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Zaatari Camp Wastewater Assessment

29th December 2013

Introduction

- As part of the UNICEF-REACH agreement, REACH were asked to create an assessment of **wastewater produced at the household level**, including: the sources/type of wastewater; the methods of wastewater discharge; and the location of wastewater storages at the household level.
- In this assessment 'wastewater' refers to both black and grey water.
- It should be noted that ALL such examples of wastewater production and disposal at the household level are informal and unregulated.

Introduction

- Field work: 21.09 – 11.12.2013
- OpenDataKit (ODK) questionnaire to collect information
- Sattelite image and field visit to get household boundaries and location of wastewater storage and pipe connections

Outputs:

- Presentation
- Set of maps
- Narrative report



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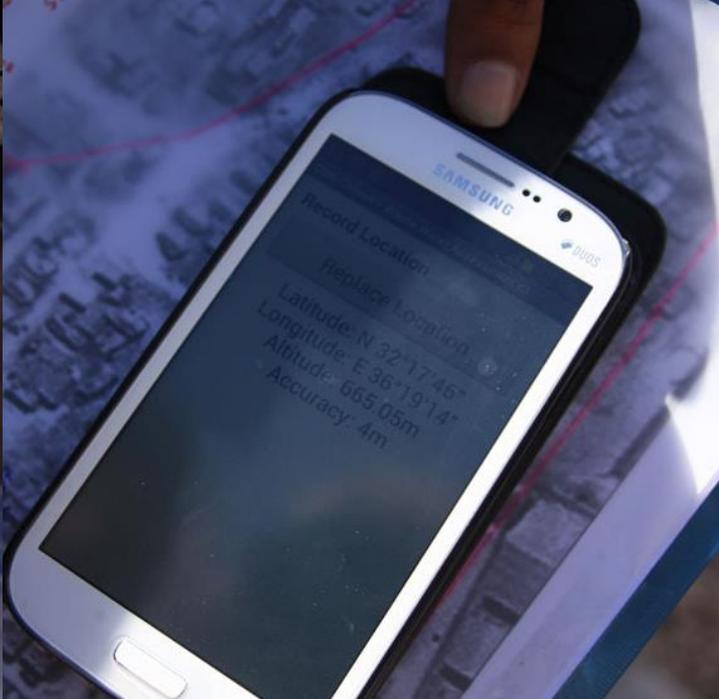
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Questions asked

- **Is there a source of wastewater?** (yes/no)

- **What type of wastewater source:**

Private Sink for washing clothes

Private Sink for washing vegetables

Washing machine

Private Shower

Private toilet

Other (Specify)

Grey water

Black water

- **Where does the waste water flow to?**

Pit

Plastic tank

Oil/petrol barrel

Surface run off

Tank of WASH facility

Other

Wastewater storage
in household

- **How many wastewater storages are in household?**

Questions asked

- **Sharing wastewater storage with other household? (yes/no) How many?**
- **How does the water flow through? (pipe/ditch)**
- **Do you have private water storage? (yes/no) How many?**
- **How many people are in this household?**

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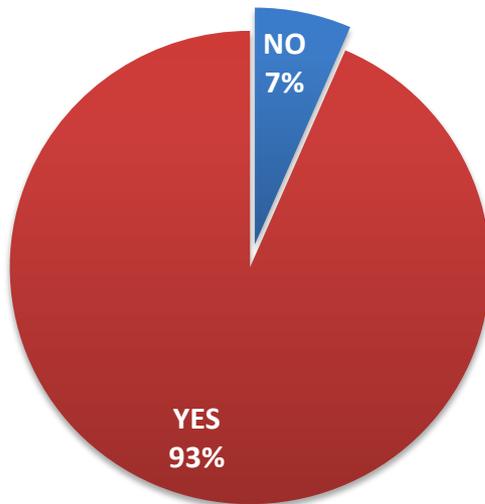
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Key Findings

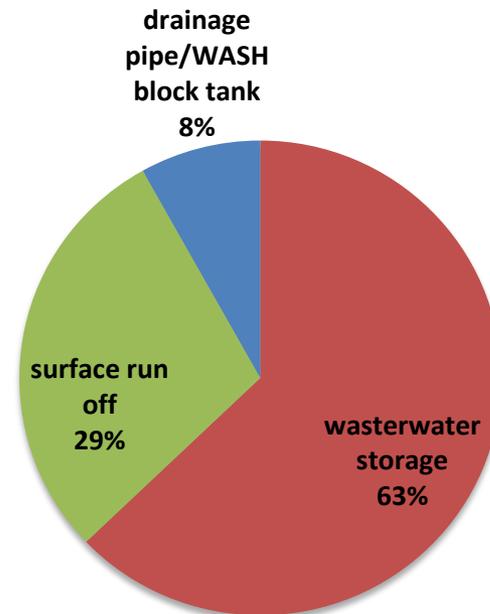
Key findings

- **9 695 households** with reported wastewater source
- **8 645 unofficial wastewater storages** in the camp
- **71 074 people** live in household produce wastewater source

Households with/without wastewater source



Methods of wastewater disposal in households with wastewater source



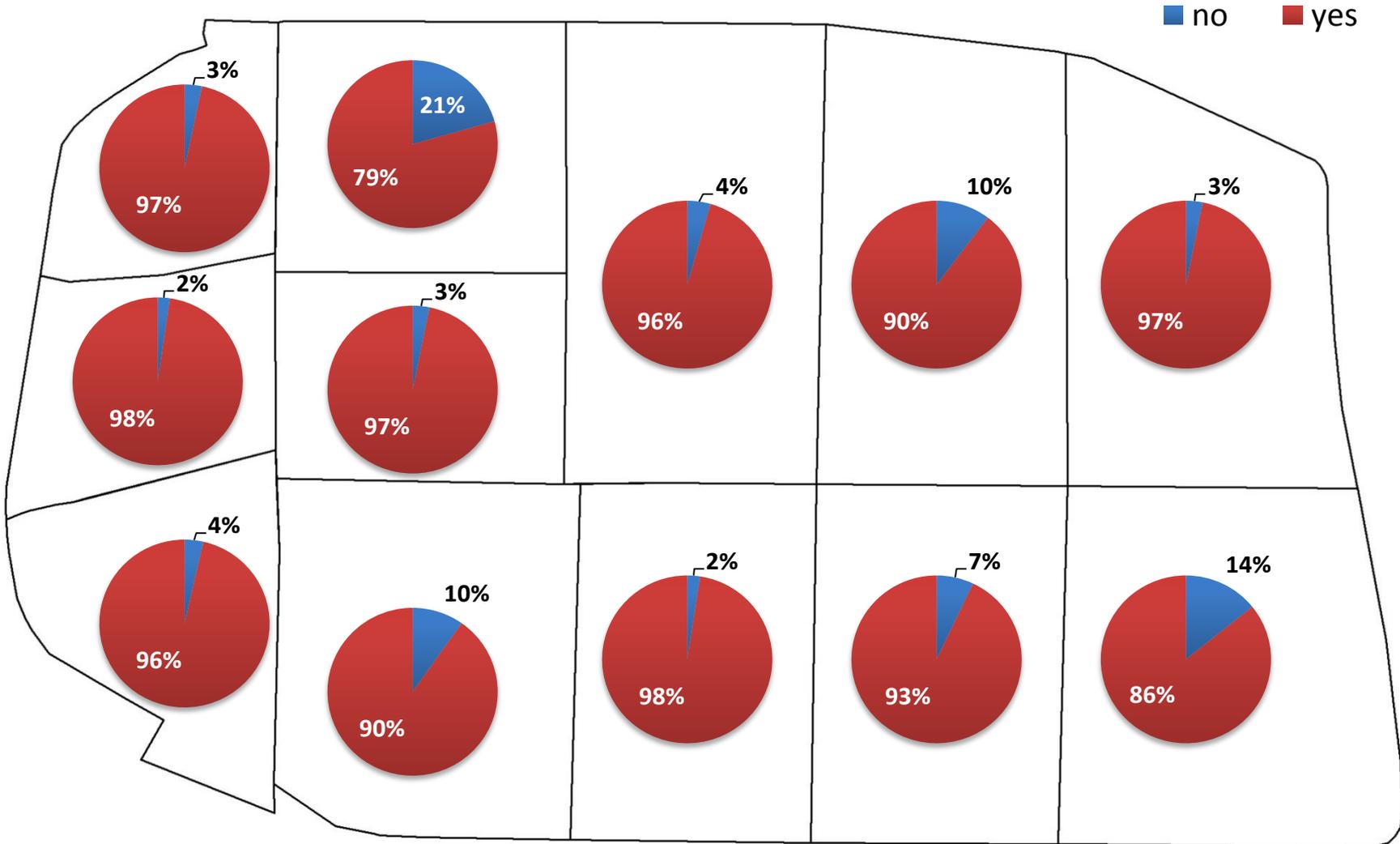
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Wastewater Sources

Source of wastewater in households



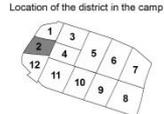
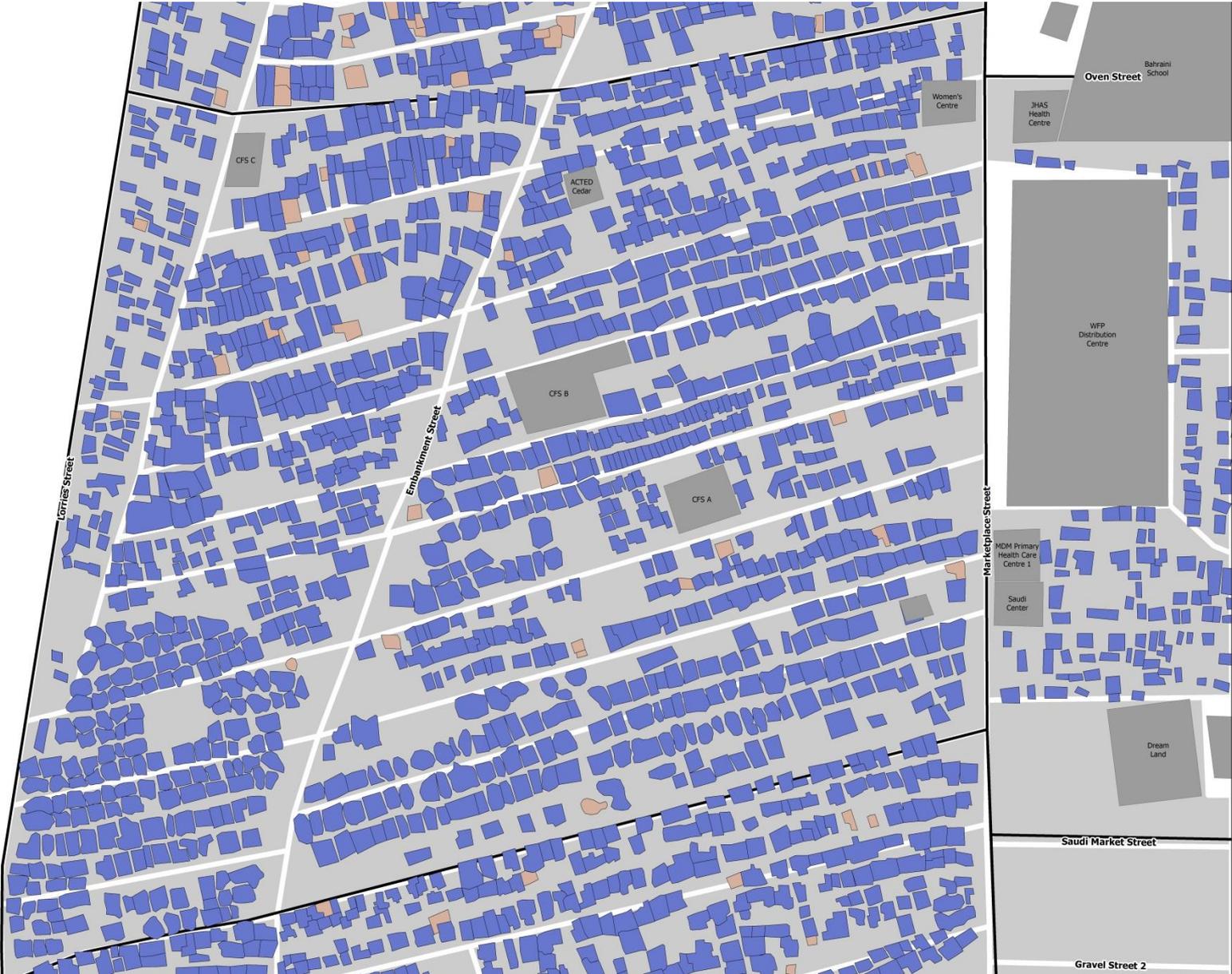
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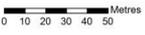


Source of wastewater in households: District 2

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- Houses with waste water source
- Houses without waste water source
- District boundaries
- Streets
- Camp Facilities

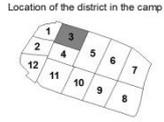
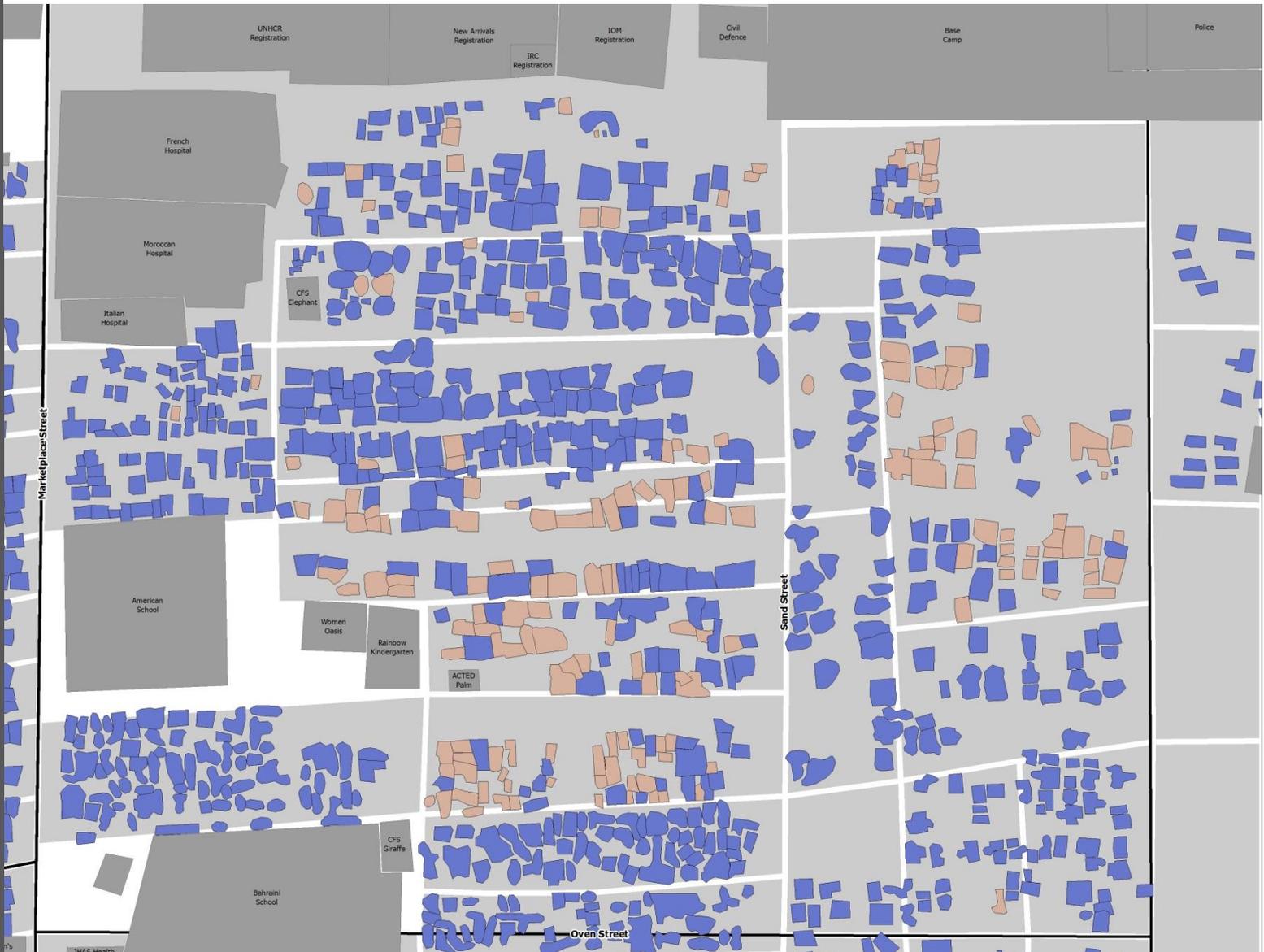


Data Source: REACH
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data: ACTED / REACH - September - November 2013
 Map Reference: -COC_Camp_WWw_wastewaterource_02
 Contact: reach.mena@impact-initiatives.org

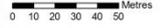
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Source of wastewater in households: District 3

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- Houses with waste water source
- Houses without waste water source
- District boundaries
- Streets
- Camp Facilities



Data Source: REACH, UNHCR
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data: ACTED / REACH - September - November 2013
 Satellite Acquisition Date: 19/09/2013 by Digitalglobe
 Provided by: UNISAT
 Map Reference: JOR_Za'atari_WWA_wastewater_source_03
 Contact: reach.mena@impact-initiatives.org
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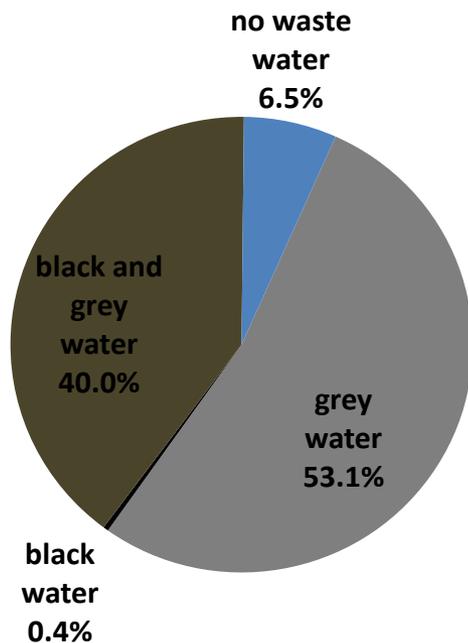
Types of wastewater

Grey water:

- Private sink for washing clothes
- Private sink for washing vegetables
- Washing machine
- Private shower

Black water:

- Private toilet



40,4% households in the camp has source of black wastewater (private toilet).

It means that:

- 33 200 people in 4184 households use private toilets
- 5137 unofficial wastewater storages at the household level possibly contain black water (59% of all wastewater storages in households)

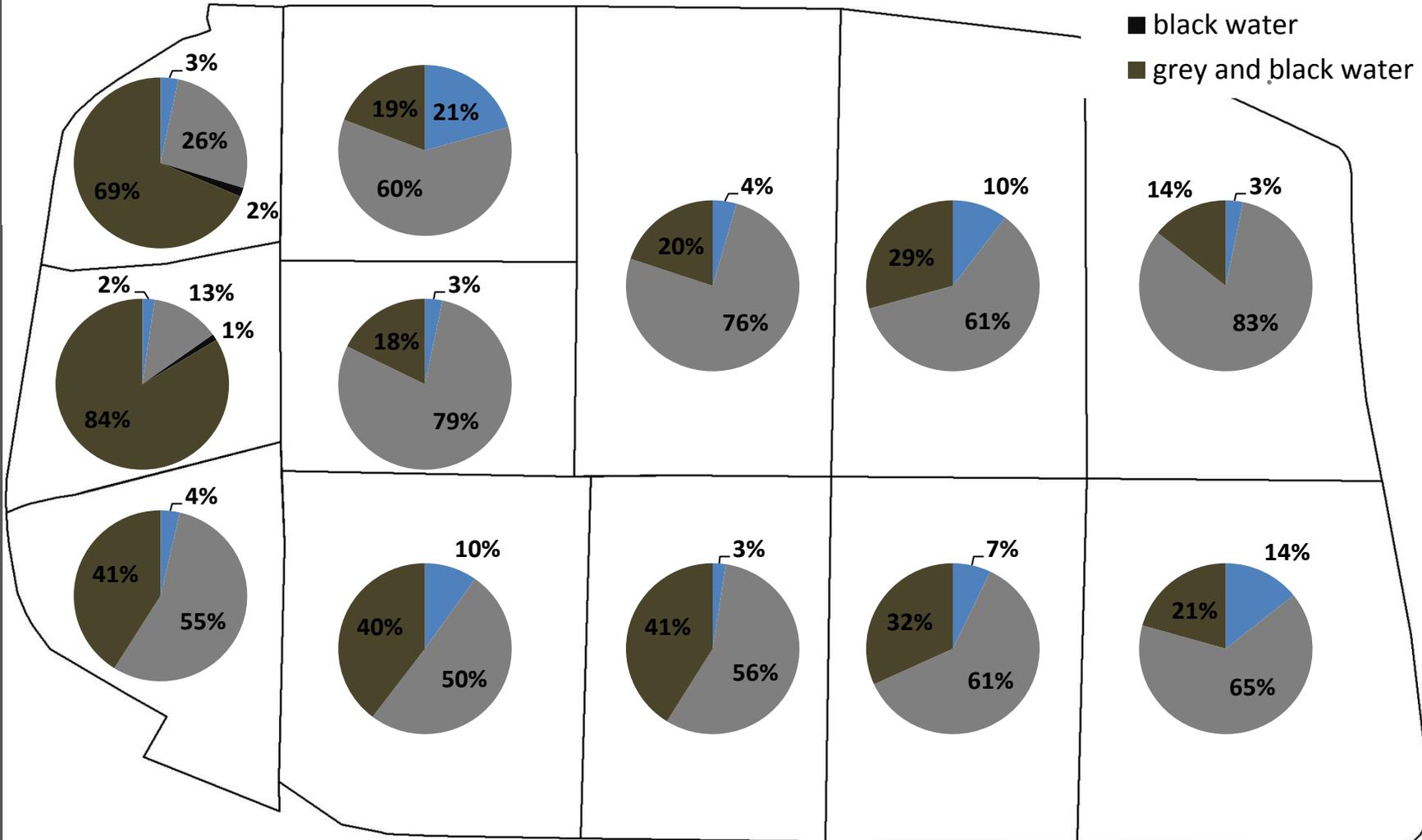
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Types of wastewater in households

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- no waste water
- grey water
- black water
- grey and black water



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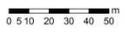


Grey and black wastewater in households: District 2

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- Pipes_allcamp
- Septic_tank_allcamp
- Status of WASH Centre**
 - destroyed
 - locked
 - intact
- Wastewater type**
 - Grey water
 - Grey and black water
 - Black water
 - No waste water
- Camp Facilities
- District boundaries

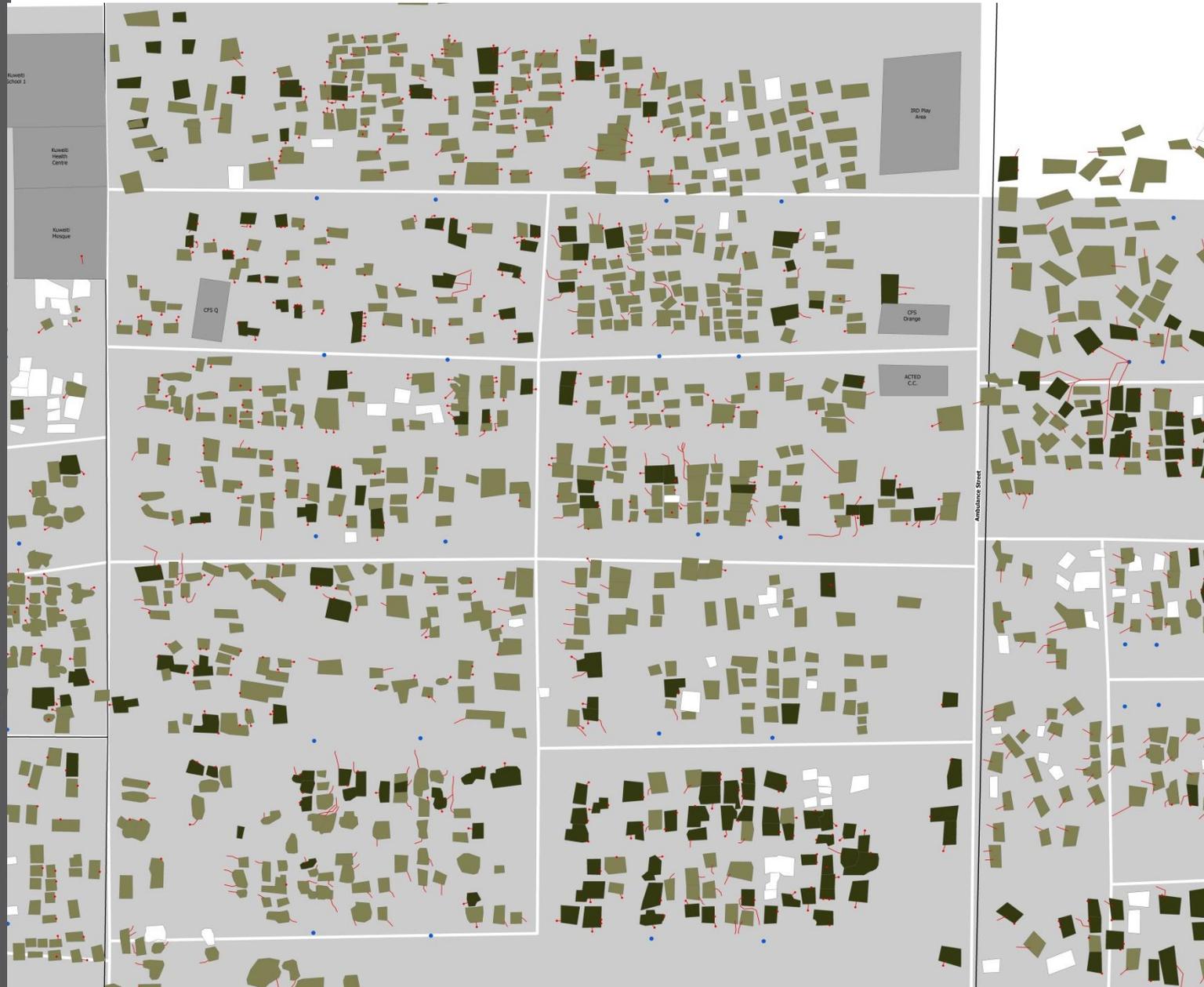


Data Source: REACH
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data collection: ACTED / REACH
 24 September - 11 December 2013
 Map Reference:
 JOR_Za'atari_WWA_wastewater_type
 Contact:
 reach.mena@impact-initiatives.org

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Grey and black wastewater in households: District 5

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- Pipes_allcamp
- Septic_tank_allcamp
- Status of WASH Centre**
 - destroyed
 - locked
 - intact
- Wastewater type**
 - Grey water
 - Grey and black water
 - Black water
 - No waste water
- Camp Facilities
- District boundaries

0 5 10 20 30 40 50 m

Data Source: REACH
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data collection: ACTED / REACH
 24 September - 11 December 2013
 Map Reference:
 JOR_Zastari_WWW_wastewater_type
 Contact:
 reach.mena@impact-initiatives.org

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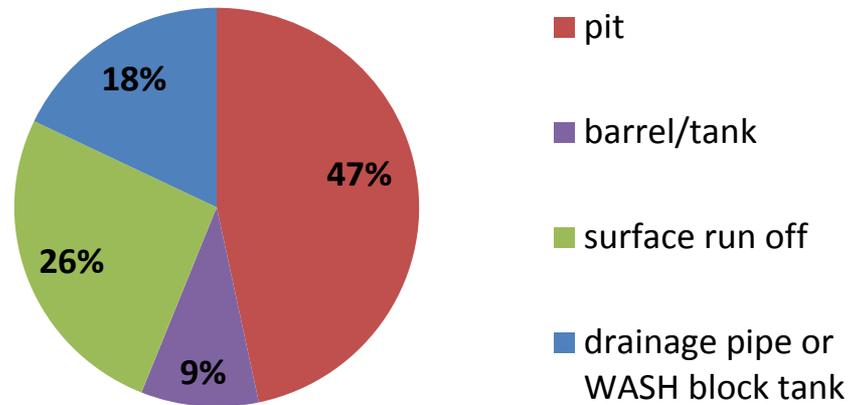
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Wastewater Disposal Methods

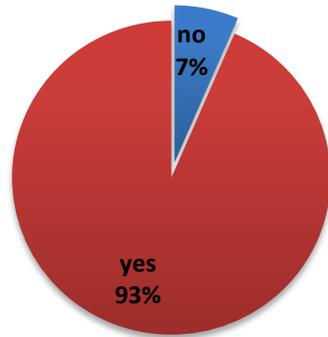
Types of wastewater disposal

- Storage at household level (pit, barrel, tank)
- Surface run off (ditch or throwing on the ground)
- Connection to drainage network or tank of WASH block



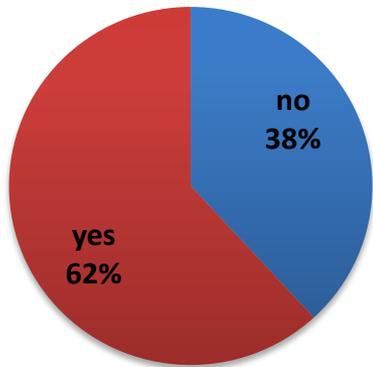
Wastewater storage at households

Is there wastewater produce at the household?

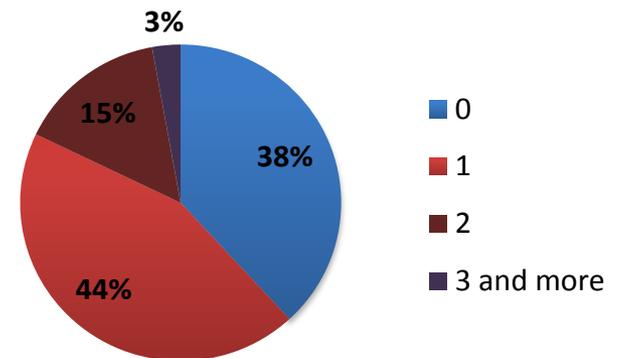


Total number of unofficial wastewater storages: **8 645**

Is there wastewater storage at the household?

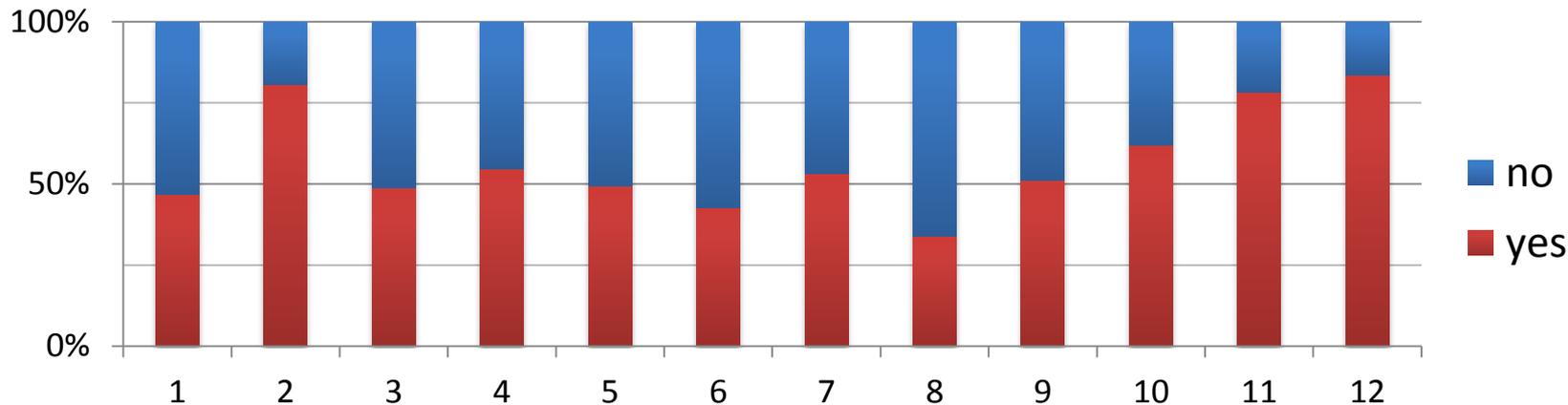


How many wastewater storages are there at the household?

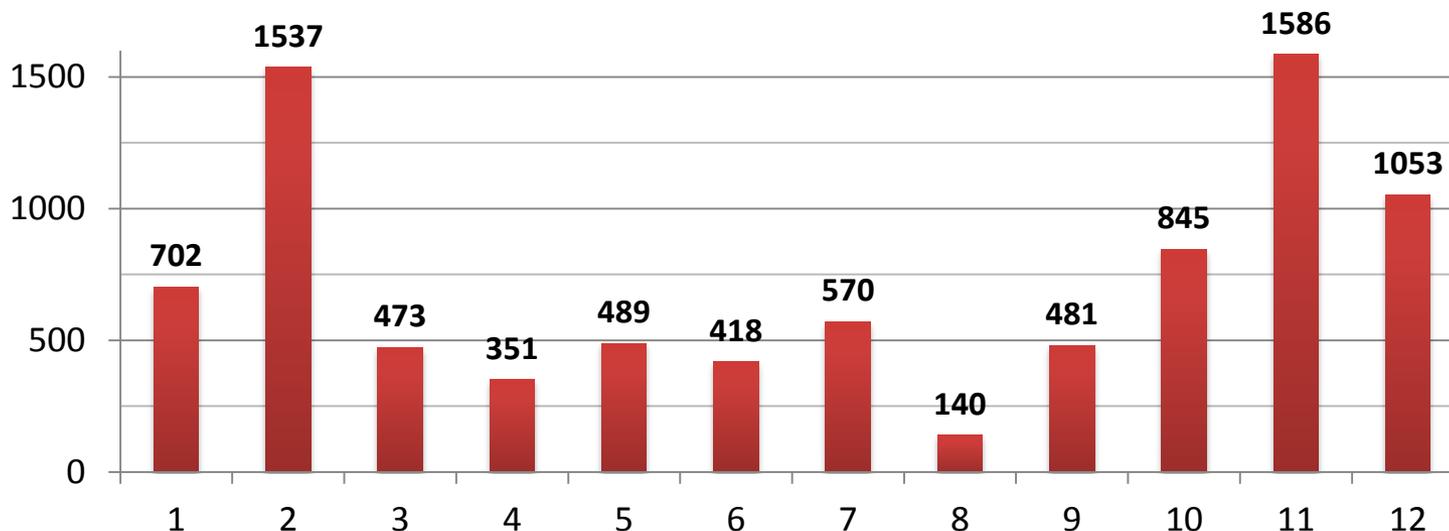


Wastewater storage at households per district

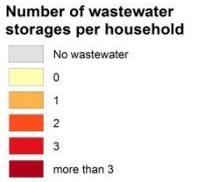
Households with wastewater storage



Number of wastewater storages per district



Informal Household Wastewater Storage



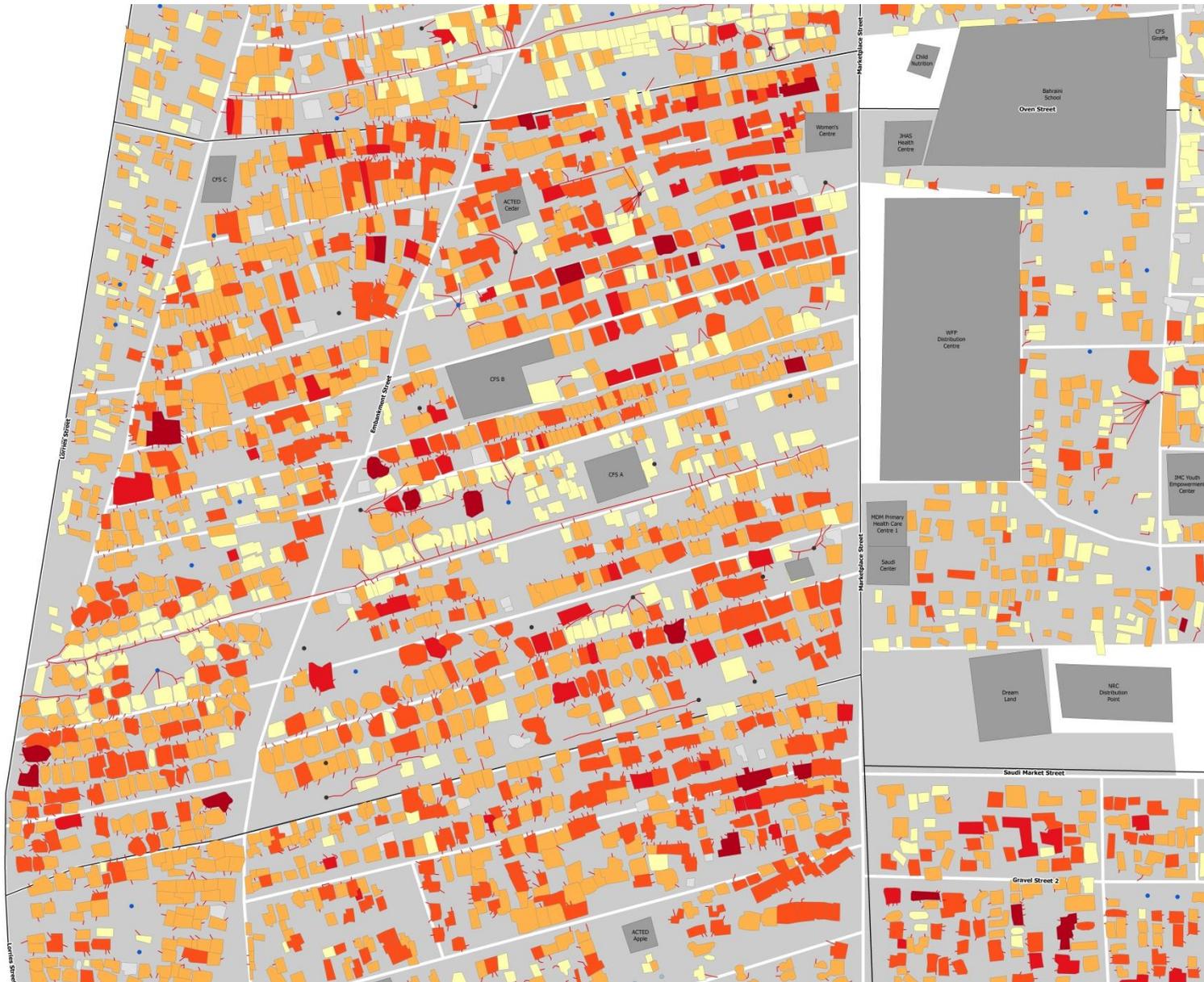
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Informal Household Wastewater Storage: District 2

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Septic tanks per household

- 0 No waste water
- 1
- 2
- 3
- more than 3

— Pipes and ditches

Status of WASH Centre

- destroyed
- locked
- intact

■ Camp Facilities

□ District boundaries



Data Source: REACH

Projection: WGS 1984 UTM Zone 37N

Waste Water data collection: ACTED / REACH
 24 September - 11 December 2013

Map Reference:
 JOR_Zaatari_WWA_Household_sewage

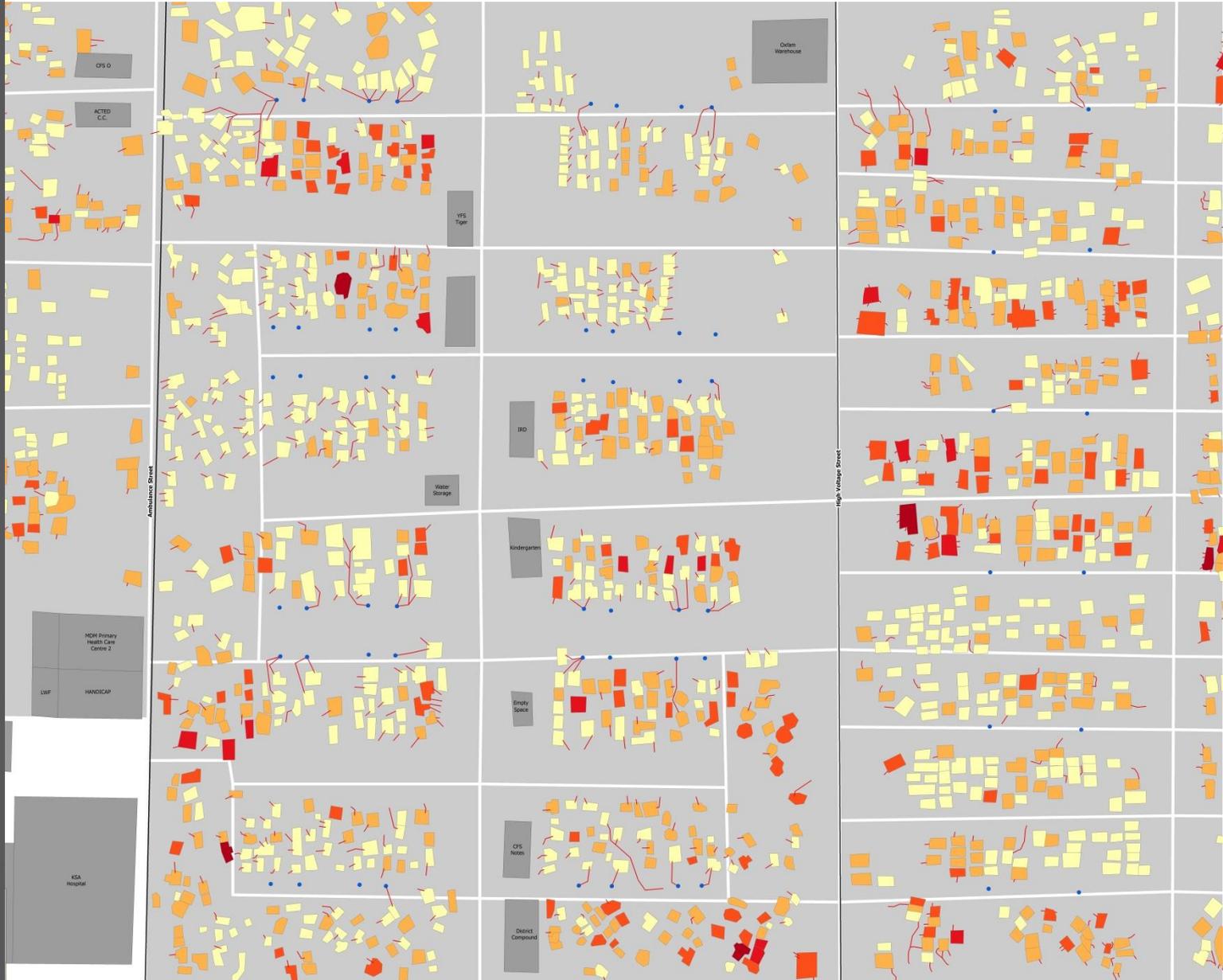
Contact:
 reach.mena@impact-initiatives.org

Note: Data, designations and boundaries contained on this map are not warranted to be

Informal Household Wastewater Storage: District 5

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Septic tanks per household

- No waste water
- 0
- 1
- 2
- 3
- more than 3

Status of WASH Centre

- destroyed
- locked
- intact

Camp Facilities

- Camp Facilities
- District boundaries

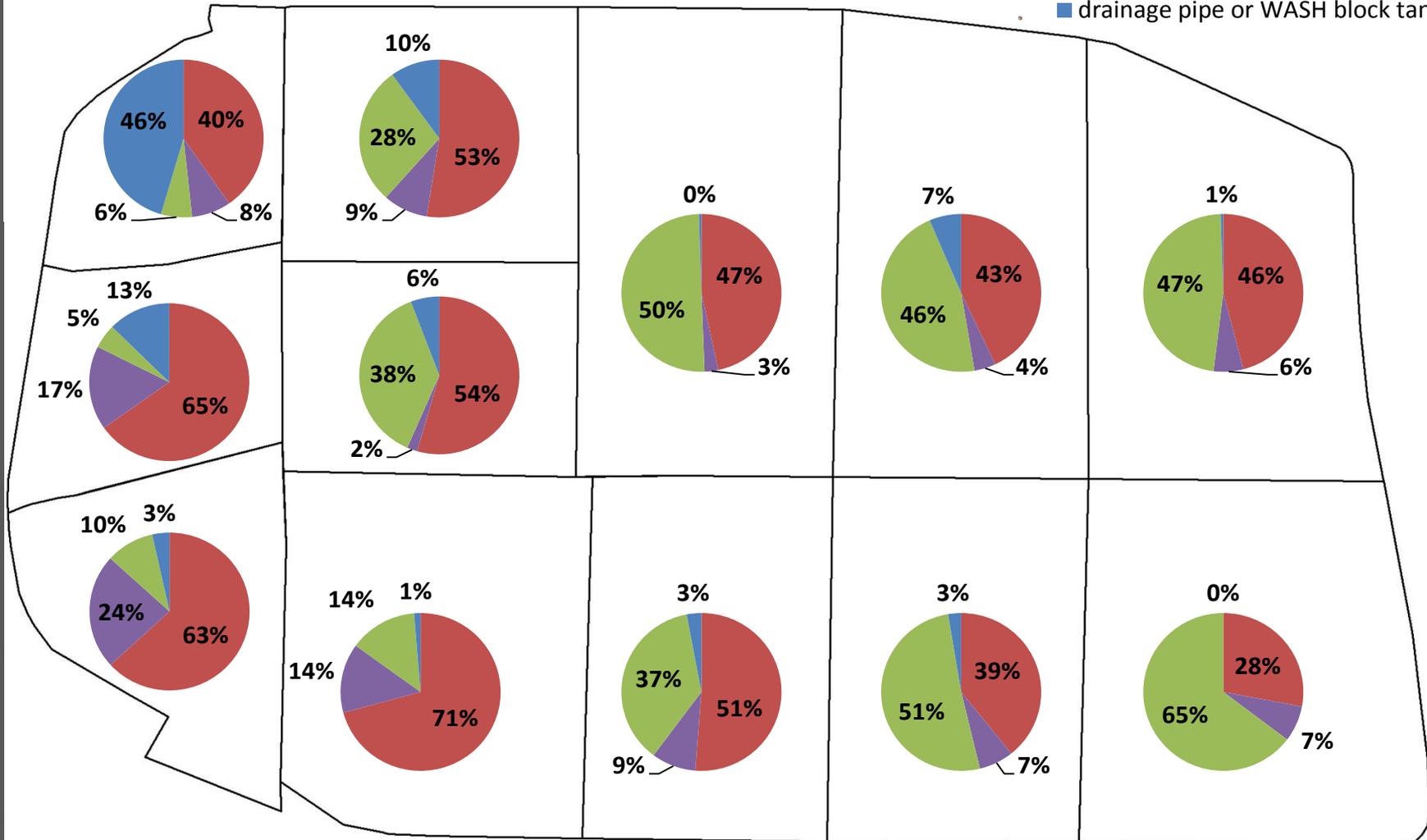


Data Source: REACH
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data collection: ACTED / REACH
 24 September - 11 December 2013
 Map Reference: JOR_Zaafar_WWA_Household_sewage
 Contact: reach.mena@impact-initiatives.org

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Methods of wastewater disposal

- pit
- barrel/tank
- surface run off
- drainage pipe or WASH block tank

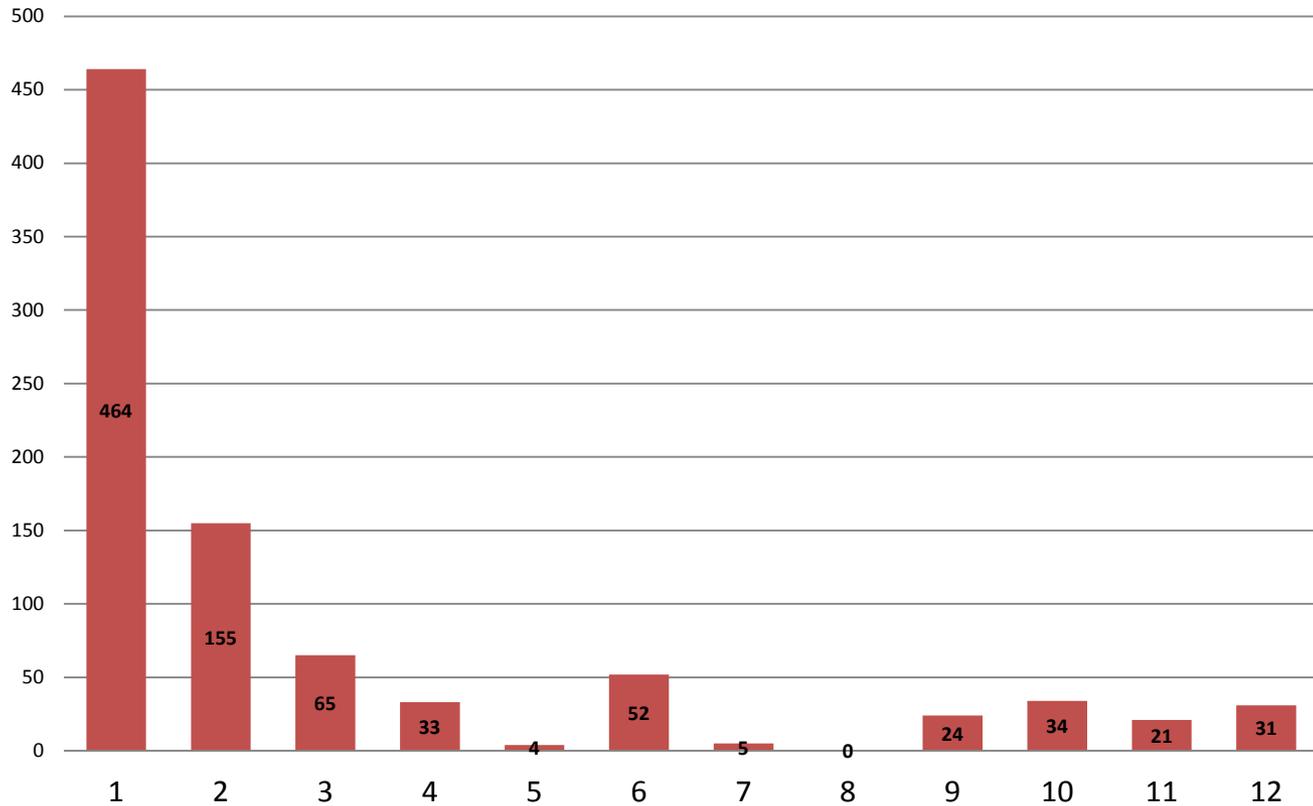


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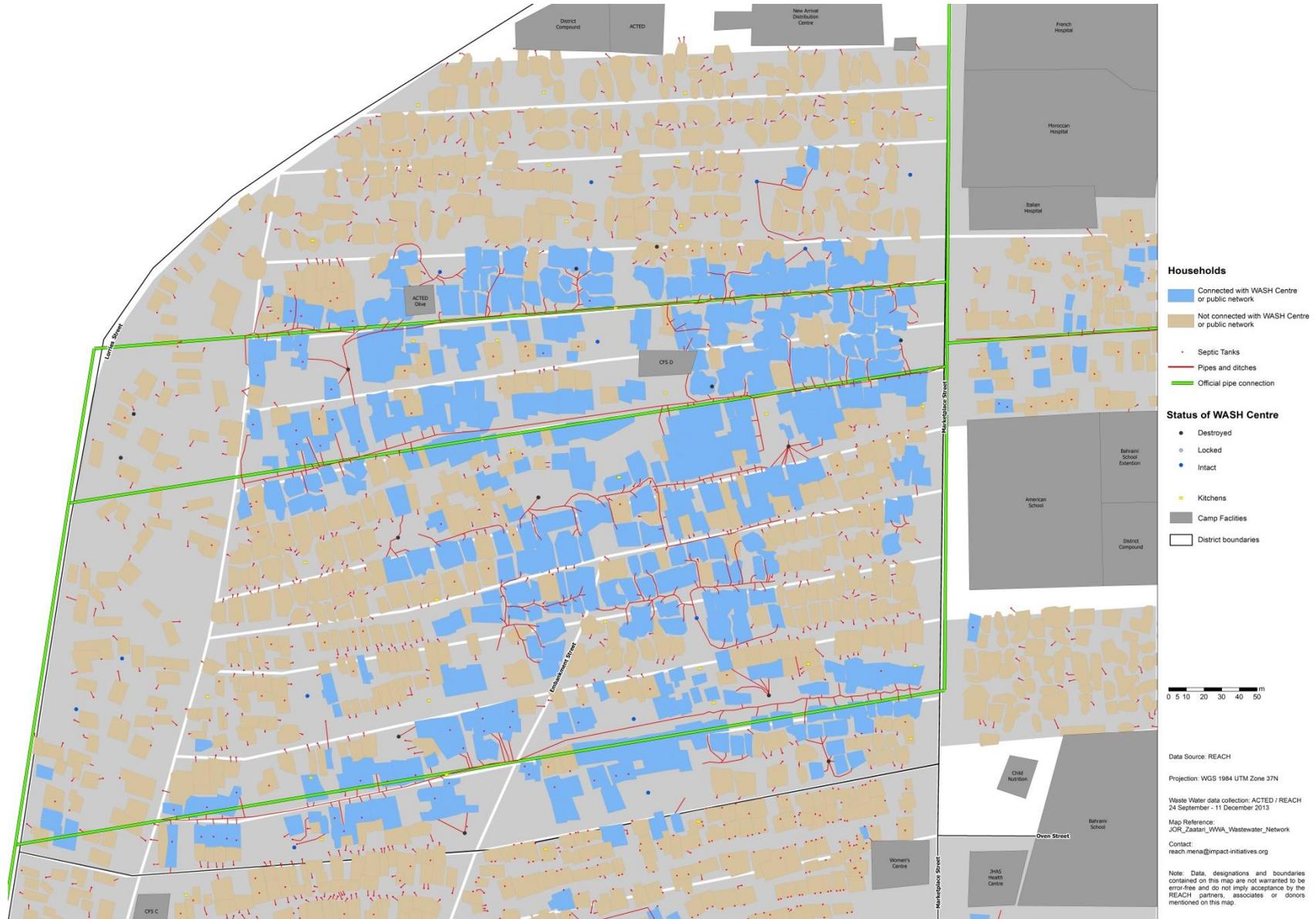


Households connected with drainage network and WASH block tanks



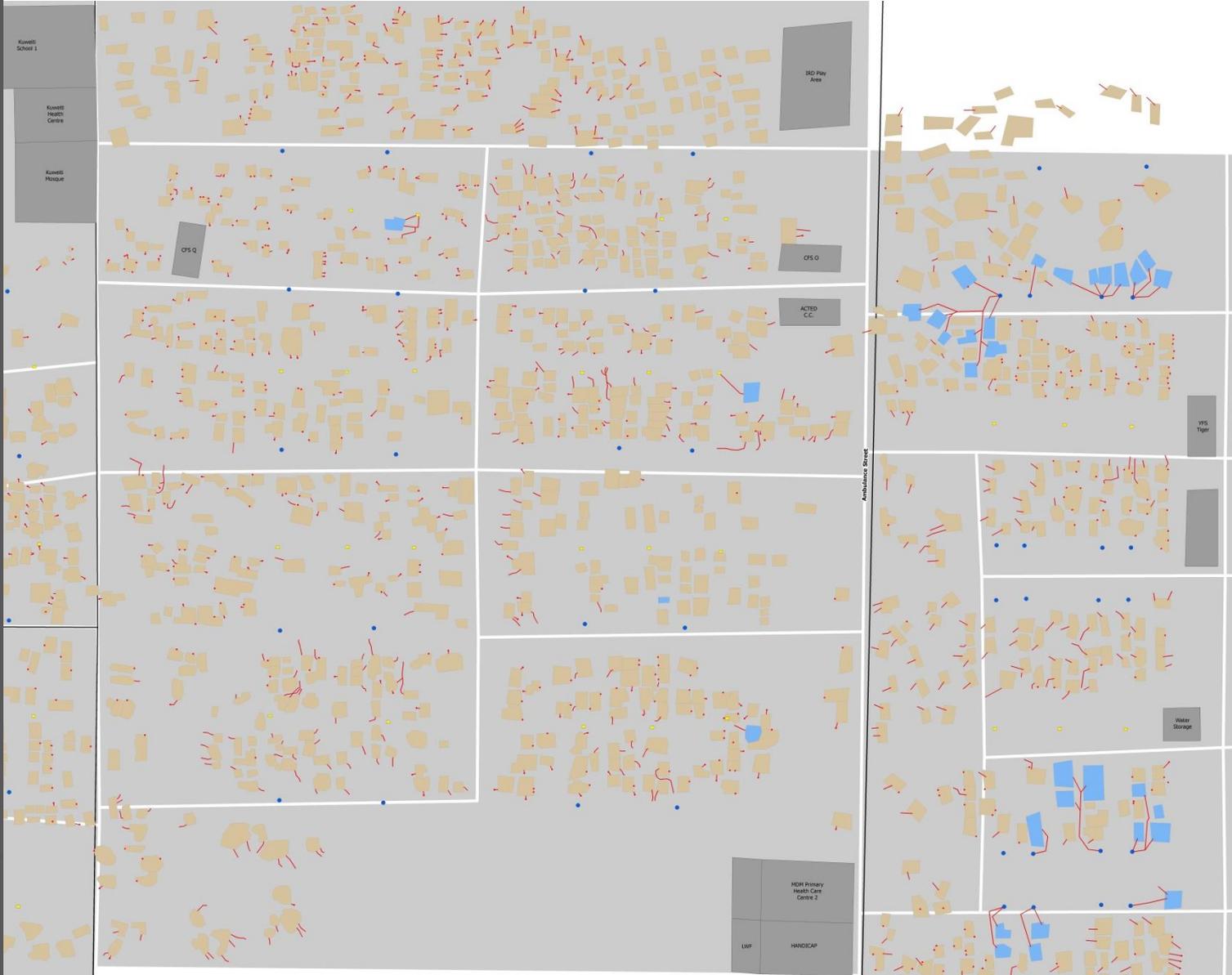
Households connected with drainage network and WASH block tanks: District 1

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Households connected with drainage network and WASH block tanks: District 5

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- Households**
- Connected with WASH Centre or public network
 - Not connected with WASH Centre or public network
 - Septic Tanks
 - Pipes and ditches
 - Official pipe connection
- Status of WASH Centre**
- Destroyed
 - Locked
 - Intact
 - Kitchens
 - Camp Facilities
 - District boundaries



Data Source: REACH
 Projection: WGS 1984 UTM Zone 37N
 Waste Water data collection: ACTED / REACH 24 September - 11 December 2013
 Map Reference: JOR_Zastari_WWA_Wastewater_Network
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Any Questions?

For any REACH Data, please contact:

Reach.mena@impact-initiatives.org