INDONESIA

Central Sulawesi
Earthquake, Tsunami,
and Liquefaction:
Population Needs

Multi-Sector Needs Assessment:
Population/Regency/City Profiles

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 4264 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 99% confidence level and 2% margin of error.

Demographics

Household composition by gender and age

- 3% 60+ years
- 29% 18–59 years
- 7% 13–17 years
- 7% 6–12 years
- 4% 1–5 years
- 1% <1 year

Female

Male

Head of Household

- 11% 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

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

% of households by current living location

- 71% Own home
- 5% Shelter next to original home
- 3% Renting (non-displaced)
- 2% Renting (displaced)
- 10% Staying in another home that is not their own
- 9% 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
### Displacement and Protection

#### Displaced population
- 26% of households were no longer living in their original house due to the disaster.

#### Non-displaced population
- 6% of non-displaced households were hosting at least one displaced household in a house that they own.

#### Movement intentions in the next 6 months
- 87% want to remain in the current location.
- 4% want to move into the Government Transitional Shelter.
- 3% want to return back to their original home.

#### Protection of Women’s Needs
- 16% 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
- 3% 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**
  - 79% House
  - 5% Apartment
  - 3% Transitional shelter (individual)
  - 4% Makeshift Shelter
  - 9% Tent
  - 0% Don’t know
  - 0% Other

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

### Population: All Affected Areas/Populations
- 26% of households no longer living on land they own by distance from their current living location to their original house:
  - 50% Nearby/on site
  - 24% Within 2km
  - 10% Between 2km–5km
  - 16% More than 5km or Don’t know

- 2% of households were at risk of being forced to leave where they were staying at the time of data collection.

- 26% of households were no longer living in their original house due to the disaster.

### Notes
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 a specific household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 reported reasons households were at risk of being forced to leave their shelters at the time of data collection:¹⁰

1. Request from authorities 56%
2. Request from owner of land 52%
3. Local community does not accept them 11%

6% of households reported having lost the ownership documents for their original shelter before the disaster.

Preferred Shelter Assistance

68% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

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:¹¹

1. Assistance to build/repair shelter 55%
2. Shelter building materials 45%
3. None 18%

Top 3 most needed Non-Food Items (NFIs):¹¹

1. Cooking utensils/kitchen set; 59%
2. Bedding items (bedsheets, pillows); 49%
3. Mattresses/Sleeping mats 36%

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

87% 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):

- 80% Water source located on site
- 12% Less than 10 minutes
- 5% 10–20 minutes
- 3% More than 20 minutes
- 0% Don’t know

Hygiene practices

% of households by location used for hand washing:

- 59% Pouring device/sink faucet
- 32% Basin/bucket
- 9% No device
- 0% Don’t know

92% of households have water available for hand washing.

64% of households have soap available for hand washing.

Sanitation conditions

% of households by most common defecation practice:

- 71% Household latrine/toilet
- 18% Communal latrine/toilet
- 9% Open defecation
- 2% Don’t know

% of households using a household or communal latrine/toilet, by type of latrine/toilet:

- 100% Flush toilet¹²
- 0% Other

¹⁰ Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
¹¹ Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
¹² “Flush toilets” includes both toilets where a lever automatically makes the toilet flush and the practice of dumping water town the toilet to cause it to flush manually.
There is an average of 13 households reported to be sharing each communal latrine. Of households with communal latrines reported their toilet had adequate lighting. Of households with communal toilets reported that there are separate toilets for men and women. Of households with communal toilets reported their toilet is not inside the household and has locks on the doors.

### Communal latrine conditions

- 82% 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.
- 76% of households with communal toilets reported their toilet is not inside the household and has locks on the doors.

### Waste disposal

- 13% of households by reported main method of garbage disposal bin in household / street.
- 1% Bury garbage.
- 49% Burn garbage.
- 24% Open area designated for waste.
- 12% Open area not designated for waste.
- 1% Other.

### Economic

#### Occupation and employment

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

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>32% Agricultural</td>
<td>30% Agricultural</td>
</tr>
<tr>
<td>18% Small business owner</td>
<td>17% Small business owner</td>
</tr>
<tr>
<td>8% Government job</td>
<td>10% Unemployed</td>
</tr>
</tbody>
</table>

13. Average taken from households reporting the use of communal latrines.
14. Single-choice question; only the top three responses are shown.
15. 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.
16. 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).
17. 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).
% of households per main reported source of food in week prior to data collection: 18

- Purchased with own cash: 91%
- Food assistance (government): 2%
- Food assistance (charity, private company): 2%

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: 19

1. School damaged/destroyed
2. Fear of school collapsing
3. Child not attending school before disaster

Condition of school facilities

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

- Good condition: 20%
- Lightly damaged: 25%
- Moderately damaged: 29%
- Severe damage: 14%
- Don’t know: 10%
- Other: 2%

Health

Immunization

18% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

Illness and injury

40% 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.

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: 19

1. Fever: 53%
2. Coughing: 50%
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: 78%
- Cost of medicine/treatment too high: 9%
- Don’t know: 3%

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

1. None: 41%
2. Get regular medications: 39%
3. Treat health problems: 35%

Priority Needs

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

1. Food: 78%
2. Kitchen ware: 37%
3. Shelter support: 30%

Communication with Communities

Information Needs

% of households by the type of information that the household reported needing the most: 18

- Humanitarian assistance: 32%
- Livelihoods: 22%
- Status of housing: 22%

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18. Single-choice question; only the top three responses are shown.
19. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
20. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
% of households by most preferred source from which they would like to receive new information:

- Face-to-face communication (e.g. from friends): 69%
- Television: 21%
- Social media: 6%

Humanitarian assistance

30% 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:

1. Food: 91%
2. Water: 17%
3. Tents: 17%

% of households by most common reported source of aid:

- Government distribution: 48%
- NGO distribution: 21%
- Friends and family: 8%

69% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection.

Main reported reasons households were not satisfied by the aid received in the last 30 days:

- Quantity not enough: 86%
- Aid received is not useful: 4%
- Other: 4%

21. Single-choice question; only the top three responses are shown.
22. Respondents could select multiple responses; only the top three choices are shown.
23. Single-choice question; only the top three responses 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 1213 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 5% margin of error.

Demographics

Household composition by gender and age

- 4% females 60+ years
- 27% females 18–59 years
- 7% females 13–17 years
- 8% females 6–12 years
- 5% females 1–5 years
- 1% females <1 year
- 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

There was an average of 5 individuals reported per household.

Head of Household

- 14% of heads of households were female
- 17% of heads of households were elderly
- 47 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:

- 65% Own home
- 10% Shelter next to original home
- 1% Renting (non-displaced)
- 1% Renting (displaced)
- 13% Staying in another home that is not their own
- 10% Informal settlement
- 0% Other

Respondent metadata

- 1213 Total households interviewed
- 44 Average age of respondent in years
- 58% 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.
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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 populations
34% 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:
- 51% Nearby/on site
- 30% Within 2km
- 8% Between 2km–5km
- 11% More than 5km or Don’t know

Non-displaced populations
6% of non-displaced households were hosting at least one displaced household to stay in a house that they own

Movement intentions in the next 6 months
% of households by where they most want to move to within the next six months:
- 87% Remain in the current location
- 5% Move into the Government Transitional Shelter
- 5% 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 66%
2. Heavy damage to house 35%
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
2% of households contained at least one child that was separated from their usual caregiver

Psychosocial Support
62% 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:
- 76% House
- 3% Apartment
- 3% Transitional shelter (individual)
- 5% Makeshift Shelter
- 13% Tent
- 0% Don’t know
- 0% Other

Displacement and Protection
5% 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:
- 51% Nearby/on site
- 30% Within 2km
- 8% Between 2km–5km
- 11% More than 5km or Don’t know

Non-displaced population
6% of non-displaced households were hosting at least one displaced household to stay in a house that they own

Movement intentions in the next 6 months
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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 66%
2. Heavy damage to house 35%
3. Mild damage to house 18%

Protection of Women’s Needs
19% 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 reported reasons households were at risk of being forced to leave their shelters at the time of data collection:¹⁰

1. Request from authorities 64%
2. Request from owner of land 42%
3. No money to pay rent 3%

5% of households reported having lost the ownership documents for their original shelter before the disaster.

Preferred Shelter Assistance

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

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:¹¹

1. Assistance to build/repair shelter 66%
2. Shelter building materials 54%
3. Construction labor 13%

Top 3 most needed Non-Food Items (NFIs):¹¹

1. Cooking utensils/kitchen set; 66%
2. Bedding items (bedsheets, pillows); 62%
3. Mattresses/Sleeping mats 48%

Water, Sanitation and Hygiene

Access to Water

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

27% Piped water
29% Public tap
11% Protected well/spring
2% Water tank/trucking
11% Bottled water
15% Unprotected source
5% Don't know

94% of households reported drinking water that had been treated and was safe to drink.

80% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing.

Hygiene practices

% of households by location used for hand washing:

51% Pouring device/sink faucet
39% Basin/bucket
10% No device
0% Don’t know

90% of households have water available for hand washing.

58% of households have soap available for hand washing.

Sanitation conditions

% of households by most common defecation practice:

54% Household latrine/toilet
21% Communal latrine/toilet
23% Open defecation
2% Don’t know

% of households using a household or communal latrine/toilet, by type of latrine/toilet:

99% Flush toilet¹²
1% Other

¹⁰ Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
¹¹ Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
¹² “Flush toilets” includes both toilets where a lever automatically makes the toilet flush and the practice of dumping water town the toilet to cause it to flush manually.
There is an average of 13 households reported to be sharing each communal latrine.  

**Communal latrine conditions**  
- 75% 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  
- 77% of households with communal toilets reported their toilet is not inside the household and has locks on the doors  

**Waste disposal**  
% of households by reported main method of garbage disposal:  
- 2% Bin in household / street  
- 1% Bury garbage  
- 59% Burn garbage  
- 14% Open area designated for waste  
- 24% Open area not designated for waste  
- 0% Other  

% of households reporting how often garbage is collected from their area of residence:  
- 36% Daily  
- 25% Weekly  
- 2% More than 1x per week  
- 36% Service not available  
- 1% Don’t know  
- 0% Other  

% of households reporting that the household main income was unemployment, before and after the disaster:  
- Before Disaster January 2019  
  - 4% are unemployed  
- January 2019  
  - 12%  

16% 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 (46%)  
- Increased competition for jobs (11%)  
- Only dangerous or low-paid jobs are available (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)  

% FCS & average rCSI score:  
- 86% Acceptable  
- 12% Borderline  
- 2% Poor  

Food Consumption Score 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).  

Coping Strategy Index 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).  

**Economy**  

Main occupation of the household reported by households before the disaster and in the last month:  
- Before Disaster January 2019  
  - 43% Agricultural  
  - 12% Fishing  
  - 11% Small business owner  
- January 2019  
  - 1 Agricultural  
  - 2 Unemployed  
  - 3 Small business owner  

13. Average taken from households reporting the use of communal latrines  
14. Single-choice question; only the top three responses are shown.  
15. 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.  
16. 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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% of households per main reported source of food in week prior to data collection:18

- Purchased with own cash: 90%
- Food assistance (charity, private company): 2%
- Own production (hunting, fishing, farming): 2%

## 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:19

1. School fees too expensive: 29%
2. Fear of school collapsing: 20%
3. Other: 17%

### Condition of school facilities

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

- Good condition: 20%
- Lightly damaged: 24%
- Moderately damaged: 32%
- Severe damage: 12%
- Don’t know: 10%
- Other: 2%

## Health

### Immunization

17% 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.

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:19

1. Fever: 56%
2. Coughing: 54%
3. Diarrheal diseases: 29%

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: 14%
- Health center too far away: 4%

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

1. None: 40%
2. Treat health problems: 38%
3. Get regular medications: 35%

### Priority Needs

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

1. Food: 87%
2. Kitchen ware: 40%
3. Shelter support: 38%

## Communication with Communities

### Information Needs

% of households by the type of information that the household reported needing the most:18

- Humanitarian assistance: 44%
- Status of housing: 29%
- Livelihoods: 14%

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19. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
20. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
% of households by most preferred source from which they would like to receive new information:\(^{21}\)

- Face-to-face communication (e.g. from friends): 72%
- Television: 21%
- Social media: 3%

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:\(^{22}\)

1. Food: 85%
2. Tents: 22%
3. Cash: 16%

% of households by most common reported source of aid:\(^{23}\)

- Government distribution: 40%
- NGO distribution: 30%
- Religious Organization: 10%

54% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection.

Main reported reasons households were not satisfied by the aid received in the last 30 days:\(^{23}\)

- Quantity not enough: 94%
- Delays in aid delivery: 4%
- Aid received is not useful: 1%

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\(^{21}\) Single-choice question; only the top three responses are shown.

\(^{22}\) Respondents could select multiple responses; only the top three choices are shown.

\(^{23}\) Single-choice question; only the top three responses 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 892 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 5% margin of error.

Demographics

Household composition by gender and age

- 3% 60+ years
- 30% 18–59 years
- 7% 13–17 years
- 7% 6–12 years
- 4% 1–5 years
- 1% <1 year

Male
- 3% 60+ years
- 30% 18–59 years
- 7% 13–17 years
- 7% 6–12 years
- 4% 1–5 years
- 1% <1 year

Female
- 3% 60+ years
- 30% 18–59 years
- 7% 13–17 years
- 7% 6–12 years
- 4% 1–5 years
- 1% <1 year

There was an average of 5 individuals reported per household

Head of Household

- 14% of heads of households were female
- 13% of heads of households were elderly
- 46 average age of the head of household in years

Dependency ratio

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

% of households by current living location:

- 66% Own home
- 3% Shelter next to original home
- 6% Renting (non-displaced)
- 5% Renting (displaced)
- 10% 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 (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

28% 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:
- 37% Nearby/on site
- 24% Within 2km
- 14% Between 2km–5km
- 25% More than 5km or Don’t know

Non-displaced population

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

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

0.6 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:
- 84% Remain in the current location
- 4% Don’t know
- 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 (50%)
2. Heavy damage to house (31%)
3. Fear that land is still unsafe (22%)

Disabilities, Elderly, Minorities

4% 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

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

Protection of Women’s Needs

16% 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.

Shelter

% of households by type of shelter they are currently living in at the time of data collection:
- 76% House
- 11% Apartment
- 2% Transitional shelter (individual)
- 3% Makeshift Shelter
- 8% Tent
- 0% Don’t know
- 0% Other

68% 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:
- 21% Household owns the land
- 9% Written agreement (still valid)
- 1% Written agreement (expired)
- 68% Verbal/no agreement
- 1% Don’t know

4% of households reported that they were at risk of being forced to leave where they were staying at the time of data collection.

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 a specific household owns many plots of land, and other households are permitted to live on it without any formal agreement.
Top 3 reported reasons households were at risk of being forced to leave their shelters at the time of data collection:¹⁰

1. Request from owner of land 61%
2. Request from authorities 56%
3. Local community does not accept them 18%

9% of households reported having lost the ownership documents for their original shelter before the disaster.

Preferred Shelter Assistance:

65% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

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:¹¹

1. Assistance to build/repair shelter 54%
2. Shelter building materials 37%
3. None 18%

Top 3 most needed Non-Food Items (NFIs):¹¹

1. Cooking utensils/kitchen set; 55%
2. Bedding items (bedsheets, pillows); 44%
3. Mattresses/Sleeping mats 27%

Water, Sanitation and Hygiene:

Access to Water:

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

- 18% Piped water
- 27% Public tap
- 10% Protected well/spring
- 5% Water tank/trucking
- 40% Bottled water
- 0% Unprotected source
- 0% Don’t know

94% of households reported drinking water that had been treated and was safe to drink.

87% of households reported having enough water to meet their total needs for drinking, cooking, bathing, and washing.

Hygiene practices:

% 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):

- 84% Water source located on site
- 10% Less than 10 minutes
- 4% 10–20 minutes
- 1% More than 20 minutes
- 1% Don’t know

92% of households have water available for hand washing.

69% of households have soap available for hand washing.

Sanitation conditions:

% of households by most common defecation practice:

- 81% Household latrine/toilet
- 16% Communal latrine/toilet
- 2% Open defecation
- 1% Don’t know

% of households using a household or communal latrine/toilet, by type of latrine/toilet:

- 100% Flush toilet¹²
- 0% Other

10. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
11. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
12. “Flush toilets” includes both toilets where a lever automatically makes the toilet flush and the practice of dumping water town the toilet to cause it to flush manually.
There is an average of 16 households reported to be sharing each communal latrine.

### Communal latrine conditions
- 83% of households with communal latrines reported their toilet had adequate lighting.
- 7% 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.

### Waste disposal
- % of households by reported main method of garbage disposal:
  - 24% Bin in household / street
  - 2% Bury garbage
  - 32% Burn garbage
  - 32% Open area designated for waste
  - 8% Open area not designated for waste
  - 2% Other

### Economy
#### Occupation and employment
Main occupation of the household reported by households before the disaster and in the last month:
- Before Disaster
  - 30% Small business owner
  - 13% Service industry
  - 13% Government job

#### % of households reporting that the household main income was unemployment, before and after the disaster:
- Before Disaster
  - 5% are unemployed
- January 2019
  - 11% are unemployed

- 28% 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 (57%)
- Increased competition for jobs (11%)
- Available jobs are too far away (8%)

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
  - Average rCSI score
  - FCS: 94% Acceptable
  - rCSI: 3.8

13. Average taken from households reporting the use of communal latrines.
14. Single-choice question; only the top three responses are shown.
15. 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.
16. 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).
17. 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).
% of households per main reported source of food in week prior to data collection: 18

- Purchased with own cash: 91%
- Food assistance (government): 3%
- Gift from family or friends: 2%

### Education

#### Student attendance

6% 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: 19

1. School damaged/destroyed: 51%
2. Fear of school collapsing: 20%
3. Child not attending school before disaster: 11%

#### Condition of school facilities

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

- Good condition: 17%
- Lightly damaged: 24%
- Moderately damaged: 28%
- Severe damage: 13%
- Don’t know: 13%
- Other: 5%

### Health

#### Immunization

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

#### Illness and injury

36% 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.

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: 19

1. Coughing: 49%
2. Fever: 49%
3. Diarrheal diseases: 28%

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%
- Don’t know: 6%
- Cost of medicine/treatment too high: 5%

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

1. None: 45%
2. Get regular medications: 36%
3. Treat health problems: 29%

### Priority Needs

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

1. Food: 76%
2. Kitchen ware: 36%
3. Water: 27%

### Communication with Communities

#### Information Needs

% of households by the type of information that the household reported needing the most: 18

- Humanitarian assistance: 31%
- Status of housing: 24%
- Livelihoods: 19%

---

18. Single-choice question; only the top three responses are shown.
19. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
20. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
### % of households by most preferred source from which they would like to receive new information:

<table>
<thead>
<tr>
<th>Source</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face communication (e.g., from friends)</td>
<td>64%</td>
</tr>
<tr>
<td>Television</td>
<td>20%</td>
</tr>
<tr>
<td>Social media</td>
<td>9%</td>
</tr>
</tbody>
</table>

### Humanitarian assistance

28% 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:

1. Food 94%
2. Water 22%
3. Tents 17%

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

<table>
<thead>
<tr>
<th>Source</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government distribution</td>
<td>59%</td>
</tr>
<tr>
<td>Friends and family</td>
<td>12%</td>
</tr>
<tr>
<td>NGO distribution</td>
<td>12%</td>
</tr>
</tbody>
</table>

72% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection.

### Main reported reasons households were not satisfied by the aid received in the last 30 days:

- Quantity not enough 80%
- Aid received is not useful 5%
- Other 5%

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21. Single-choice question; only the top three responses are shown.
22. Respondents could select multiple responses; only the top three choices are shown.
23. Single-choice question; only the top three responses 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.¹ 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 572 out of a total population of 253,926 households were surveyed across the four affected regencies between 22 January and 6 February 2019.² Results were weighted by population and generalizable to the crisis level with 95% confidence level and 5% margin of error.

Demographics

Household composition by gender and age

- Male 2% 60+ years 3%
- Male 29% 18–59 years 29%
- Male 9% 13–17 years 7%
- Male 8% 6–12 years 6%
- Male 3% 1–5 years 2%
- Male 1% <1 year 0%
- Female 29% 18–59 years 29%
- Female 9% 13–17 years 7%
- Female 8% 6–12 years 6%
- Female 3% 1–5 years 2%
- Female 1% <1 year 0%

There was an average of 4 individuals reported per household

Head of Household

- 5% of heads of households were female
- 8% of heads of households were elderly
- 44 average age of the head of household in years

Dependency ratio

- 0.7 average youth dependency ratio
- 0.1 average elderly dependency ratio
- 0.8 average age-dependency ratio

% of households by current living location

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.
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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 were considered as ‘own home’. Those living in shelter next to original home, renting (non-displaced) or other were considered as ‘shelter next to original home’. Those living in a temporary home were considered as ‘staying in another home that is not their own’. Those living in informal settlements were considered as ‘informal settlement’.
Displaced population
6% 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
2% of non-displaced households were hosting at least one displaced household to stay 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

1.4

Movement intentions in the next 6 months
% of households by where they most want to move to within the next six months:

- 100% Remain in the current location
- 0% Move to a new location
- 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. NA
2. NA
3. NA

Protection of Women’s Needs
9% 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.

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
28% 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:

- 98% House
- 2% Apartment
- 0% Transitional shelter (individual)
- 0% Makeshift Shelter
- 0% Tent
- 0% Don’t know
- 0% Other

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

- 33% Household owns the land
- 52% Written agreement (still valid)
- 0% Written agreement (expired)
- 15% Verbal/no agreement
- 0% Don’t know

Displacement and Protection
6% 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
2% of non-displaced households were hosting at least one displaced household to stay 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

1.4

Movement intentions in the next 6 months
% of households by where they most want to move to within the next six months:

- 100% Remain in the current location
- 0% Move to a new location
- 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. NA
2. NA
3. NA

Protection of Women’s Needs
9% 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 reported reasons households were at risk of being forced to leave their shelters at the time of data collection:  
1. NA 0%  
2. NA 0%  
3. NA 0%  

1% of households reported having lost the ownership documents for their original shelter before the disaster.

Preferred Shelter Assistance

31% of households reported that they would prefer to rebuild or repair their original home in the next 6 months.

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. None 56%  
2. Shelter building materials 30%  
3. Assistance to build/repair shelter 17%  

Top 3 most needed Non-Food Items (NFIs):  
1. Cooking fuel 35%  
2. Cooking utensils/kitchen set; 35%  
3. Mattresses/Sleeping mats 32%  

Water, Sanitation and Hygiene

Access to Water

% of households acquired most of their drinking water from the following sources:  
- Piped water: 49%  
- Public tap: 35%  
- Protected well/spring: 7%  
- Water tank/trucking: 0%  
- Bottled water: 4%  
- Unprotected source: 5%  
- Don’t know: 0%  

95% of households reported drinking water that had been treated and was safe to drink.  
96% 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: 92%  
- Less than 10 minutes: 6%  
- 10–20 minutes: 2%  
- More than 20 minutes: 0%  
- Don’t know: 0%  

Hygiene practices

% of households by location used for hand washing:  
- Pouring device/sink faucet: 73%  
- Basin/bucket: 24%  
- No device: 3%  
- Don’t know: 0%  

97% of households have water available for hand washing  
52% of households have soap available for hand washing.

Sanitation conditions

% of households by most common defecation practice:  
- Household latrine/toilet: 88%  
- Communal latrine/toilet: 8%  
- Open defecation: 4%  
- Don’t know: 0%  

% of households using a household or communal latrine/toilet, by type of latrine/toilet:  
- Flush toilet: 100%  
- Other: 0%  

10. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.  
11. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.  
12. “Flush toilets” includes both toilets where a lever automatically makes the toilet flush and the practice of dumping water town the toilet to cause it to flush manually.
There is an average of 7 households reported to be sharing each communal latrine^13

**Communal latrine conditions**
- 94% 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
- 78% of households with communal toilets reported their toilet is not inside the household and has locks on the doors

**Waste disposal**

%-of-households-reported-main-method-of-garbage-disposal

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Method of Garbage Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>12%</td>
<td>Bin in household / street</td>
</tr>
<tr>
<td>4%</td>
<td>Bury garbage</td>
</tr>
<tr>
<td>65%</td>
<td>Burn garbage</td>
</tr>
<tr>
<td>18%</td>
<td>Open area designated for waste</td>
</tr>
<tr>
<td>1%</td>
<td>Open area not designated for waste</td>
</tr>
<tr>
<td>0%</td>
<td>Other</td>
</tr>
</tbody>
</table>

%-of-households-reporting-how-often-garbage-is-collected-from-their-area-of-residence

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>24%</td>
</tr>
<tr>
<td>Weekly</td>
<td>31%</td>
</tr>
<tr>
<td>More than 1x per week</td>
<td>1%</td>
</tr>
<tr>
<td>Service not available</td>
<td>44%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Occupation and employment**

Main occupation of the household reported by households before the disaster and in the last month:^14

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>50%</td>
</tr>
<tr>
<td>Small business owner</td>
<td>18%</td>
</tr>
<tr>
<td>Government job</td>
<td>9%</td>
</tr>
<tr>
<td>Agricultural</td>
<td>50%</td>
</tr>
<tr>
<td>Small business owner</td>
<td>18%</td>
</tr>
<tr>
<td>Government job</td>
<td>9%</td>
</tr>
</tbody>
</table>

% 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>1% are unemployed</td>
<td>1%</td>
</tr>
<tr>
<td>10% of households had at least one working-age household member that is not working</td>
<td></td>
</tr>
</tbody>
</table>

Main reported barriers to finding work:^14

<table>
<thead>
<tr>
<th>Barriers to Finding Work</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster destroyed cultivation land for planting</td>
<td>42%</td>
</tr>
<tr>
<td>Underqualified for available jobs</td>
<td>31%</td>
</tr>
<tr>
<td>Available jobs are too far away</td>
<td>13%</td>
</tr>
</tbody>
</table>

There is an average reported loss of 0% of household income due to the disaster^15

**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>94%</td>
<td>Acceptable</td>
</tr>
<tr>
<td>6%</td>
<td>Borderline</td>
</tr>
<tr>
<td>0%</td>
<td>Poor</td>
</tr>
</tbody>
</table>

13. Average taken from households reporting the use of communal latrines.
14. Single-choice question; only the top three responses are shown.
15. 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.
16. 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).
17. 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).
% of households per main reported source of food in week prior to data collection: 18

- Purchased with own cash: 99%
- Purchased with cash assistance: 1%
- Don’t know: 0%

Education

Student attendance

- 2% 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: 19

1. School damaged/destroyed: 36%
2. Child not attending school before disaster: 28%
3. Fear of school collapsing: 24%

Condition of school facilities

54% reported the condition of the nearby school to be good, 18% lightly damaged, 19% moderately damaged, 3% severe damage, 6% don’t know, and 0% other.

Health

Immunization

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

Illness and injury

- 22% 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.

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: 19

1. Coughing: 45%
2. Fever: 44%
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: 19

- No issues: 80%
- Cost of medicine/treatment too high: 12%
- 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. Treat health problems: 56%
2. Get regular medications: 48%
3. None: 28%

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

1. Food: 52%
2. Medical care: 32%
3. Water: 31%

Communication with Communities

Information Needs

% of households by the type of information that the household reported needing the most: 18

- Livelihoods: 30%
- Healthcare: 25%
- Humanitarian assistance: 20%

18. Single-choice question; only the top three responses are shown.
19. Respondents could select multiple responses, therefore results may exceed 100%; only the top three choices are shown.
20. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
% of households by most preferred source from which they would like to receive new information:21

- Face-to-face communication (e.g. from friends): 58%
- Television: 40%
- Social media: 2%

Humanitarian assistance

2% 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:22

1. Food: 93%
2. Education: 18%
3. Health: 12%

% of households by most common reported source of aid:23

- Government distribution: 42%
- PMI (Indonesian Red Cross): 27%
- NGO distribution: 13%

57% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection.

Main reported reasons households were not satisfied by the aid received in the last 30 days:23

- Quantity not enough: 100%
- Poor quality: 0%
- Delays in aid delivery: 0%

21. Single-choice question; only the top three responses are shown.
22. Respondents could select multiple responses; only the top three choices are shown.
23. Single-choice question; only the top three responses 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 1587 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 5% margin of error.

Demographics

Household composition by gender and age

- 4% 60+ years
- 28% 18–59 years
- 7% 13–17 years
- 7% 6–12 years
- 4% 1–5 years
- 1% <1 year

There was an average of 4 individuals reported per household

Head of Household

- 7% of heads of households were female
- 13% of heads of households were elderly
- 46 average age of the head of household in years

Dependency ratio

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

% of households by current living location:

- 75% Own home
- 6% Shelter next to original home
- 1% Renting (non-displaced)
- 1% Renting (displaced)
- 7% 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 (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

24% 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:

- 51% Nearby/on site
- 26% Within 2km
- 9% Between 2km–5km
- 14% More than 5km or Don’t know

Non-displaced population

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

There is an average of 3 IDP individuals in each displaced household hosted by a non-displaced household. The average dependency ratio of displaced household size to hosting household size for non-displaced households hosting IDPs is 0.7

Movement intentions in the next 6 months

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

- 88% Remain in the current location
- 6% Move into the Government Transitional Shelter
- 3% 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
2. Heavy damage to house
3. Fear that house is still unsafe

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:

- 42% Household owns the land
- 6% Written agreement (still valid)
- 3% Written agreement (expired)
- 48% Verbal/no agreement
- 1% Don’t know

Protection of Women’s Needs

15% 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.

Disabilities, Elderly, Minorities

3% 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

53% 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:

- 82% House
- 1% Apartment
- 5% Transitional shelter (individual)
- 4% Makeshift Shelter
- 8% 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:

- 42% Household owns the land
- 6% Written agreement (still valid)
- 3% Written agreement (expired)
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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 reported reasons households were at risk of being forced to leave their shelters at the time of data collection:¹⁰

1. Other 46%
2. Request from owner of land 34%
3. Request from authorities 31%

6% of households reported having lost the ownership documents for their original shelter before the disaster.

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

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:¹¹

1. Assistance to build/repair shelter 60%
2. Shelter building materials 54%
3. None 14%

Top 3 most needed Non-Food Items (NFIs):¹¹

1. Cooking utensils/kitchen set; 67%
2. Bedding items (bedsheets, pillows); 53%
3. Mattresses/Sleeping mats 42%

Water, Sanitation and Hygiene

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

- Piped water 38%
- Public tap 21%
- Protected well/spring 20%
- Water tank/trucking 3%
- Bottled water 10%
- Unprotected source 7%
- Don’t know 1%

96% of households reported drinking water that had been treated and was safe to drink.

89% 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 78%
- Less than 10 minutes 16%
- 10–20 minutes 4%
- More than 20 minutes 2%
- Don’t know 0%

Hygiene practices
% of households by location used for hand washing:

- Pouring device/sink faucet 50%
- Basin/bucket 37%
- No device 13%
- Don’t know 0%

94% 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:

- Household latrine/toilet 66%
- Communal latrine/toilet 22%
- Open defecation 10%
- Don’t know 2%

% of households using a household or communal latrine/toilet, by type of latrine/toilet:

99% Flush toilet¹²
1% Other

10. Respondents could select multiple responses; therefore results may exceed 100%; only the top three choices are shown.
11. Respondents could select up to three responses; therefore results may exceed 100%; only the top three choices are shown.
12. “Flush toilets” includes both toilets where a lever automatically makes the toilet flush and the practice of dumping water down the toilet to cause it to flush manually.
% 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% unemployed</td>
<td>10%</td>
</tr>
</tbody>
</table>

Main reported barriers to finding work:

- The recent disaster destroyed previous business/job opportunities: 26%
- Disaster destroyed cultivation land for planting: 23%
- Underqualified for available jobs: 20%

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>86%</td>
<td>Acceptable</td>
</tr>
<tr>
<td>14%</td>
<td>Borderline</td>
</tr>
<tr>
<td>0%</td>
<td>Poor</td>
</tr>
</tbody>
</table>

### Economy

**Occupation and employment**

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

<table>
<thead>
<tr>
<th>Before Disaster</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>58% Agricultural</td>
<td>52%</td>
</tr>
<tr>
<td>7% Construction</td>
<td>10%</td>
</tr>
<tr>
<td>6% Small business owner</td>
<td>7%</td>
</tr>
</tbody>
</table>

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

- Purchased with own cash: 88%
- Own production (hunting, fishing, farming): 5%
- Food assistance (government): 2%

### Education

#### Student attendance

3% 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:19

1. Fear of school collapsing: 33%
2. Other: 20%
3. Child needed for household chores: 15%

#### Condition of school facilities

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

- Good condition: 13%
- Lightly damaged: 31%
- Moderately damaged: 29%
- Severe damage: 20%
- Don’t know: 7%
- Other: 0%

### Health

#### Immunization

14% of households reported having children in the household that were not immunized for measles, mumps, and rubella (MMR).

#### Illness and injury

41% 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.

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:19

1. Fever: 60%
2. Coughing: 51%
3. Diarrheal diseases: 19%

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: 85%
- Cost of medicine/treatment too high: 7%
- No information where health facilities are: 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: 42%
2. None: 40%
3. Treat health problems: 34%

### Priority Needs

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

1. Food: 83%
2. Kitchen ware: 44%
3. Shelter support: 35%

### Communication with Communities

#### Information Needs

% of households by the type of information that the household reported needing the most:18

- Livelihoods: 30%
- Humanitarian assistance: 29%
- Status of housing: 18%
% of households by most preferred source from which they would like to receive new information: 21

<table>
<thead>
<tr>
<th>Source</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face communication (e.g. from friends)</td>
<td>76%</td>
</tr>
<tr>
<td>Television</td>
<td>16%</td>
</tr>
<tr>
<td>Social media</td>
<td>4%</td>
</tr>
</tbody>
</table>

Humanitarian assistance

38% 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: 22

1. Food                              | 91%        |
2. Water                             | 21%        |
3. Tents                             | 14%        |

% of households by most common reported source of aid: 23

<table>
<thead>
<tr>
<th>Source</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government distribution</td>
<td>40%</td>
</tr>
<tr>
<td>NGO distribution</td>
<td>30%</td>
</tr>
<tr>
<td>Private Company</td>
<td>10%</td>
</tr>
</tbody>
</table>

77% of households reported that they were happy with the aid that they had received in the 30 days prior to data collection

Main reported reasons households were not satisfied by the aid received in the last 30 days: 23

1. Quantity not enough | 87%        |
2. Aid received is not useful | 5%        |
3. Other               | 5%         |

---

21. Single-choice question; only the top three responses are shown.
22. Respondents could select multiple responses; only the top three choices are shown.
23. Single-choice question; only the top three responses are shown.