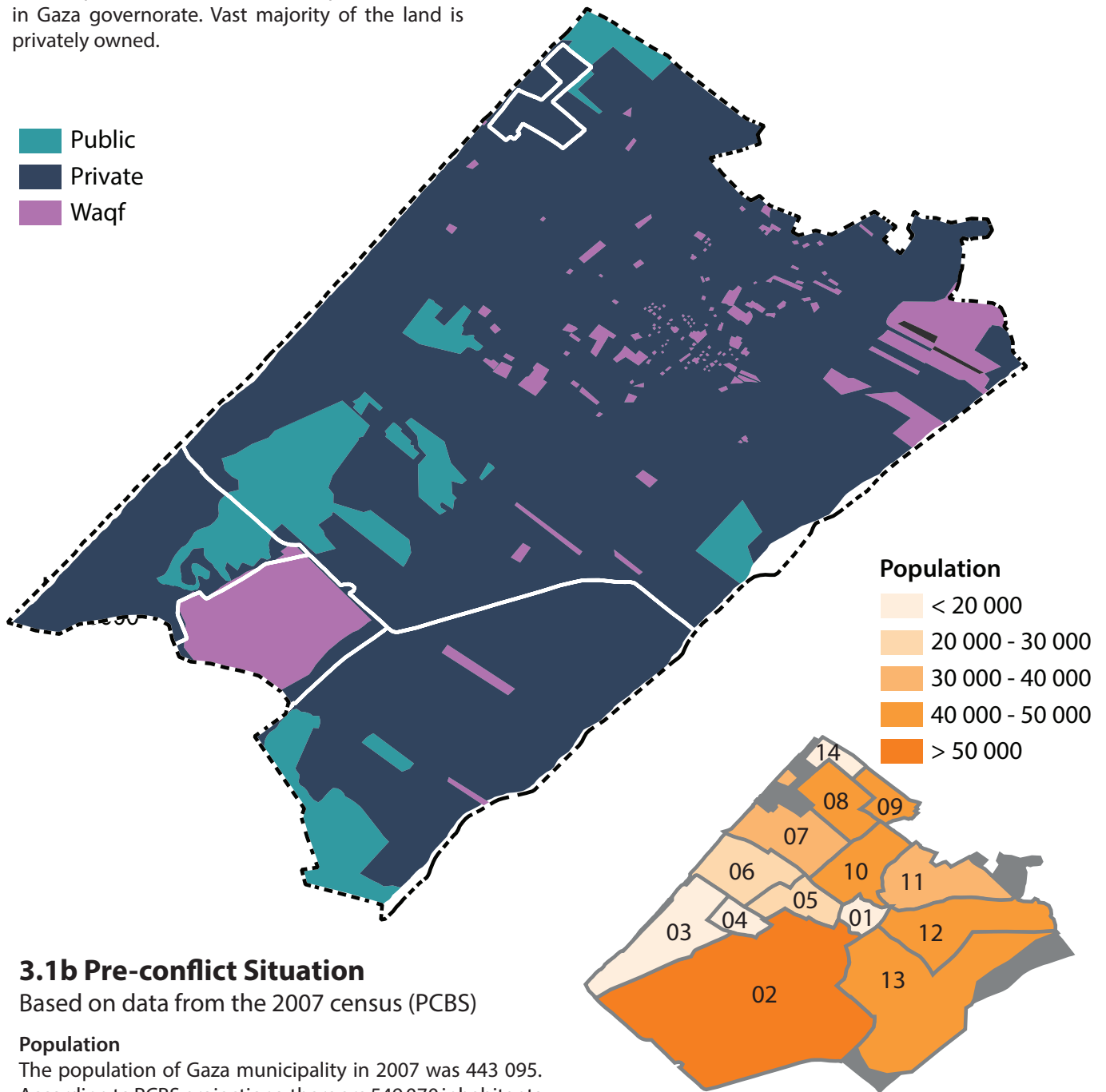
The population of Gaza governorate is 606 749 (PCBS projection for 2014, with an estimated annual growth rate of around 3.2%). 90% of the inhabitants live in Gaza municipality, which is the largest municipality in the Gaza strip.



The map indicates current and future land use according to the National Spatial Plan from the Ministry of Planning.



The map indicates land ownership classification in Gaza governorate. Vast majority of the land is privately owned.



3.1b Pre-conflict Situation

Based on data from the 2007 census (PCBS)

Population

The population of Gaza municipality in 2007 was 443 095. According to PCBS projections, there are 549 070 inhabitants in 2014 (with an average growth rate of 3.1% per year). The population is distributed quite evenly between different geographical areas. The interest area for detailed analysis – statistical division 12 & 13 – had a combined population of 93 952 (21.2% of the total).

Household size

There were 67 997 housing units in Gaza municipality at the time of the census (2007), resulting in an average household size of 6.6. Of these units, 12 776 (18.1%) were located in statistical division 12 & 13, resulting in an average household size of 7.4 (the highest in the municipality).

Density

Because of the amount of agricultural lands included in

statistical division 12 & 13, population density is not the best indicator of overcrowding or levels of urbanisation. The most densely populated areas in Shuja'iyya are located between the Old City/Salah ad Dein street on one side, and Al Karame street on the other side.

Tenure

Gaza municipality has the lowest percentage of owner-occupied units in the region (76%). This could be due to multi-storey developments and economic migration into the city. 9% of housing units in the municipalities are identified as rent-paying. In statistical division 12 & 13, only 1 out of every 5 non-owner-occupied units were identified as paying rent in the 2007 census.

3.1c Land Use

Built-up areas and agricultural land with parcels

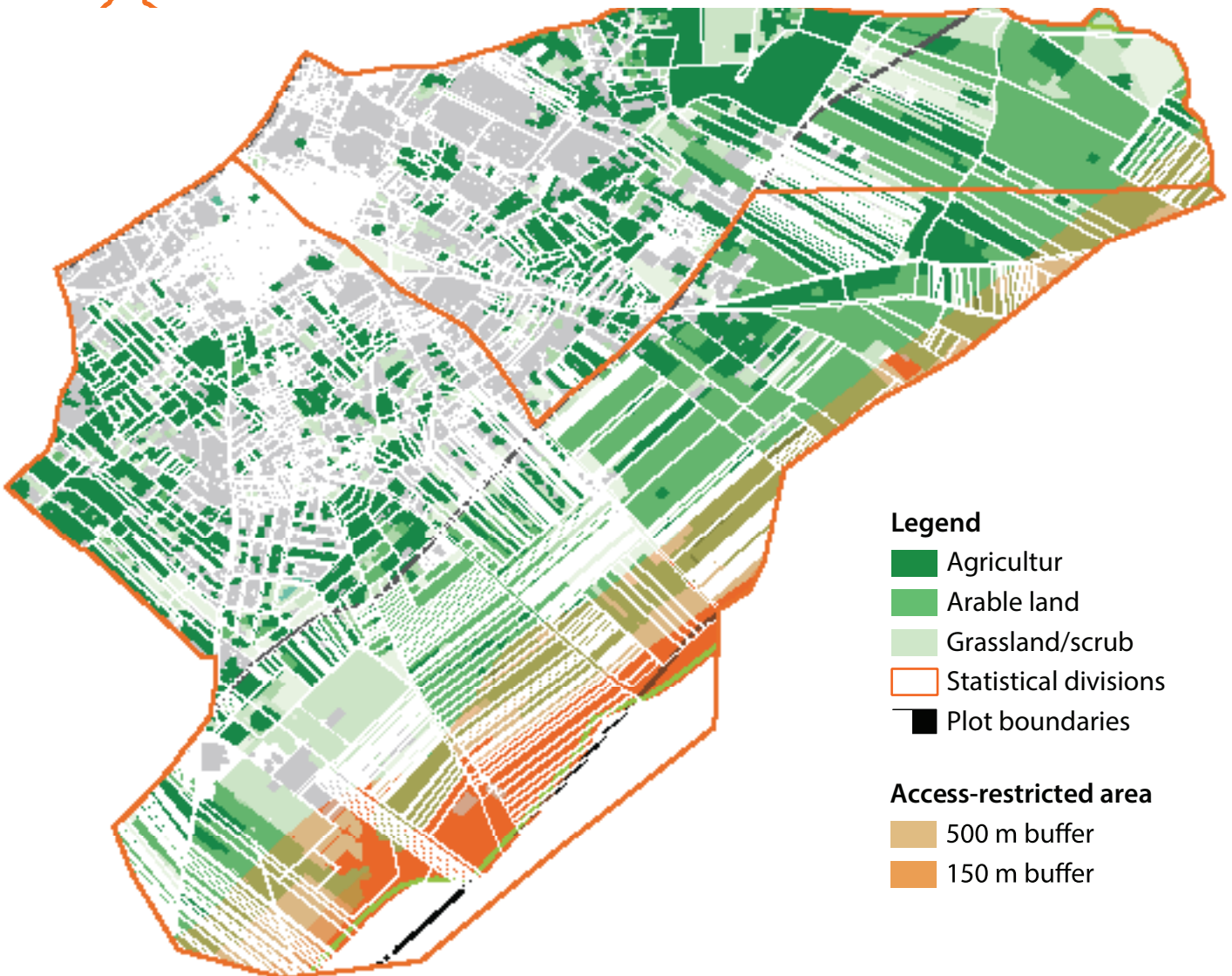
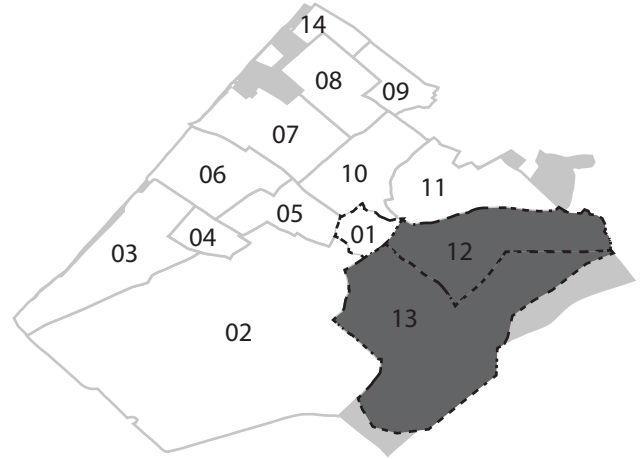
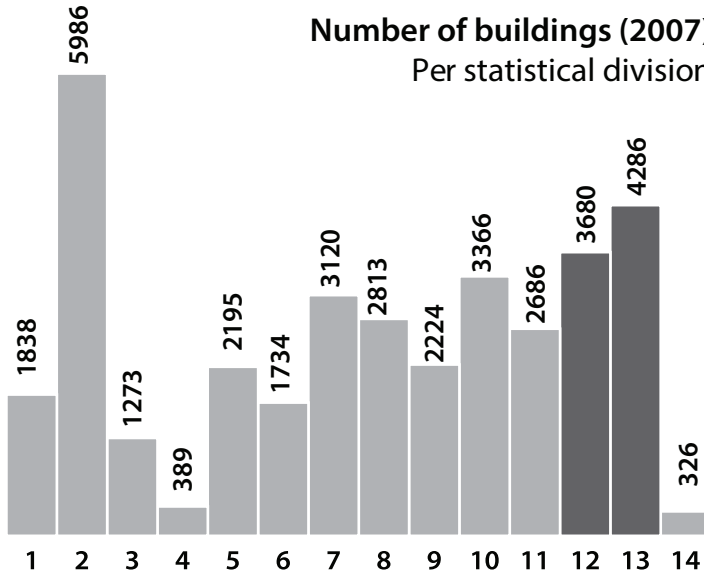
35 916 buildings were registered in Gaza municipality during the 2007 census. Around 10% of these (7 966 buildings) were located in statistical division 12 and 13 (but containing 17% of the total number of housing units).

Agriculture - 34%

Built-up - 56%

Bare - 10%

Number of buildings (2007)
Per statistical division



Legend

- Agriculture
- Arable land
- Grassland/scrub
- Statistical divisions
- Plot boundaries

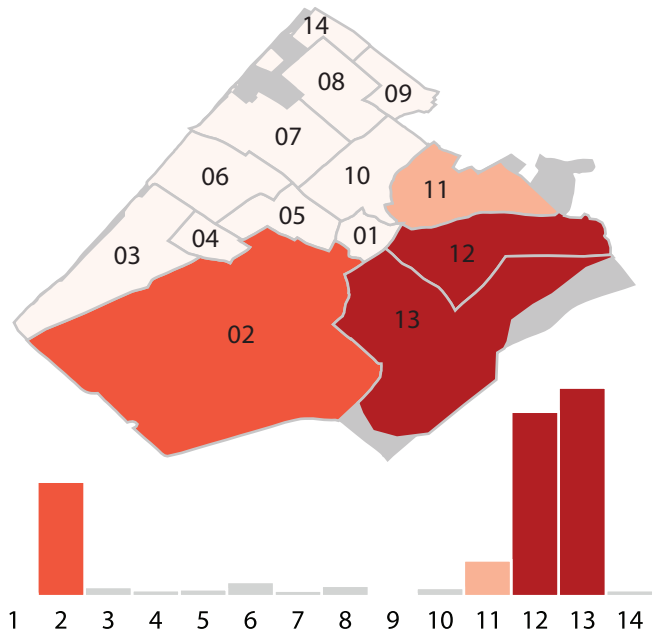
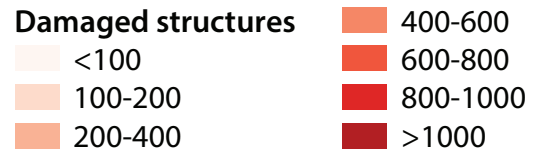
Access-restricted area

- 500 m buffer
- 150 m buffer

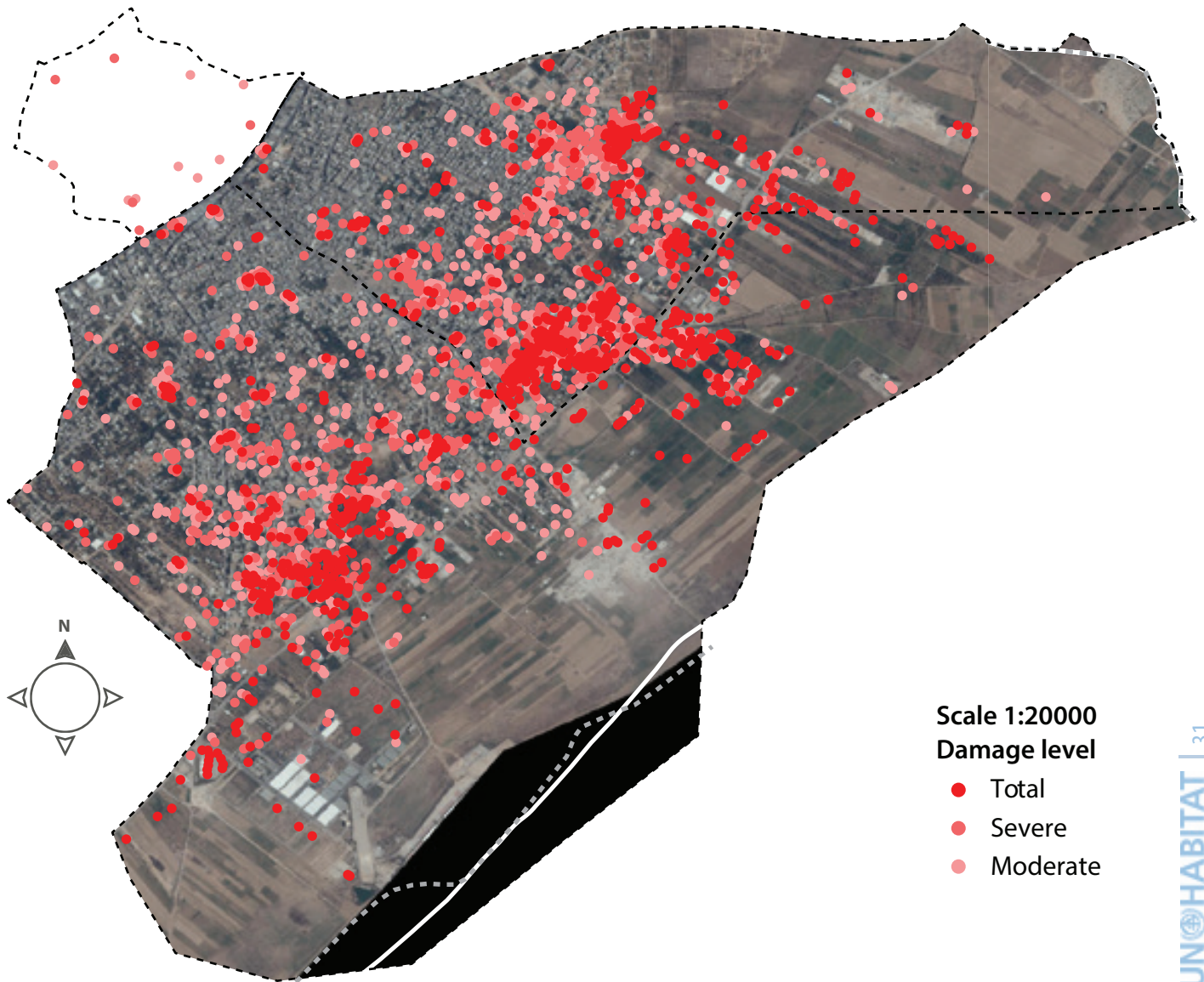
3.1d Damage Assessment

Based on UNOSAT data from 28/29 August 2014

PCBS has divided Gaza municipality into 14 statistical divisions. Satellite-based damage assessment data from UNOSAT shows that these areas have been affected very differently by the conflict, with high concentrations of structural damages to the south-east. Statistical division 12 and 13, covering the area known as Shuja'iyya, require particular attention and support due to the amount and concentration of damages (see detailed map below).



| Area | | | | Sum |
|------|-----|-----|-----|------|
| 12 | 420 | 337 | 288 | 1045 |
| 13 | 482 | 332 | 367 | 1181 |



3.1e Photos

Taken during field visit on September 30, 2014

Some photos illustrate the difficulties of mapping damages from satellite images



The building to the left is mapped as severely damaged, while the 2 floor building to the right is moderately damaged.



Burned out houses is an example of difficult damages to map from aerial imagery. A severely damaged mosque is seen in the background.



On the right: a building classified as severely damaged but not destroyed by UNOSAT. A partially destroyed gov. school in the back.



Another example of the difficulties of mapping damages from satellite imagery. The building in front can look intact from above.





180 panoramic view