INDONESIA

Central Sulawesi Earthquake, Tsunami, and Liquefaction: Population Needs

Multi-Sector Needs Assessment: Sub-District Profiles, Donggala Regency

February 2019
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 118 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Respondent metadata

- **Total households interviewed**: 118
- **Average age of respondent in years**: 36%
- **of respondents were female**: 45

Demographics

- **Household composition by gender and age**
  - Female: 27% 18–59 years, 8% 13–17 years, 7% 6–12 years, 4% 1–5 years, 1% <1 year
  - Male: 4% 60+ years, 6% 13–17 years, 7% 6–12 years, 4% 1–5 years, 0% <1 year
  - **Average age of the head of household in years**: 46

- **Dependency ratio**
  - Youth dependency ratio: 0.7
  - Elderly dependency ratio: 0.2
  - Age-dependency ratio: 0.9

- **% of households by current living location**: 58% Own home, 3% Shelter next to original home, 0% Renting (non-displaced), 1% Renting (displaced), 31% Staying in another home that is not their own, 7% Informal settlement, 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their original home.
Displaced population

- **42%** of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- **78%** Nearby/on site
- **15%** Within 2km
- **4%** Between 2km–5km
- **3%** More than 5km or Don’t know

Non-displaced population

- **1%** of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of **0** IDP individuals in each displaced household hosted by a non-displaced household.

Average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs:

- **63%** of households reported that their original shelter was either destroyed or damaged by the disaster.

Movement intentions in the next 6 months

- **98%** Remain in the current location
- **2%** Return back to original home
- **1%** Move to a new location

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. **House destroyed/severely damaged** - **50%**
2. **Heavy damage to house** - **33%**
3. **Mild damage to house** - **33%**

Disabilities, Elderly, Minorities

- **3%** of households contained at least one member with a self-reported physical or mental disability.

Child Protection

- **2%** of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

- **51%** of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

Shelter conditions

% of households by type of shelter they are currently living in at the time of data collection:

- **88%** House
- **2%** Apartment
- **4%** Transitional shelter (individual)
- **2%** Makeshift Shelter
- **4%** Tent
- **0%** Don’t know
- **0%** Other

% of households by state of tenure for house at the time of data collection:

- **41%** Household owns the land
- **0%** Written agreement (still valid)
- **0%** Written agreement (expired)
- **59%** Verbal/No agreement
- **0%** Don’t know

Preferred Shelter Assistance

- **80%** of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

Protection of Women’s Needs

- **13%** of households contained at least one pregnant or lactating woman.

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:

1. Assistance to build/repair shelter: 60%
2. Shelter building materials: 42%
3. None: 15%

Top 3 most needed Non-Food Items (NFIs):

1. Bedding items (bedsheets, pillows): 83%
2. Cooking utensils/kitchen set: 68%
3. Mattresses/Sleeping mats: 55%

Hygiene practices

% of households by location used for hand washing:
- 68% Pouring device/sink faucet
- 26% Basin/bucket
- 6% No device
- 0% Don’t know

82% of households have water available for hand washing
57% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:
- 63% Household latrine/toilet
- 21% Communal latrine/toilet
- 13% Open defecation
- 3% Don’t know

There is an average of 6 households reported to be sharing each communal latrine.

Household and communal latrine conditions

- 84% of households with communal latrines reported their toilet had adequate lighting
- 0% of households with communal toilets reported that there are separate toilets for men and women
- 81% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:
- 19% Piped water
- 27% Public tap
- 20% Protected well/spring
- 0% Water tank/trucking
- 6% Bottled water
- 7% Unprotected source
- 21% Don’t know

97% of households reported drinking water that had been treated and was safe to drink
86% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):
- 90% Water source located on site
- 8% Less than 10 minutes
- 2% 10–20 minutes
- 0% More than 20 minutes
- 0% Don’t know

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:

Before Disaster | January 2019
---|---
Agricultural | Agricultural 52%
Fishing | Fishing 12%
Service industry | Unemployed 12%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school.

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. Other
   - 50%
2. School fees too expensive
   - 50%
3. School damaged/destroyed
   - 0%

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 23%
- Lightly damaged: 40%
- Moderately damaged: 19%
- Severe damage: 8%
- Don’t know: 10%
- Other: 0%

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score

- Acceptable: 87%
- Borderline: 11%
- Poor: 2%

Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI) average score

- 7.8

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 94%
- Purchased with cash assistance: 2%
- Food assistance (UN or INGO): 2%

Health

Immunization

8% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

33% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.

14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).

15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategy and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).

16. Single-choice question; only the top three responses are shown.

17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection: 18

1. Fever 74%
2. Coughing 69%
3. Diarrheal diseases 46%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection: 19

- No issues 82%
- Cost of medicine/treatment too high 15%
- No medicine/treatment available 3%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection: 20

1. None 55%
2. Treat health problems 33%
3. Get regular medications 32%

### Priority Needs

Top 3 most important priority needs as reported by households: 20

1. Food 92%
2. Shelter support 42%
3. Kitchen ware 32%

### Communication with Communities

#### Information Needs

% of households by the type of information that the household reported needing the most: 19

- Status of housing 40%
- Humanitarian assistance 30%
- Livelihoods 19%

% of households by most preferred source from which they would like to receive new information: 19

- Face-to-face communication (e.g. from friends) 59%
- Television 40%
- Social media 1%

### Humanitarian assistance

18% of households reported that they had received humanitarian aid in the 30 days prior to data collection

Top 3 most common types of aid that households reported having received: 18

1. Food 76%
2. Tarpaulin 29%
3. Cash 24%

% of households by most common reported source of aid: 18

- Government distribution 62%
- NGO distribution 38%
- Friends and family 0%

33% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.

19. Single-choice question; only the top three responses are shown.

20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology
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A sample of 112 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

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Demographics

<table>
<thead>
<tr>
<th>Household composition by gender and age</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>5% 60+ years</td>
<td></td>
</tr>
<tr>
<td>25% 18–59 years</td>
<td></td>
</tr>
<tr>
<td>6% 13–17 years</td>
<td></td>
</tr>
<tr>
<td>9% 6–12 years</td>
<td></td>
</tr>
<tr>
<td>4% 1–5 years</td>
<td></td>
</tr>
<tr>
<td>1% &lt;1 year</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>4% 1–5 years</td>
<td></td>
</tr>
<tr>
<td>1% &lt;1 year</td>
<td></td>
</tr>
</tbody>
</table>

There was an average of 4 individuals reported per household.

Head of Household
17% of heads of households were female
23% of heads of households were elderly
48 average age of the head of household in years

Dependency ratio
0.8 average youth dependency ratio
0.3 average elderly dependency ratio
1.1 average age-dependency ratio

% of households by current living location:
78% Own home
5% Shelter next to original home
0% Renting (non-displaced)
0% Renting (displaced)
15% Staying in another home that is not their own
2% Informal settlement
0% Other

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Respondent metadata
112 Total households interviewed
45 Average age of respondent in years
55% of respondents were female
Displaced population

22% of households were no longer living in their original house due to the disaster

% of households no longer living on land they own by distance from their current living location to their original house:

- 100% Nearby/on site
- 0% Within 2km
- 0% Between 2km–5km
- 0% More than 5km or Don’t know

Non-displaced population

1% of non-displaced households were hosting at least one displaced household in a house that they own

There is an average of 0 IDP individuals in each displaced household hosted by a non-displaced household

average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:

- 95% Remain in the current location
- 3% Move into the Government Transitional Shelter
- 2% Move to a new location

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. Heavy damage to house 33%
2. Area may be declared a no build (red) zone 33%
3. Mild damage to house 33%

Disabilities, Elderly, Minorities

0% of households contained at least one member with a self-reported physical or mental disability

Child Protection

1% of households contained at least one child that was separated from their usual caregiver

Psychosocial Support

54% of households reported having at least one member experiencing emotional distress from the disaster

Shelter

% of households by type of shelter they are currently living in at the time of data collection:

- 91% House
- 0% Apartment
- 0% Transitional shelter (individual)
- 3% Makeshift Shelter
- 6% Tent
- 0% Don’t know
- 0% Other

67% of households reported that their original shelter was either destroyed or damaged by the disaster

% of households by state of tenure for house at the time of data collection:

- 46% Household owns the land
- 0% Written agreement (still valid)
- 0% Written agreement (expired)
- 54% Verbal/No agreement
- 0% Don’t know

Preferred Shelter Assistance

96% of households reported that they would prefer to rebuild or repair their original home in the next 6 months

Protection of Women’s Needs

14% of households contained at least one pregnant or lactating woman

Displacement and Protection

Displaced population

22% of households were no longer living in their original house due to the disaster

% of households no longer living on land they own by distance from their current living location to their original house:

- 100% Nearby/on site
- 0% Within 2km
- 0% Between 2km–5km
- 0% More than 5km or Don’t know

Non-displaced population

1% of non-displaced households were hosting at least one displaced household in a house that they own

There is an average of 0 IDP individuals in each displaced household hosted by a non-displaced household

average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:

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0% of households contained at least one member with a self-reported physical or mental disability

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Psychosocial Support

54% of households reported having at least one member experiencing emotional distress from the disaster

Shelter

% of households by type of shelter they are currently living in at the time of data collection:

- 91% House
- 0% Apartment
- 0% Transitional shelter (individual)
- 3% Makeshift Shelter
- 6% Tent
- 0% Don’t know
- 0% Other

67% of households reported that their original shelter was either destroyed or damaged by the disaster

% of households by state of tenure for house at the time of data collection:

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- 0% Don’t know

Preferred Shelter Assistance

96% of households reported that they would prefer to rebuild or repair their original home in the next 6 months

Protection of Women’s Needs

14% of households contained at least one pregnant or lactating woman
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:10

1. Assistance to build/repair shelter: 80%
2. Shelter building materials: 40%
3. Help to obtain legal documentation for land/home ownership/etc.: 10%

Top 3 most needed Non-Food Items (NFIs):10

1. Bedding items (bedsheets, pillows): 79%
2. Cooking utensils/kitchen set: 79%
3. Mattresses/Sleeping mats: 55%

Water, Sanitation and Hygiene

Hygiene practices

% of households by location used for hand washing:
- 54% Pouring device/sink faucet
- 35% Basin/bucket
- 11% No device
- 0% Don’t know

82% of households have water available for hand washing
56% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:
- 45% Household latrine/toilet
- 16% Communal latrine/toilet
- 37% Open defecation
- 2% Don’t know

There is an average of 6 households reported to be sharing each communal latrine

Household and communal latrine conditions

90% of households with communal latrines reported their toilet had adequate lighting
6% of households with communal toilets reported that there are separate toilets for men and women
88% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:12

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>54% Agricultural</td>
<td>1 Agricultural 55%</td>
</tr>
<tr>
<td>18% Fishing</td>
<td>2 Fishing 16%</td>
</tr>
<tr>
<td>5% Unemployed</td>
<td>3 Unemployed 8%</td>
</tr>
</tbody>
</table>

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 0 child(ren) reported to not be attending school.

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. NA
2. NA
3. NA

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 6%
- Lightly damaged: 29%
- Moderately damaged: 29%
- Severe damage: 24%
- Don’t know: 12%
- Other: 0%

% of households reporting that the household main income was unemployment, before and after the disaster:

- Before Disaster: 5%
- January 2019: 8%

19% of households had at least one working-age household member that is not working.

Main reported barriers to finding work:

- The recent disaster destroyed previous business/job opportunities: 62%
- Disaster destroyed fishing boats: 10%
- Disaster destroyed cultivation land for planting: 10%

There is an average reported loss of 10% of household income due to the disaster.

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score

- Acceptable: 84%
- Borderline: 16%
- Poor: 0%

Average rCSI score: 5.8

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 93%
- Purchased with cash assistance: 5%
- Food assistance (government): 1%

Health

Immunization

29% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

43% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.
14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).
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16. Single-choice question; only the top three responses are shown.
17. Respondents could select multiple responses; only the top three choices are shown.

Education

Student attendance

1% of households with children reported having school-aged children who were not attending school following the disaster.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:\textsuperscript{18}

1. Fever 60%
2. Coughing 48%
3. Diarrheal diseases 42%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:\textsuperscript{19}

- No issues 81%
- Cost of medicine/treatment too high 10%
- No medicine/treatment available 4%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:\textsuperscript{20}

1. None 57%
2. Treat health problems 35%
3. Get regular medications 30%

### Priority Needs

Top 3 most important priority needs as reported by households:\textsuperscript{20}

1. Food 92%
2. Shelter support 59%
3. Kitchen ware 35%

### Communication with Communities

#### Information Needs

% of households by the type of information that the household reported needing the most:\textsuperscript{19}

- Humanitarian assistance 42%
- Status of housing 35%
- Livelihoods 12%

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19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
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Demographics

Household composition by gender and age
- 4% 60+ years
- 26% 18–59 years
- 6% 13–17 years
- 6% 6–12 years
- 5% 1–5 years
- 1% <1 year

Male
- 26% 60+ years
- 20% 18–59 years
- 6% 13–17 years
- 6% 6–12 years
- 5% 1–5 years
- 1% <1 year

Female
- 14% 60+ years
- 4% 18–59 years
- 7% 13–17 years
- 5% 6–12 years
- 4% 1–5 years
- 3% <1 year

There was an average of 5 individuals reported per household

Head of Household
- 14% of heads of households were female
- 19% of heads of households were elderly
- 48% average age of the head of household in years

Dependency ratio
- 0.8 average youth dependency ratio
- 0.3 average elderly dependency ratio
- 1 average age-dependency ratio

% of households by current living location:
- 66% Own home
- 4% Shelter next to original home
- 5% Renting (non-displaced)
- 2% Renting (displaced)
- 8% Staying in another home that is not their own
- 15% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Popu8lation of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their

Respondent metadata

112 Total households interviewed
45 Average age of respondent in years
64% of respondents were female
Displaced population

- 29% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- 32% Nearby/on site
- 32% Within 2km
- 21% Between 2km–5km
- 15% More than 5km or Don’t know

Non-displaced population

- 4% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 4 IDP individuals in each displaced household hosted by a non-displaced household.

- Average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs:
  - 0.5

Movement intentions in the next 6 months

- 88% Remain in the current location
- 8% Move into the Government Transitional Shelter
- 4% Return back to original home

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. House destroyed/ severely damaged 64%
2. Heavy damage to house 36%
3. Lack of livelihood opportunities 14%

Protection of Women’s Needs

- 20% of households contained at least one pregnant or lactating woman.

Disabilities, Elderly, Minorities

- 3% of households contained at least one member with a self-reported physical or mental disability.

Child Protection

- 4% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

- 49% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

% of households by type of shelter they are currently living in at the time of data collection:

- 73% House
- 7% Apartment
- 5% Transitional shelter (individual)
- 3% Makeshift Shelter
- 12% Tent
- 0% Don’t know
- 0% Other

71% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by state of tenure for house at the time of data collection:

- 59% Household owns the land
- 4% Written agreement (still valid)
- 0% Written agreement (expired)
- 35% Verbal/No agreement
- 2% Don’t know

Preferred Shelter Assistance

- 70% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

6. Dependency ratio is calculated by dividing the number of IDP individuals being hosted by the total size of the host household. The number shows the relative burden that hosting households have to support IDP households.

7. Single-choice question; only the top three responses are shown.

8. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.

9. In many households in Central Sulawesi, there is a cultural practice in which one household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:

1. Assistance to build/repair shelter (52%)
2. Shelter building materials (46%)
3. Tools for construction (18%)

Top 3 most needed Non-Food Items (NFIs):

1. Bedding items (bedsheets, pillows); 56%
2. Mattresses/Sleeping mats; 47%
3. Cooking utensils/kitchen set; 38%

Hygiene practices

% of households by location used for hand washing:

- 65% Pouring device/sink faucet
- 34% Basin/bucket
- 1% No device
- 0% Don’t know

96% of households have water available for hand washing
63% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- 65% Household latrine/toilet
- 24% Communal latrine/toilet
- 11% Open defecation
- 0% Don’t know

There is an average of 20 households reported to be sharing each communal latrine

Household and communal latrine conditions

- 78% of households with communal latrines reported their toilet had adequate lighting
- 1% of households with communal toilets reported that there are separate toilets for men and women
- 73% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- 38% Piped water
- 11% Public tap
- 4% Protected well/spring
- 4% Water tank/trucking
- 40% Bottled water
- 2% Unprotected source
- 1% Don’t know

94% of households reported drinking water that had been treated and was safe to drink
88% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- 78% Water source located on site
- 11% Less than 10 minutes
- 5% 10–20 minutes
- 5% More than 20 minutes
- 1% Don’t know

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:

Before Disaster
- 20% Fishing
- 19% Small business owner
- 12% Service industry

January 2019
- 1 Small business owner (16%)
- 2 Service industry (13%)
- 3 Unemployed (13%)

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school
Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. School fees too expensive 50%
2. Child not attending school before disaster 17%
3. Child needed to work for income 17%

Condition of school facilities

<table>
<thead>
<tr>
<th>% of households</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td>Good condition</td>
</tr>
<tr>
<td>15%</td>
<td>Lightly damaged</td>
</tr>
<tr>
<td>34%</td>
<td>Moderately damaged</td>
</tr>
<tr>
<td>7%</td>
<td>Severe damage</td>
</tr>
<tr>
<td>11%</td>
<td>Don’t know</td>
</tr>
<tr>
<td>3%</td>
<td>Other</td>
</tr>
</tbody>
</table>

There is an average reported loss of 10% of household income due to the disaster

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score

- 94% Acceptable
- 6% Borderline
- 0% Poor

Average rCSI Score: 3.2

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 87%
- Food assistance (charity, private company): 8%
- Purchased with cash assistance: 3%

Health

Immunization

1% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

45% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

Education

Student attendance

5% of households with children reported having school-aged children who were not attending school following the disaster.

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.
14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).
15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategy and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).
16. Single-choice question; only the top three responses are shown.
17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:18

1. Coughing 52%
2. Fever 38%
3. Diarrheal diseases 12%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:19

- No issues 74%
- Cost of medicine/treatment too high 16%
- Don’t know 6%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:20

1. Get regular medications 47%
2. None 36%
3. Treat health problems 16%

1.2.3 Priority Needs

Top 3 most important priority needs as reported by households:20

1. Food 81%
2. Kitchen ware 37%
3. Other NFIs 34%

% of households by most preferred source from which they would like to receive new information:19

- Face-to-face communication (e.g. from friends) 54%
- Television 30%
- Social media 10%

Humanitarian assistance

34% of households reported that they had received humanitarian aid in the 30 days prior to data collection

Top 3 most common types of aid that households reported having received:18

1. Food 84%
2. Cash 16%
3. Tents 13%

% of households by most common reported source of aid:18

- NGO distribution 29%
- Friends and family 18%
- Government distribution 18%

74% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 101 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

- 4% 60+ years
- 27% 18–59 years
- 6% 13–17 years
- 7% 6–12 years
- 5% 1–5 years
- 1% <1 year

Male and Female

There was an average of 5 individuals reported per household

Head of Household

- 13% of heads of households were female
- 15% of heads of households were elderly
- 45 average age of the head of household in years

Dependency ratio

- 0.9 average youth dependency ratio
- 0.2 average elderly dependency ratio
- 1.1 average age-dependency ratio

% of households by current living location

- 78% Own home
- 11% Shelter next to original home
- 1% Renting (non-displaced)
- 8% Renting (displaced)
- 2% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their
Displaced and Protection

Displaced population

21% of households were no longer living in their original house due to the disaster

% of households no longer living on land they own by distance from their current living location to their original house:
- 60% Nearby/on site
- 10% Within 2km
- 0% Between 2km–5km
- 30% More than 5km or Don’t know

Non-displaced population

3% of non-displaced households were hosting at least one displaced household in a house that they own

There is an average of 3 IDP individuals in each displaced household hosted by a non-displaced household

0.4 average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:
- 94% Remain in the current location
- 6% Return back to original home
- 0% Don’t know

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:
1. House destroyed/severely damaged 67%
2. Mild damage to house 33%
3. Land is lost to natural disaster 0%

Disabilities, Elderly, Minorities

1% of households contained at least one member with a self-reported physical or mental disability

Child Protection

2% of households contained at least one child that was separated from their usual caregiver

Psychosocial Support

64% of households reported having at least one member experiencing emotional distress from the disaster

Shelter

Shelter conditions

% of households by type of shelter they are currently living in at the time of data collection:
- 83% House
- 1% Apartment
- 1% Transitional shelter (individual)
- 13% Makeshift Shelter
- 2% Tent
- 0% Don’t know
- 0% Other

69% of households reported that their original shelter was either destroyed or damaged by the disaster

% of households by state of tenure for house at the time of data collection:
- 76% Household owns the land
- 1% Written agreement (still valid)
- 0% Written agreement (expired)
- 23% Verbal/No agreement
- 0% Don’t know

Preferred Shelter Assistance

75% of households reported that they would prefer to rebuild or repair their original home in the next 6 months

Protection of Women’s Needs

24% of households contained at least one pregnant or lactating woman

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.

6. Dependency ratio is calculated by dividing the number of IDP individuals being hosted by the total size of the host household. The number shows the relative burden that hosting households have to support IDP households.
7. Single-choice question; only the top three responses are shown.
8. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
9. In many households in Central Sulawesi, there is a cultural practice in which one household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:10

1. Assistance to build/repair shelter 57%
2. Shelter building materials 52%
3. Tools for construction 21%

Top 3 most needed Non-Food Items (NFIs):10

1. Mattresses/Sleeping mats 62%
2. Bedding items (bedsheets, pillows); 60%
3. Cooking utensils/kitchen set; 56%

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- 32% Piped water
- 32% Public tap
- 4% Protected well/spring
- 0% Water tank/trucking
- 12% Bottled water
- 20% Unprotected source
- 0% Don’t know

93% of households reported drinking water that had been treated and was safe to drink

68% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- 57% Water source located on site
- 20% Less than 10 minutes
- 8% 10–20 minutes
- 15% More than 20 minutes
- 0% Don’t know

Hygiene practices

% of households by location used for hand washing:

- 51% Pouring device/sink faucet
- 43% Basin/bucket
- 6% No device
- 0% Don’t know

94% of households have water available for hand washing

62% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- 44% Household latrine/toilet
- 10% Communal latrine/toilet
- 45% Open defecation
- 1% Don’t know

There is an average of 11 households reported to be sharing each communal latrine11

Household and communal latrine conditions

80% of households with communal latrines reported their toilet had adequate lighting

0% of households with communal toilets reported that there are separate toilets for men and women

78% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month;12

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>61%</td>
</tr>
<tr>
<td>Fishing</td>
<td>12%</td>
</tr>
<tr>
<td>Vocational</td>
<td>11%</td>
</tr>
</tbody>
</table>

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 2 child(ren) reported to not be attending school.

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. Child needed to work for income (67%)
2. Child needed for household chores (50%)
3. Fear of school collapsing (17%)

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 39%
- Lightly damaged: 20%
- Moderately damaged: 23%
- Severe damage: 17%
- Don’t know: 0%
- Other: 0%

% of households reporting that the household main income was unemployment, before and after the disaster:

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>3% are unemployed</td>
<td>6%</td>
</tr>
</tbody>
</table>

14% of households had at least one working-age household member that is not working.

Main reported barriers to finding work:

- The recent disaster destroyed previous business/job opportunities: 43%
- Only dangerous or low-paid jobs are available: 14%
- Disaster destroyed cultivation land for planting: 14%

There is an average reported loss of 0% of household income due to the disaster.

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

- Food Consumption Score: 86% Acceptable, 12% Borderline, 2% Poor
- Average rCSI score: 3.1

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 90%
- Own production (hunting, fishing, farming): 6%
- Purchased on credit (debt): 3%

Health

Immunization

- 8% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

- 48% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

Education

Student attendance

- 8% of households with children reported having school-aged children who were not attending school following the disaster.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection: 18

1. Fever 46%
2. Coughing 38%
3. Other health issue 21%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection: 19

- No issues 40%
- Cost of medicine/treatment too high 33%
- Health center too far away 19%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection: 20

1. None 37%
2. Treat health problems 36%
3. Get regular medications 35%

### Priority Needs

Top 3 most important priority needs as reported by households: 20

1. Food 79%
2. Kitchen ware 39%
3. Shelter support 30%

### Communication with Communities

#### Information Needs

% of households by the type of information that the household reported needing the most: 19

- Humanitarian assistance 46%
- Status of housing 22%
- Livelihoods 15%

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
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A sample of 98 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

- **Male**
  - 3% 60+ years
  - 29% 18–59 years
  - 7% 13–17 years
  - 7% 6–12 years
  - 5% 1–5 years
  - 0% <1 year

- **Female**
  - 29% 18–59 years
  - 7% 13–17 years
  - 7% 6–12 years
  - 8% 5–12 years
  - 7% 1–5 years
  - 1% 0–1 year

There was an average of 5 individuals reported per household.

Head of Household

- 6% of heads of households were female
- 14% of heads of households were elderly
- 46 average age of the head of household in years

Dependency ratio

- 0.8 average youth dependency ratio
- 0.2 average elderly dependency ratio
- 1 average age-dependency ratio

% of households by current living location:

- 61% Own home
- 3% Shelter next to original home
- 3% Renting (non-displaced)
- 0% Renting (displaced)
- 9% Staying in another home that is not their own
- 24% Informal settlement
- 0% Other

Respondent metadata

- 98 Total households interviewed
- 43 Average age of respondent in years
- 67% of respondents were female

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their
Displaced population

36% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:
- 21% Nearby/on site
- 61% Within 2km
- 9% Between 2km–5km
- 9% More than 5km or Don’t know

Non-displaced population

0% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 0 IDP individuals in each displaced household hosted by a non-displaced household.

average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:
- 80% Remain in the current location
- 10% Return back to original home
- 4% Move into the Government Transitional Shelter

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:
1. House destroyed/severely damaged (56%)
2. Heavy damage to house (29%)
3. Mild damage to house (18%)

Disabilities, Elderly, Minorities

3% of households contained at least one member with a self-reported physical or mental disability.

Child Protection

1% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

64% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

% of households by type of shelter they are currently living in at the time of data collection:
- 66% House
- 3% Apartment
- 7% Transitional shelter (individual)
- 20% Makeshift Shelter
- 4% Tent
- 0% Don’t know
- 0% Other

81% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by state of tenure for house at the time of data collection:
- 56% Household owns the land
- 2% Written agreement (still valid)
- 0% Written agreement (expired)
- 42% Verbal/No agreement
- 0% Don’t know
- 0% Other

Preferred Shelter Assistance

83% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

Protection of Women’s Needs

14% of households contained at least one pregnant or lactating woman.

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:¹⁰

1. Assistance to build/repair shelter 64%
2. Shelter building materials 58%
3. Tools for construction 31%

Top 3 most needed Non-Food Items (NFIs):¹⁰

1. Bedding items (bedsheets, pillows); 57%
2. Mattresses/Sleeping mats 54%
3. Cooking utensils/kitchen set; 53%

Hygiene practices

% of households by location used for hand washing:

- 59% Pouring device/sink faucet
- 37% Basin/bucket
- 4% No device
- 0% Don’t know

93% of households have water available for hand washing
66% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- 37% Household latrine/toilet
- 37% Communal latrine/toilet
- 24% Open defecation
- 2% Don’t know

There is an average of 18 households reported to be sharing each communal latrine

Household and communal latrine conditions

- 63% of households with communal latrines reported their toilet had adequate lighting
- 1% of households with communal toilets reported that there are separate toilets for men and women
- 78% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- 45% Piped water
- 28% Public tap
- 5% Protected well/spring
- 2% Water tank/trucking
- 11% Bottled water
- 9% Unprotected source
- 0% Don’t know

92% of households reported drinking water that had been treated and was safe to drink
86% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- 69% Water source located on site
- 16% Less than 10 minutes
- 8% 10–20 minutes
- 7% More than 20 minutes
- 0% Don’t know

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:¹²

Before Disaster | January 2019
--- | ---
29% Agricultural | 1 Agricultural 28%
26% Fishing | 2 Fishing 20%
9% Vocational profession | 3 Unemployed 12%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school.

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school: 19

1. School fees too expensive 67%
2. Child needed to work for income 33%
3. Child not attending school before disaster 0%

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 22%
- Lightly damaged: 26%
- Moderately damaged: 30%
- Severe damage: 7%
- Don’t know: 14%
- Other: 1%

There is an average reported loss of 10% of household income due to the disaster. 13

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score 14

- Acceptable: 91%
- Borderline: 8%
- Poor: 1%

Average rCSI score 15

- 3.4

% of households per main reported source of food in week prior to data collection: 18

- Purchased with own cash: 92%
- Food assistance (government): 4%
- Gift from family or friends: 2%

Health

Immunization

- 4% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

- 50% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

Education

Student attendance

- 4% of households with children reported having school-aged children who were not attending school following the disaster.

---

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.
14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).
15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategy and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).
16. Single-choice question; only the top three responses are shown.
17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:  

1. Fever 53%  
2. Coughing 51%  
3. Diarrheal diseases 24%  

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:  

- No issues 59%  
- Health center too far away 18%  
- Cost of medicine/treatment too high 14%  

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:  

1. Get regular medications 45%  
2. None 38%  
3. Treat health problems 21%  

### Priority Needs  

Top 3 most important priority needs as reported by households:  

1. Food 88%  
2. Kitchen ware 35%  
3. Shelter support 29%  

## Communication with Communities  

### Information Needs  

% of households by the type of information that the household reported needing the most:  

- Humanitarian assistance 37%  
- Status of housing 33%  
- Livelihoods 16%  

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.  
19. Single-choice question; only the top three responses are shown.  
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 99 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

<table>
<thead>
<tr>
<th>Gender</th>
<th>0–1 year</th>
<th>1–5 years</th>
<th>6–12 years</th>
<th>13–17 years</th>
<th>18–59 years</th>
<th>60+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1%</td>
<td>6%</td>
<td>8%</td>
<td>8%</td>
<td>27%</td>
<td>3%</td>
</tr>
<tr>
<td>Female</td>
<td>1%</td>
<td>7%</td>
<td>8%</td>
<td>26%</td>
<td>27%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Head of Household

- 18% of heads of households were female
- 15% of heads of households were elderly
- 48 average age of the head of household in years

Dependency ratio

- 0.9 average youth dependency ratio
- 0.2 average elderly dependency ratio
- 1.1 average age-dependency ratio

% of households by current living location:

- 68% Own home
- 8% Shelter next to original home
- 0% Renting (non-displaced)
- 0% Renting (displaced)
- 12% Staying in another home that is not their own
- 12% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their original home.
Displaced population

32% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- 50% Nearby/on site
- 42% Within 2km
- 4% Between 2km–5km
- 4% More than 5km or Don’t know

Non-displaced population

13% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 2 IDP individuals in each displaced household hosted by a non-displaced household.

0.5 average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs.

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:

- Remain in the current location: 76%
- Move into the Government Transitional Shelter: 11%
- Don’t know: 7%

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. House destroyed/severely damaged: 75%
2. Fear that house is still unsafe: 61%
3. Fear that land is still unsafe: 44%

Disabilities, Elderly, Minorities

11% of households contained at least one member with a self-reported physical or mental disability.

Child Protection

5% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

74% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

Shelter conditions

% of households by type of shelter they are currently living in at the time of data collection:

- House: 76%
- Apartment: 0%
- Transitional shelter (individual): 1%
- Makeshift Shelter: 4%
- Tent: 18%
- Don’t know: 0%
- Other: 1%

81% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by state of tenure for house at the time of data collection:

- Household owns the land: 28%
- Written agreement (still valid): 6%
- Written agreement (expired): 0%
- Verbal/No agreement: 66%
- Don’t know: 0%

Preferred Shelter Assistance

70% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

Protection of Women’s Needs

30% of households contained at least one pregnant or lactating woman.

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:10

1. Shelter building materials 54%
2. Assistance to build/repair shelter 52%
3. Provide water to shelter 23%

Top 3 most needed Non-Food Items (NFIs):10

1. Cooking utensils/kitchen set; 70%
2. Bedding items (bedsheets, pillows); 43%
3. Mattresses/Sleeping mats 40%

Hygiene practices

% of households by location used for hand washing:

- 36% Pouring device/sink faucet
- 43% Basin/bucket
- 21% No device
- 0% Don’t know

91% of households have water available for hand washing
72% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- 67% Household latrine/toilet
- 16% Communal latrine/toilet
- 11% Open defecation
- 6% Don’t know

There is an average of 16 households reported to be sharing each communal latrine

Household and communal latrine conditions

- 79% of households with communal latrines reported their toilet had adequate lighting
- 4% of households with communal toilets reported that there are separate toilets for men and women
- 83% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:12

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>35%</td>
</tr>
<tr>
<td>Small business owner</td>
<td>23%</td>
</tr>
<tr>
<td>Construction</td>
<td>10%</td>
</tr>
<tr>
<td>Agricultural</td>
<td>1</td>
</tr>
<tr>
<td>Small business owner</td>
<td>2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
</tr>
</tbody>
</table>

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
 Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school.

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. School damaged/destroyed (56%)
2. Fear of school collapsing (44%)
3. Household displaced; school too far (22%)

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- 16% Good condition
- 28% Lightly damaged
- 27% Moderately damaged
- 24% Severe damage
- 3% Don't know
- 2% Other

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

<table>
<thead>
<tr>
<th>Food Consumption Score</th>
<th>average rCSI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>84%</td>
</tr>
<tr>
<td>Borderline</td>
<td>14%</td>
</tr>
<tr>
<td>Poor</td>
<td>2%</td>
</tr>
</tbody>
</table>

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 84%
- Own production (hunting, fishing, farming): 5%
- Gift from family or friends: 5%

Health

Immunization

40% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

66% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.

14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).

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16. Single-choice question; only the top three responses are shown.

17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:18

1. Fever 66%
2. Coughing 55%
3. Diarrheal diseases 45%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:19

- No issues 82%
- Cost of medicine/treatment too high 6%
- Patient cannot physically access treatment 3%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:20

1. Treat health problems 48%
2. Get regular medications 48%
3. None 25%

1.2.3 Priority Needs

Top 3 most important priority needs as reported by households:20

1. Food 74%
2. Kitchen ware 60%
3. Shelter support 42%

% of households by most preferred source from which they would like to receive new information:19

- Face-to-face communication (e.g. from friends) 66%
- Television 13%
- Loud speakers 5%

Humanitarian assistance

48% of households reported that they had received humanitarian aid in the 30 days prior to data collection

Top 3 most common types of aid that households reported having received:18

1. Food 89%
2. Health 26%
3. Shelter 15%

% of households by most common reported source of aid:18

- NGO distribution 38%
- Government distribution 34%
- Religious Organization 11%

55% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

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A sample of 119 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>60+ years</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>18–59 years</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td>13–17 years</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>6–12 years</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>1–5 years</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

There was an average of 6 individuals reported per household

Head of Household

- 17% of heads of households were female
- 12% of heads of households were elderly
- 46 average age of the head of household in years

Dependency ratio

- 0.8 average youth dependency ratio
- 0.2 average elderly dependency ratio
- 1 average age-dependency ratio

% of households by current living location

- 48% Own home
- 22% Shelter next to original home
- 2% Renting (non-displaced)
- 2% Renting (displaced)
- 8% Staying in another home that is not their own
- 18% Informal settlement
- 0% Other

Respondent metadata

- 119 Total households interviewed
- 41 Average age of respondent in years
- 60% of respondents were female

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18-59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their
## Displacements and Protection

### Displaced population
- 50% of households were no longer living in their original house due to the disaster.

### Non-displaced population
- 8% of non-displaced households were hosting at least one displaced household in a house that they own.

- There is an average of 3 IDP individuals in each displaced household hosted by a non-displaced household.

- Average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs: 0.4

### Movement intentions in the next 6 months
- 71% of households want to remain in their current location.
- 12% want to move to a new location.
- 10% want to return to their original home.

### Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:
1. House destroyed/severely damaged (61%)
2. Heavy damage to house (45%)
3. Mild damage to house (21%)

## Disabilities, Elderly, Minorities
- 1% of households contained at least one member with a self-reported physical or mental disability.

## Child Protection
- 2% of households contained at least one child that was separated from their usual caregiver.

## Psychosocial Support
- 56% of households reported having at least one member experiencing emotional distress from the disaster.

## Shelter

### Shelter conditions
- 56% of households are currently living in a house.
- 3% are living in an apartment.
- 3% are living in a transitional shelter (individual).
- 2% are living in a makeshift shelter.
- 36% are living in a tent.
- 0% do not know their current shelter type.

### Non-displaced population
- 89% of households reported that their original shelter was either destroyed or damaged by the disaster.

### Preferred Shelter Assistance
- 81% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

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**Protection of Women’s Needs**
- 20% of households contained at least one pregnant or lactating woman.

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*Note: The text includes additional details and explanations for each category, such as definitions and further explanations of the data presented.*
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection: \(^{10}\)

1. Assistance to build/repair shelter: 75%
2. Shelter building materials: 57%
3. Provide water to shelter: 13%

Top 3 most needed Non-Food Items (NFIs): \(^{10}\)

1. Cooking utensils/kitchen set: 82%
2. Bedding items (bedsheets, pillows): 64%
3. Cooking stove: 35%

Hygiene practices

- % of households by location used for hand washing:
  - Pouring device/sink faucet: 38%
  - Basin/bucket: 45%
  - No device: 17%
  - Don’t know: 0%

- 89% of households have water available for hand washing
- 32% of households have soap available for hand washing

Sanitation conditions

- % of households by most common defecation practice:
  - Household latrine/toilet: 50%
  - Communal latrine/toilet: 25%
  - Open defecation: 25%
  - Don’t know: 0%

There is an average of 22 households reported to be sharing each communal latrine. \(^{11}\)

Household and communal latrine conditions

- 61% of households with communal latrines reported their toilet had adequate lighting
- 9% of households with communal toilets reported that there are separate toilets for men and women
- 81% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

- % of households acquired most of their drinking water from the following sources:
  - Piped water: 17%
  - Public tap: 25%
  - Protected well/spring: 22%
  - Water tank/trucking: 0%
  - Bottled water: 5%
  - Unprotected source: 31%
  - Don’t know: 0%

- 92% of households reported drinking water that had been treated and was safe to drink
- 61% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- Water source located on site: 37%
- Less than 10 minutes: 26%
- 10–20 minutes: 17%
- More than 20 minutes: 20%
- Don’t know: 0%

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month: \(^{12}\)

Before Disaster | January 2019
--- | ---
43% Agricultural | 1 Agricultural | 39%
12% Small business owner | 2 Unemployed | 10%
8% Service industry | 3 Small business owner | 10%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school. Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:\(^1\)

1. Fear of school collapsing 50%
2. School damaged/destroyed 50%
3. Child needed to work for income 0%

### Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- 8% Good condition
- 25% Lightly damaged
- 30% Moderately damaged
- 23% Severe damage
- 13% Don’t know
- 1% Other

### Food Security

**Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)**

- Food Consumption Score\(^14\)
- average rCSI score\(^15\)

<table>
<thead>
<tr>
<th>Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>81%</td>
</tr>
<tr>
<td>Borderline</td>
<td>16%</td>
</tr>
<tr>
<td>Poor</td>
<td>3%</td>
</tr>
</tbody>
</table>

% of households per main reported source of food in week prior to data collection:\(^18\)

- Purchased with own cash 84%
- Food assistance (government) 8%
- Food assistance (charity, private company) 5%

### Health

#### Immunization

- 28% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

#### Illness and injury

- 59% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.

14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).

15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategy and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).

16. Single-choice question; only the top three responses are shown.

17. Respondents could select multiple responses; only the top three choices are shown.
### Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:

1. Fever 63%
2. Coughing 53%
3. Diarrheal diseases 26%

### Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:

- No issues: 77%
- No information where health facilities are: 7%
- Cost of medicine/treatment too high: 6%

### Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:

1. Treat health problems: 57%
2. None: 34%
3. Get regular medications: 18%

### Priority Needs

#### Top 3 most important priority needs as reported by households:

1. Food 90%
2. Shelter support 46%
3. Kitchen ware 34%

### Information Needs

% of households by the type of information that the household reported needing the most:

- Humanitarian assistance: 50%
- Status of housing: 32%
- Livelihoods: 11%

---

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology
Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 122 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics
Household composition by gender and age
- 4% males 60+ years
- 27% males 18–59 years
- 7% males 13–17 years
- 8% males 6–12 years
- 5% males 1–5 years
- 1% males <1 year
- 27% females 18–59 years
- 7% females 13–17 years
- 6% females 6–12 years
- 4% females 1–5 years
- 2% females <1 year

There was an average of 5 individuals reported per household

Head of Household
- 10% of heads of households were female
- 16% of heads of households were elderly
- 44 average age of the head of household in years

Dependency ratio
- 0.8 average youth dependency ratio
- 0.2 average elderly dependency ratio
- 1 average age-dependency ratio

% of households by current living location:
- 79% Own home
- 2% Shelter next to original home
- 0% Renting (non-displaced)
- 2% Renting (displaced)
- 17% Staying in another home that is not their own
- 0% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their...
Displaced population

- 21% of households were no longer living in their original house due to the disaster

- % of households no longer living on land they own by distance from their current living location to their original house:
  - 39% Nearby/on site
  - 22% Within 2km
  - 22% Between 2km–5km
  - 17% More than 5km or Don’t know

Non-displaced population

- 7% of non-displaced households were hosting at least one displaced household in a house that they own

There is an average of 4 IDP individuals in each displaced household hosted by a non-displaced household.

- 0.9 average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs

Movement intentions in the next 6 months

- % of households by where they most want to move to within the next six months:
  - 86% Remain in the current location
  - 8% Move to a new location
  - 4% Return back to original home

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. House destroyed/ severely damaged - 62%
2. Mild damage to house - 50%
3. Heavy damage to house - 31%

Protection of Women’s Needs

- 24% of households contained at least one pregnant or lactating woman

Disabilities, Elderly, Minorities

- 3% of households contained at least one member with a self-reported physical or mental disability

Child Protection

- 2% of households contained at least one child that was separated from their usual caregiver

Psychosocial Support

- 69% of households reported having at least one member experiencing emotional distress from the disaster

Shelter

Shelter conditions

- % of households by type of shelter they are currently living in at the time of data collection:
  - 93% House
  - 2% Apartment
  - 0% Transitional shelter (individual)
  - 2% Makeshift Shelter
  - 2% Tent
  - 0% Don’t know
  - 1% Other

- 91% of households reported that their original shelter was either destroyed or damaged by the disaster

% of households by state of tenure for house at the time of data collection:

- 38% Household owns the land
- 9% Written agreement (still valid)
- 0% Written agreement (expired)
- 53% Verbal/No agreement
- 0% Don’t know

Preferred Shelter Assistance

- 86% of households reported that they would prefer to rebuild or repair their original home in the next 6 months

- Dependency ratio is calculated by dividing the number of IDP individuals being hosted by the total size of the host household. The number shows the relative burden that hosting households have to support IDP households.
- Single-choice question; only the top three responses are shown.
- Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
- In many households in Central Sulawesi, there is a cultural practice in which one household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:

1. Assistance to build/repair shelter - 78%
2. Shelter building materials - 61%
3. Construction labor - 18%

Top 3 most needed Non-Food Items (NFIs):

1. Cooking utensils/kitchen set; - 81%
2. Bedding items (bedsheets, pillows); - 48%
3. Cooking stove - 38%

Hygiene practices

% of households by location used for hand washing:

- Pouring device/sink faucet: 43%
- Basin/bucket: 51%
- No device: 6%
- Don’t know: 0%

95% of households have water available for hand washing
59% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- Household latrine/toilet: 48%
- Communal latrine/toilet: 15%
- Open defecation: 35%
- Don’t know: 2%

There is an average of 5 households reported to be sharing each communal latrine

Household and communal latrine conditions

58% of households with communal latrines reported their toilet had adequate lighting
1% of households with communal toilets reported that there are separate toilets for men and women
57% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- Piped water: 27%
- Public tap: 34%
- Protected well/spring: 13%
- Water tank/trucking: 2%
- Bottled water: 24%
- Unprotected source: 0%

92% of households reported drinking water that had been treated and was safe to drink
66% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- Water source located on site: 56%
- Less than 10 minutes: 14%
- 10–20 minutes: 20%
- More than 20 minutes: 10%
- Don’t know: 0%

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:

Before Disaster January 2019

- Agricultural: 72% 1 Agricultural: 70%
- Vocational profession: 9% 2 Vocational profession: 9%
- Fishing: 8% 3 Fishing: 5%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school. Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. Fear of school collapsing (40%)
2. Child needed to work for income (20%)
3. Child not attending school before disaster (20%)

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- 16% Good condition
- 21% Lightly damaged
- 29% Moderately damaged
- 15% Severe damage
- 16% Don’t know
- 3% Other

There is an average reported loss of 10% of household income due to the disaster.

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

<table>
<thead>
<tr>
<th>Food Consumption Score</th>
<th>average rCSI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>76%</td>
<td>8.5</td>
</tr>
<tr>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>7%</td>
<td></td>
</tr>
</tbody>
</table>

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash 96%
- Gift from family or friends 2%
- Own production (hunting, fishing, farming) 2%

Health

Immunization

23% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

73% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

Education

Student attendance

6% of households with children reported having school-aged children who were not attending school following the disaster.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:

1. Fever 64%
2. Coughing 56%
3. Diarrheal diseases 26%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:

- No issues 78%
- Cost of medicine/treatment too high 12%
- Other 4%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:

1. Treat health problems 49%
2. None 37%
3. Get regular medications 14%

### 1.2.3 Priority Needs

Top 3 most important priority needs as reported by households:

1. Food 89%
2. Kitchen ware 43%
3. Shelter support 37%

% of households by most preferred source from which they would like to receive new information:

- Face-to-face communication (e.g. from friends) 91%
- Television 7%
- Don’t know 1%

Humanitarian assistance of households reported that they had received humanitarian aid in the 30 days prior to data collection:

14%

Top 3 most common types of aid that households reported having received:

1. Food 100%
2. Health 6%
3. Tools 0%

% of households by most common reported source of aid:

- NGO distribution 47%
- Government distribution 29%
- Religious Organization 12%

53% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection.

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Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 125 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>60+ years</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>18–59 years</td>
<td>23%</td>
<td>26%</td>
</tr>
<tr>
<td>13–17 years</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>6–12 years</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>1–5 years</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

There was an average of 6 individuals reported per household.

Head of Household

- 14% of heads of households were female
- 21% of heads of households were elderly
- 49 average age of the head of household in years

Dependency ratio

- average youth dependency ratio: 1
- average elderly dependency ratio: 0.3
- average age-dependency ratio: 1.2

% of households by current living location:

- 70% Own home
- 13% Shelter next to original home
- 0% Renting (non-displaced)
- 0% Renting (displaced)
- 10% Staying in another home that is not their own
- 7% Informal settlement
- 0% Other

Respondent metadata

- 125 Total households interviewed
- 46 Average age of respondent in years
- 60% of respondents were female

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their...
Multi-Sector Needs Assessment
Central Sulawesi Province
Donggala Regency, Sindue Tombusabora Sub-District
INDONESIA
February 2019

Displaced population\(^5\)

- 30\% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- 71\% Nearby/on site
- 24\% Within 2km
- 0\% Between 2km–5km
- 5\% More than 5km or Don’t know

Non-displaced population\(^5\)

- 5\% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 4 IDP individuals in each displaced household hosted by a non-displaced household.

Average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs\(^6\):

- 0.4

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:\(^7\)

- Remain in the current location: 89\%
- Move into the Government Transitional Shelter: 7\%
- Return back to original home: 2\%

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:\(^8\)

1. House destroyed/severely damaged: 100\%
2. Heavy damage to house: 46\%
3. Fear that house is still unsafe: 31\%

Disabilities, Elderly, Minorities

- 4\% of households contained at least one member with a self-reported physical or mental disability.

Child Protection

- 2\% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

- 73\% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

Shelter conditions

% of households by type of shelter they are currently living in at the time of data collection:

- 80\% House
- 0\% Apartment
- 2\% Transitional shelter (individual)
- 2\% Makeshift Shelter
- 14\% Tent
- 0\% Don’t know
- 2\% Other

92\% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by state of tenure for house at the time of data collection:

- 60\% Household owns the land
- 7\% Written agreement (still valid)
- 0\% Written agreement (expired)
- 33\% Verbal/No agreement\(^6\)
- 0\% Don’t know

Preferred Shelter Assistance

- 87\% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

Protection of Women’s Needs

- 23\% of households contained at least one pregnant or lactating woman.

Displacement and Protection

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.

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6. Dependency ratio is calculated by dividing the number of IDP individuals being hosted by the total size of the host household. The number shows the relative burden that hosting households have to support IDP households.
7. Single-choice question; only the top three responses are shown.
8. Respondents could select multiple responses; therefore results may exceed 100\%; only the top three choices are shown.
9. In many households in Central Sulawesi, there is a cultural practice in which one household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection: 1
1. Assistance to build/repair shelter 82%
2. Shelter building materials 65%
3. Construction labor 12%

Top 3 most needed Non-Food Items (NFIs): 10
1. Cooking utensils/kitchen set; 79%
2. Bedding items (bedsheets, pillows); 48%
3. Water storage 35%

Hygiene practices
% of households by location used for hand washing:
- 64% Pouring device/sink faucet
- 30% Basin/bucket
- 6% No device
- 0% Don’t know

98% of households have water available for hand washing
59% of households have soap available for hand washing

Sanitation conditions
% of households by most common defecation practice:
- 46% Household latrine/toilet
- 17% Communal latrine/toilet
- 35% Open defecation
- 2% Don’t know

There is an average of 8 households reported to be sharing each communal latrine 11

Household and communal latrine conditions
- 68% of households with communal latrines reported their toilet had adequate lighting
- 3% of households with communal toilets reported that there are separate toilets for men and women
- 50% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Economy

Occupation and employment
Main occupation of the household reported by households before the disaster and in the last month: 12

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>1 Agricultural 68%</td>
</tr>
<tr>
<td>Small business owner</td>
<td>2 Unemployed 9%</td>
</tr>
<tr>
<td>Vocational profession</td>
<td>3 Vocational profession 6%</td>
</tr>
</tbody>
</table>

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
% of households reporting that the household main income was unemployment, before and after the disaster:

Before Disaster | January 2019
---|---
2% are unemployed | 9%

5% of households had at least one working-age household member that is not working

Main reported barriers to finding work:

- Increased competition for jobs: 33%
- Disaster destroyed business/job opportunities: 33%
- Underqualified for available jobs: 17%

There is an average reported loss of 10% of household income due to the disaster

### Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

- Food Consumption Score: 63% Acceptable, 28% Borderline, 9% Poor

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 96%
- Food assistance (government): 2%
- Food assistance (charity, private company): 1%

### Education

Student attendance

- 4% of households with children reported having school-aged children who were not attending school following the disaster

Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. Fear of school collapsing: 75%
2. Other: 25%
3. Route to school is too dangerous: 25%

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 9%
- Lightly damaged: 26%
- Moderately damaged: 42%
- Severe damage: 13%
- Don’t know: 7%
- Other: 3%

### Health

Immunization

- 21% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

- 65% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.

14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).

15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategy and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).

16. Single-choice question; only the top three responses are shown.

17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection:18

1. Coughing 63%
2. Fever 62%
3. Diarrheal diseases 30%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection:19

- No issues 75%
- Health center not open 10%
- Cost of medicine/treatment too high 9%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection:20

1. Treat health problems 56%
2. None 38%
3. Get regular medications 12%

1.2.3 Priority Needs

Top 3 most important priority needs as reported by households:20

1. Food 94%
2. Other NFIs 40%
3. Kitchen ware 39%

% of households by most preferred source from which they would like to receive new information:19

- Face-to-face communication (e.g. from friends) 94%
- Television 3%
- Other 1%

Humanitarian assistance

8% of households reported that they had received humanitarian aid in the 30 days prior to data collection

Top 3 most common types of aid that households reported having received:18

1. Food 90%
2. Tents 30%
3. Cash 10%

% of households by most common reported source of aid:18

- Government distribution 40%
- Religious Organization 40%
- Private Company 10%

70% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 108 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

Demographics

Household composition by gender and age

- Male:
  - 5% 60+ years
  - 24% 18–59 years
  - 7% 13–17 years
  - 8% 6–12 years
  - 4% 1–5 years
  - 1% <1 year

- Female:
  - 105% 18–59 years
  - 9% 7 years
  - 6% 8–12 years
  - 3% 4–5 years
  - 1% <1 year

There was an average of 5 individuals reported per household.

Head of Household

- 16% of heads of households were female
- 20% of heads of households were elderly
- 50 average age of the head of household in years

Dependency ratio

- 0.8 average youth dependency ratio
- 0.3 average elderly dependency ratio
- 1.1 average age-dependency ratio

% of households by current living location:

- 55% Own home
- 28% Shelter next to original home
- 0% Renting (non-displaced)
- 1% Renting (displaced)
- 10% Staying in another home that is not their own
- 6% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (MoHA, 2017). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
3. Respondent metadata provides information on the respondents interviewed for the questionnaire. While the respondent was usually the head of household, if the head of household was not present at the time of interview, a member of the household knowledgeable about household affairs responded instead. This section only shows information on respondents, not the heads of household. Results in this section are not weighted by population, and should be considered as indicative.
4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their
Displaced population

45% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- 58% Nearby/on site
- 32% Within 2km
- 5% Between 2km–5km
- 5% More than 5km or Don’t know

Non-displaced population

7% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 3 IDP individuals in each displaced household hosted by a non-displaced household.

Average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs:

1

Movement intentions in the next 6 months

% of households by where they most want to move to within the next six months:

- Remain in the current location 93%
- Move to a new location 3%
- Move into the Government Transitional Shelter 3%

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. House destroyed/severely damaged
2. Heavy damage to house
3. Area may be declared a no build (red) zone

Disabilities, Elderly, Minorities

3% of households contained at least one member with a self-reported physical or mental disability.

Child Protection

1% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support

68% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter

% of households by type of shelter they are currently living in at the time of data collection:

- 61% House
- 1% Apartment
- 2% Transitional shelter (individual)
- 7% Makeshift Shelter
- 29% Tent
- 0% Don’t know
- 0% Other

81% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by state of tenure for house at the time of data collection:

- 59% Household owns the land
- 1% Written agreement (still valid)
- 0% Written agreement (expired)
- 40% Verbal/No agreement
- 0% Don’t know

Preferred Shelter Assistance

96% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

Protection of Women’s Needs

12% of households contained at least one pregnant or lactating woman.

original home were living on their original land and considered to be non-displaced. Those living with friends or family, in an informal settlement, or renting after they were displaced from their homes were no longer living on their original land and had been displaced by the disaster. For households living in their original home, categorization of displacement was the same, except that those staying in tents next to their original home were considered to be displaced.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:10

1. Assistance to build/repair shelter 82%
2. Shelter building materials 52%
3. Provide electricity to shelter 10%

Top 3 most needed Non-Food Items (NFIs):10

1. Cooking utensils/kitchen set; 86%
2. Bedding items (bedsheets, pillows); 84%
3. Mattresses/Sleeping mats 65%

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- Piped water 18%
- Public tap 32%
- Protected well/spring 12%
- Water tank/trucking 2%
- Bottled water 22%
- Unprotected source 13%

95% of households reported drinking water that had been treated and was safe to drink

94% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- Water source located on site 91%
- Less than 10 minutes 6%
- 10–20 minutes 3%
- More than 20 minutes 0%
- Don’t know 0%

Hygiene practices

% of households by location used for hand washing:

- Pouring device/sink faucet 48%
- Basin/bucket 35%
- No device 17%
- Don’t know 0%

73% of households have water available for hand washing

51% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- Household latrine/toilet 53%
- Communal latrine/toilet 23%
- Open defecation 23%
- Don’t know 1%

There is an average of 12 households reported to be sharing each communal latrine

Household and communal latrine conditions

- 73% of households with communal latrines reported their toilet had adequate lighting
- 6% of households with communal toilets reported that there are separate toilets for men and women
- 90% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:12

Before Disaster

- Agricultural 60%
- Unemployed 10%
- Small business owner 8%

January 2019

- Agricultural 55%
- Unemployed 18%
- Small business owner 9%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 0 child(ren) reported to not be attending school

Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. NA 0%
2. NA 0%
3. NA 0%

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- 9% Good condition
- 26% Lightly damaged
- 41% Moderately damaged
- 15% Severe damage
- 9% Don’t know
- 0% Other

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score14 average rCSI score15

89% Acceptable
9% Borderline
2% Poor

4.1

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash 91%
- Own production (hunting, fishing, farming) 4%
- Gift from family or friends) 3%

Education

Student attendance

0% of households with children reported having school-aged children who were not attending school following the disaster

13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.

14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).

15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategies and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).

16. Single-choice question; only the top three responses are shown.

17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection: 18

1. Coughing 62%
2. Fever 62%
3. Diarrheal diseases 52%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection: 19

No issues 76%
Cost of medicine/treatment too high 16%
No medicine/treatment available 4%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection: 20

1. Treat health problems 46%
2. None 44%
3. Get regular medications 39%

Priority Needs

Top 3 most important priority needs as reported by households: 20

1. Food 97%
2. Shelter support 68%
3. Kitchen ware 40%

Information Needs

% of households by the type of information that the household reported needing the most: 19

Status of housing 48%
Humanitarian assistance 39%
Livelihoods 10%

Humanitarian assistance

% of households by most preferred source from which they would like to receive new information: 19

Face-to-face communication (e.g. from friends) 85%
Television 13%
Social media 1%

Top 3 most common types of aid that households reported having received: 18

1. Food 79%
2. Tents 63%
3. Cash 37%

% of households by most common reported source of aid: 18

Government distribution 74%
NGO distribution 18%
Private Company 8%

31% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

18. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
19. Single-choice question; only the top three responses are shown.
20. Respondents could select up to three responses, therefore results may exceed 100%; only the top three choices are shown.
Background and methodology

Following a 7.7 magnitude earthquake on 28 September, 2018, large parts of Palu, Donggala, Sigi, and Parigi Moutong regencies in Central Sulawesi province were destroyed by earthquake, tsunami, and liquefaction events. As of 10 December 2018, approximately 2,101 people have been killed, 1,373 are missing, and an estimated 133,631 individuals were displaced in informal settlements. An estimated 15,000 houses have been destroyed and another 17,000 heavily damaged. However, four months after the initial disaster, there is still very little understanding of the needs and vulnerabilities of the affected population in Central Sulawesi Province.

To fill this gap, a Multi-Sector Needs Assessment (MSNA) was conducted by Humanitarian Forum Indonesia (HFI) and Universitas Muhammadiyah Palu (UNISMUH) with oversight from the Ministry of Social Affairs (Kemensos) and technical support from REACH, in 38 of 62 sub-districts in the four affected regencies of Central Sulawesi Province.

A sample of 99 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019. Results were weighted by population and generalizable to the crisis level with 95% confidence level and 10% margin of error.

### Demographics

#### Household composition by gender and age

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age Group</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>60+ years</td>
<td>4%</td>
</tr>
<tr>
<td>Male</td>
<td>18–59 years</td>
<td>29%</td>
</tr>
<tr>
<td>Female</td>
<td>18–59 years</td>
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<tr>
<td>Male</td>
<td>&lt;1 year</td>
<td>0%</td>
</tr>
<tr>
<td>Female</td>
<td>&lt;1 year</td>
<td>0%</td>
</tr>
</tbody>
</table>

There was an average of 5 individuals reported per household.

#### Head of Household

- 13% of heads of households were female
- 14% of heads of households were elderly
- Average age of the head of household in years: 48

#### Dependency ratio

- Average youth dependency ratio: 0.7
- Average elderly dependency ratio: 0.2
- Average age-dependency ratio: 0.9

#### % of households by current living location

- 66% Own home
- 4% Shelter next to original home
- 1% Renting (non-displaced)
- 0% Renting (displaced)
- 19% Staying in another home that is not their own
- 10% Informal settlement
- 0% Other

2. The boundaries and names used on this map do not imply official endorsement or acceptance by REACH, UNICEF, HFI, or UNISMUH. Population data was extracted at desa-level from SIAK (Population Information Administration System) database, Ministry of Home Affairs (Kemensos). Population of missing desas was imputed using data from the Indonesia Bureau of Statistics, 2010.
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4. Age-dependency ratio was calculated by dividing the number of under-age and elderly (non-productive) individuals (0–17 years for youth and 60+ years for elderly) by the number of adult (productive) individuals in the population (18–59 years). Anything below 1 shows that the population is mostly adults of working-age who can provide for those who are not.
5. Households were categorised based on whether they were still living on their original land, or if they were displaced by the disaster. Those living in their original home, renting (in the same location both before and after the disaster) or living in a tent/makeshift shelter next to their home are included in the “Own home” category. Those renting (not displaced) or staying in another home that is not their own are included in the “Shelter next to original home” category.
Displaced population:

33% of households were no longer living in their original house due to the disaster.

% of households no longer living on land they own by distance from their current living location to their original house:

- 38% Nearby/on site
- 31% Within 2km
- 14% Between 2km–5km
- 17% More than 5km or Don’t know

Non-displaced population:

16% of non-displaced households were hosting at least one displaced household in a house that they own.

There is an average of 4 IDP individuals in each displaced household hosted by a non-displaced household.

0.9 average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs.

Movement intentions in the next 6 months:

% of households by where they most want to move to within the next six months:

- 80% Remain in the current location
- 9% Return back to original home
- 6% Move into the Government Transitional Shelter

Top 3 most reported reasons as to why households chose to move or to stay in their preferred living location for the next 6 months:

1. House destroyed/severely damaged
2. Heavy damage to house
3. Fear that house is still unsafe

Disabilities, Elderly, Minorities:

1% of households contained at least one member with a self-reported physical or mental disability.

Child Protection:

3% of households contained at least one child that was separated from their usual caregiver.

Psychosocial Support:

79% of households reported having at least one member experiencing emotional distress from the disaster.

Shelter:

86% of households reported that their original shelter was either destroyed or damaged by the disaster.

% of households by type of shelter they are currently living in at the time of data collection:

- 84% House
- 1% Apartment
- 3% Transitional shelter (individual)
- 1% Makeshift Shelter
- 10% Tent
- 1% Don’t know
- 0% Other

Preferred Shelter Assistance:

74% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

6. Dependency ratio is calculated by dividing the number of IDP individuals being hosted by the total size of the host household. The number shows the relative burden that hosting households have to support IDP households.

7. Single-choice question; only the top three responses are shown.

8. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.

9. In many households in Central Sulawesi, there is a cultural practice in which one household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 preferred types of assistance that households wanted to receive in order to rebuild/repair their homes in the 6 months after data collection:10

1. Shelter building materials 76%
2. Assistance to build/repair shelter 68%
3. Construction labor 36%

Top 3 most needed Non-Food Items (NFIs):10

1. Cooking utensils/kitchen set; 73%
2. Mattresses/Sleeping mats 52%
3. Bedding items (bedsheets, pillows); 39%

Hygiene practices

% of households by location used for hand washing:

- Pouring device/sink faucet: 23%
- Basin/bucket: 63%
- No device: 14%
- Don’t know: 0%

93% of households have water available for hand washing
68% of households have soap available for hand washing

Sanitation conditions

% of households by most common defecation practice:

- Household latrine/toilet: 60%
- Communal latrine/toilet: 20%
- Open defecation: 17%
- Don’t know: 3%

There is an average of 9 households reported to be sharing each communal latrine11

Household and communal latrine conditions

- 80% of households with communal latrines reported their toilet had adequate lighting
- 5% of households with communal toilets reported that there are separate toilets for men and women
- 75% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:

- Piped water: 22%
- Public tap: 40%
- Protected well/spring: 15%
- Water tank/trucking: 8%
- Unprotected source: 15%
- Don’t know: 0%

95% of households reported drinking water that had been treated and was safe to drink
91% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing

% of households by reported amount of time it takes to walk to main water source, fetch water, and return (including queuing at the water source):

- Water source located on site: 66%
- Less than 10 minutes: 21%
- 10–20 minutes: 13%
- More than 20 minutes: 0%
- Don’t know: 0%

Economy

Occupation and employment

Main occupation of the household reported by households before the disaster and in the last month:12

Before Disaster | January 2019
--- | ---
Agricultural | 33% | Agricultural | 31%
Small business owner | 18% | Small business owner | 19%
Construction | 15% | Unemployed | 13%

10. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
11. Average taken from households reporting the use of communal latrines.
12. Single-choice question; only the top three responses are shown.
Among households where children were not attending school, there was an average of 1 child(ren) reported to not be attending school. Top 3 reported reasons why school-aged children were not attending school by households with children not attending school:

1. Other: 50%
2. School fees too expensive: 50%
3. Child needed to work for income: 0%

Condition of school facilities

% of households reported the condition of the nearby school to be the following:

- Good condition: 14%
- Lightly damaged: 16%
- Moderately damaged: 54%
- Severe damage: 13%
- Don’t know: 3%
- Other: 0%

There is an average reported loss of 20% of household income due to the disaster.

Food Security

Reported Food Consumption Score (FCS) and reduced Coping Strategy Index (rCSI)

Food Consumption Score: 92% Acceptable, 8% Borderline, 0% Poor

Average rCSI score: 4

% of households per main reported source of food in week prior to data collection:

- Purchased with own cash: 89%
- Purchased on credit (debt): 3%
- Gift from family or friends: 3%

Health

Immunization:

38% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and Injury:

56% of households reported that a member of the household had suffered from a health issue (illness or injury) in the 30 days prior to data collection.

Education

Student attendance:

3% of households with children reported having school-aged children who were not attending school following the disaster.

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13. Due to the sensitivity over asking about monthly income, respondents were asked what range their monthly income fell within. The upper bound of the range was used, and current income was divided by previous income before being averaged.
14. FCS is a measure of food security that looks at how often foods are consumed over a 1 week period, in order to give an indication if the household is eating a sufficient amount of food. FCS was calculated using the WFP CARI methodology, by asking respondents how many days per week their household consumed different groups of food, which are then multiplied by a coefficient based on the food group, added up, and ascribed a ranking (acceptable, borderline, or poor) based on the number (WFP, Consolidated Approach for Reporting Indicators of Food Security (CARI), 2014).
15. rCSI is a measure of food security that looks at a set list of five coping strategies that households might be using to make food last longer in the absence of sufficient foods. It uses 5 commonly practiced coping strategies across the world. rCSI was calculated by asking respondents how many days per week their household adopted different coping strategies to make food last longer. The number of days was then multiplied by a coefficient based on the coping strategies and added up. There are no officially established thresholds, but generally, scores between 0 and 3 are considered to be good, 4 to 9 is worrisome, and scores greater than or equal to 10 are concerning (WFP VAM Unit, Afghanistan, Guidance note: calculation of household food security outcome indicators, December 2012).
16. Single-choice question; only the top three responses are shown.
17. Respondents could select multiple responses; only the top three choices are shown.
Top 3 types of health concerns reported by households with a member who had suffered from health issues in the 30 days prior to data collection: 18

1. Coughing 51%
2. Fever 47%
3. Diarrheal diseases 26%

Main barriers to accessing healthcare reported by households who had needed to access medical treatment the 30 days prior to data collection: 19

- No issues 93%
- Cost of medicine/treatment too high 6%
- Don’t know 2%

Main reasons (if any) that households have had to access health services in the 30 days prior to data collection: 20

1. Get regular medications 44%
2. Treat health problems 41%
3. None 34%

1.2.3 Priority Needs

Top 3 most important priority needs as reported by households: 20

1. Food 88%
2. Kitchen ware 54%
3. Other NFI’s 44%

% of households by most preferred source from which they would like to receive new information: 19

- Face-to-face communication (e.g. from friends) 81%
- Television 12%
- Telephone/mobile phone (Voice Call) 4%

Humanitarian assistance

46% of households reported that they had received humanitarian aid in the 30 days prior to data collection

Top 3 most common types of aid that households reported having received: 18

1. Food 89%
2. Health 24%
3. Water 9%

% of households by most common reported source of aid: 18

- NGO distribution 51%
- Private Company 20%
- Government distribution 20%

64% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

Information Needs

% of households by the type of information that the household reported needing the most: 19

- Humanitarian assistance 52%
- Status of housing 21%
- Livelihoods 14%