

Rapid Joint Damage Assessment – Preliminary Results

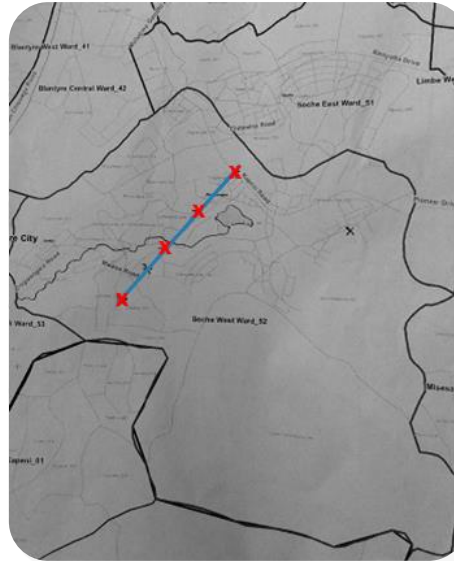
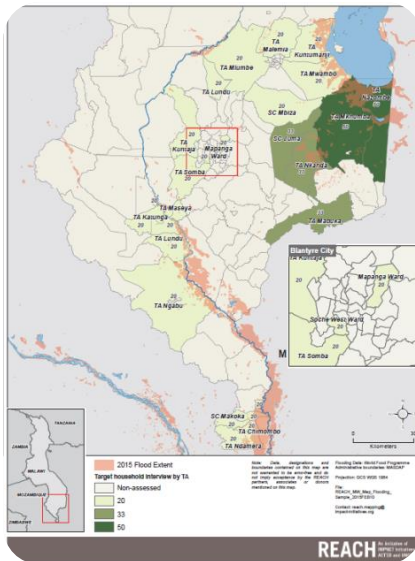
March 2, 2015



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Methodology



- Prioritized Districts based on flood impact & population
- Random Sampling (affected & non-affected areas in TA's)
- Questionnaire produced by Shelter, WASH, and Agriculture clusters
- Data collection via Smartphones



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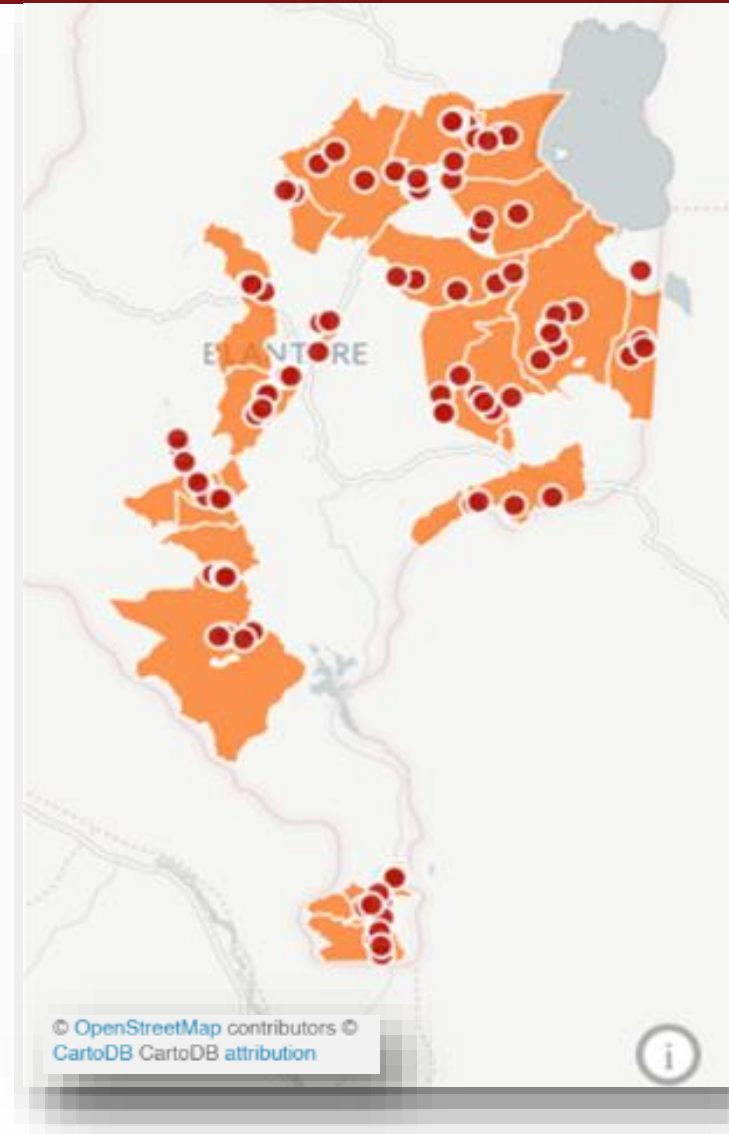
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Assessment Coverage

- 925 HH visited
- 7 prioritized districts
- 33 TAs (25 used in analysis)
- Supplemented with 112 community surveys
- 6 days, 20 enumerators, 4 team leads, 2 project managers, 2 IM

IMPORTANT NOTE:

- HH assessment collected data from HH who are dwelling in a house. By design there is bias towards non-displaced households.
- IOM's DTM assessment to complement this assessment and provide details on those displaced in camps. Initial results expected week of March 2nd.



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Analysis

Key Strategic Questions:

- Was there damage and where?
- How many are affected?
- What is the extent of damage?
- Where are those affected staying?
- What assistance are needed?

Notes:

- Does not include those displaced in camps. This information will come from IOM's DTM.
- Raw data provided to WASH and Agriculture clusters for their sector specific analysis.
- Following slides provide a summary for All Districts assessed. Data for specific districts are available in the Appendix.



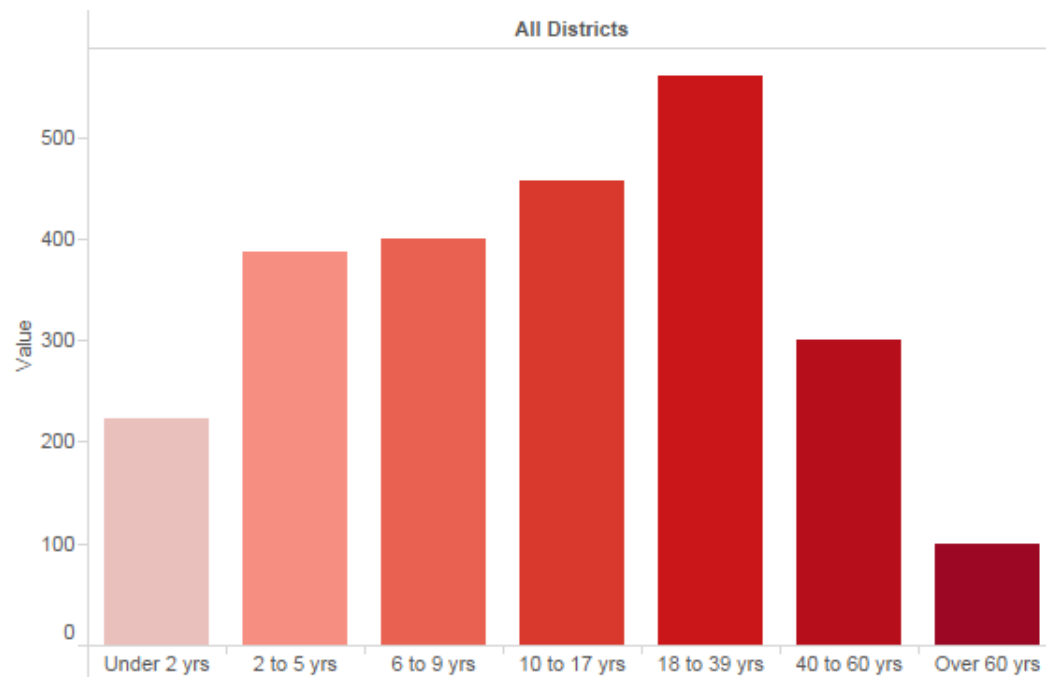
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Household Composition

- High # of HH having family members in 18-39 years old age group
- Average HH size 5.1

Number of Households that indicated family members in the following age groups:



District	Average Household Size
All Districts	5.1
Blantyre	5.0
Blantyre City	5.4
Chikwawa	5.1
Mulanje	4.9
Nsanje	5.7
Phalombe	5.2
Zomba	4.7



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Pre-existing Vulnerabilities

HH with family members that are:



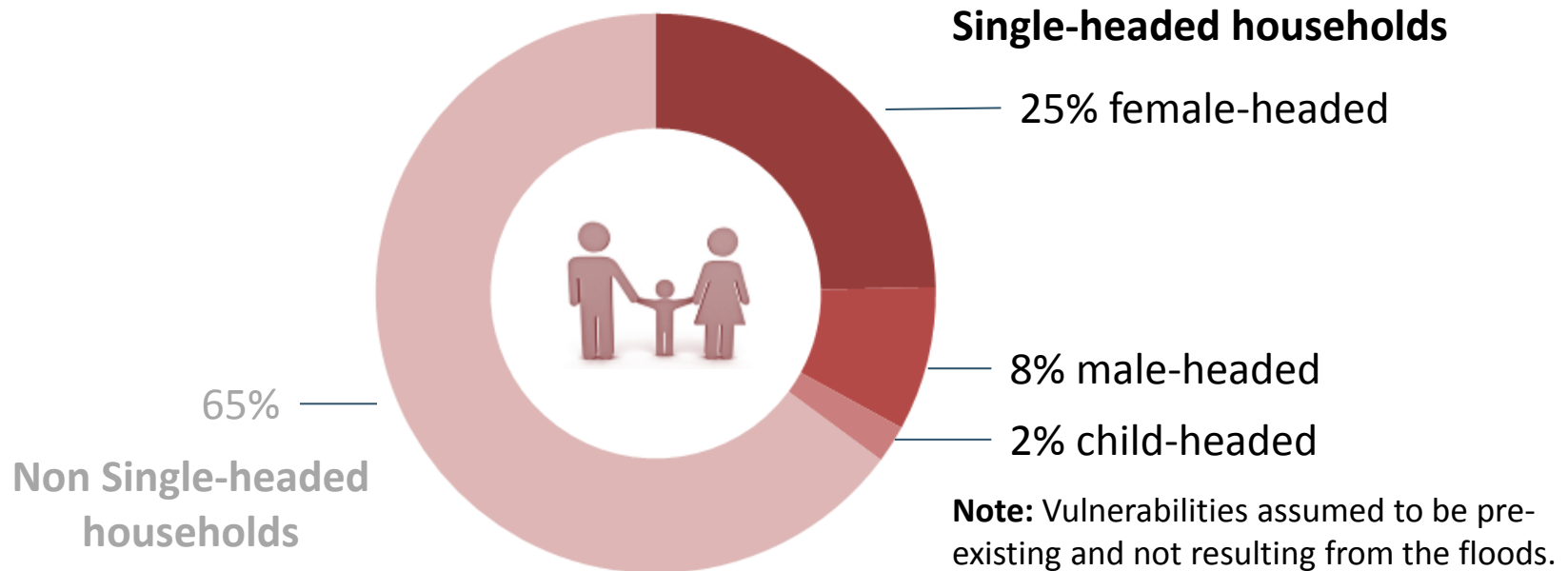
Pregnant – 5.7%

Lactating – 27.7%



Physically disabled – 13.9%

Chronically ill – 21.5%



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Displaced vs. Non-Displaced

- 81% HH living on same property as before the floods

Living on same property as before the floods?

Yes

No

Plan to remain in this property?

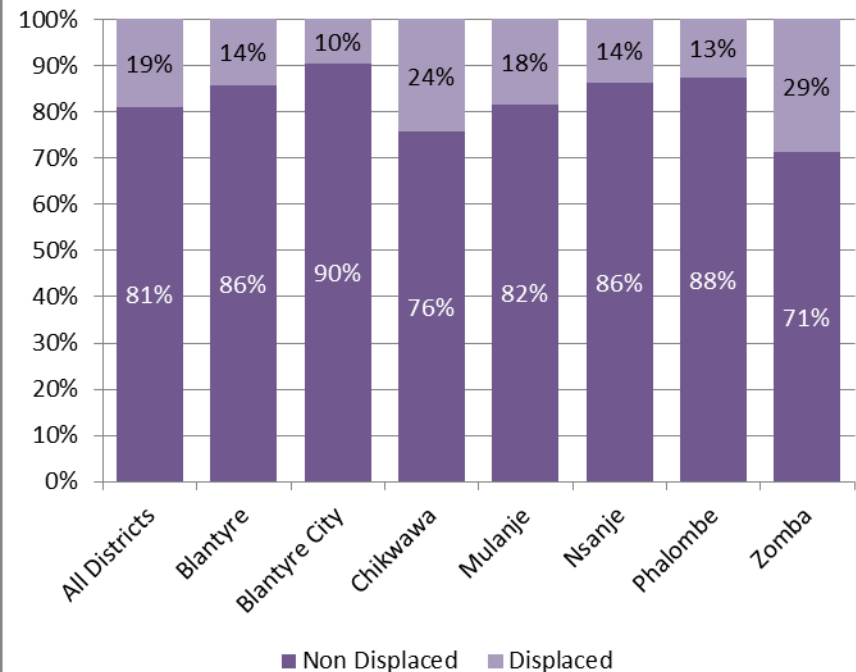
Have somewhere to move to?

Are you a returnee to this property?

Where are you currently living?

Do you intend to go back to original property?

% HH living on same place vs. somewhere else



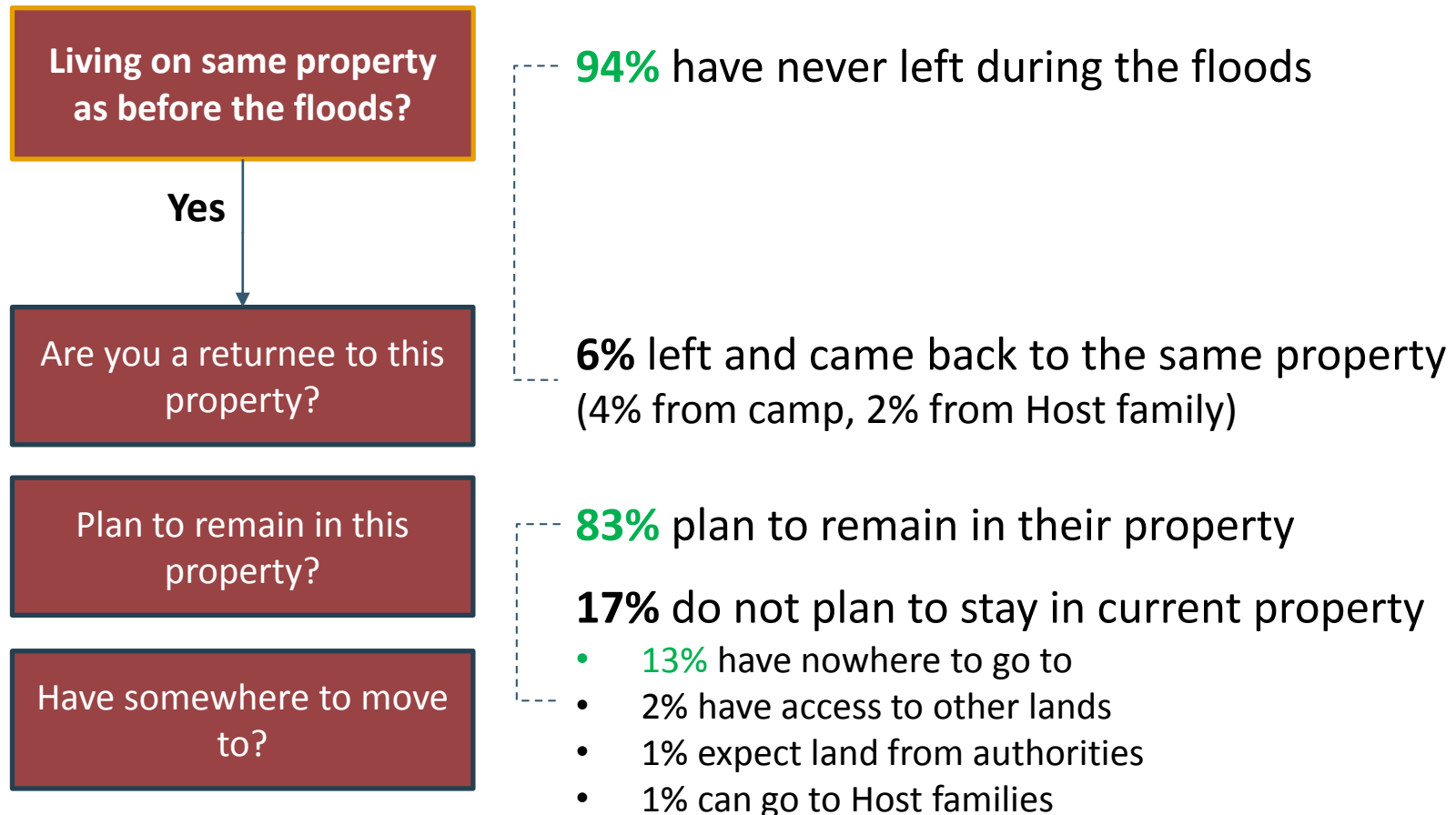
Note: Non-displaced refers to HH that stayed on same property.
Displaced refers to HH that moved to another place.



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Of the 81% HH living in the same property...



Of the 19% HH that left their original property...

Living on same property
as before the floods?

No

Where are you currently
living?

37% are staying with Host family/friends
(17% makeshift shelter, 16% on new property, 16% rental, 14% other)

Do you intend to go back
to original property?

65% intend to return to their original property,
Of which **55%** plan to return after rainy season

What keeps you from
returning?

Of those that do not plan to return, **88%** indicated
damage to shelter impedes their return

District	Damage To Their Shelter	Concern Over Safety	Lack Of Livelihood	Lack Of Education Services	Lack Of Food Resources	Lack Of Health Services	Logistical Challenges	Water And Sanitation
All Districts	87.9%	16.6%	20.4%	0.6%	5.1%	1.9%	2.5%	3.8%



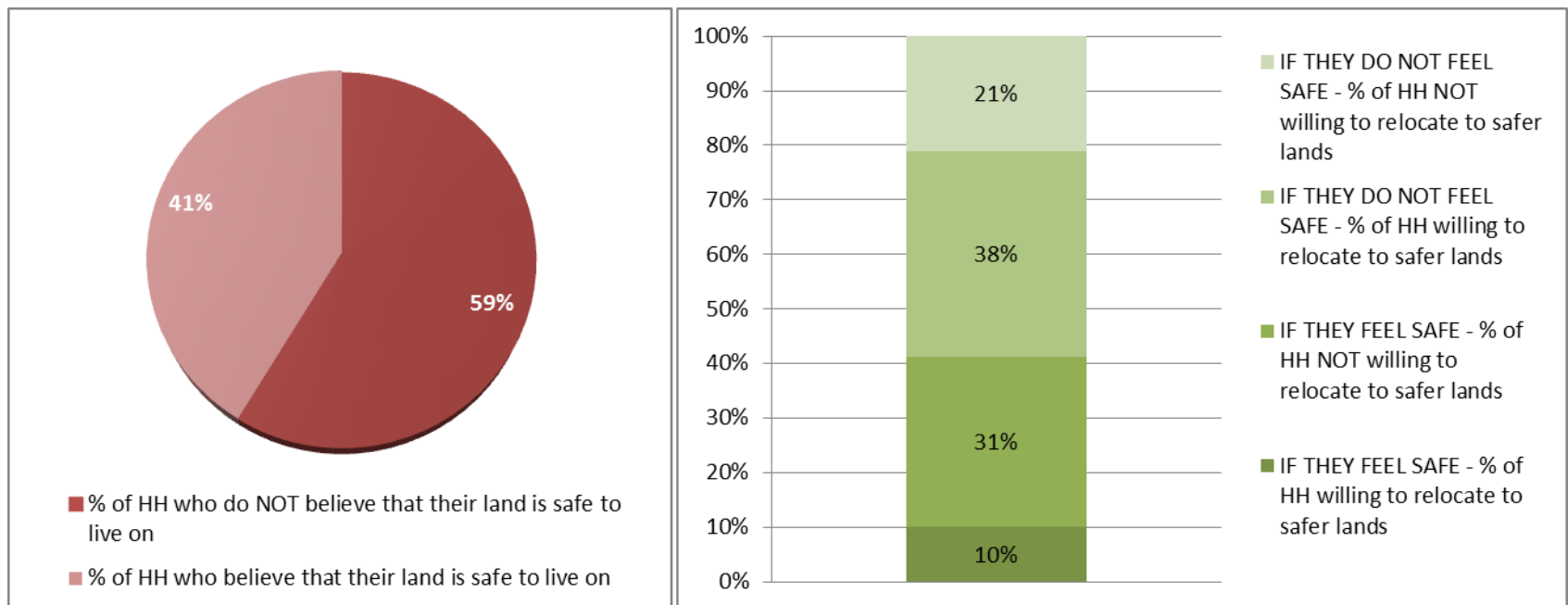
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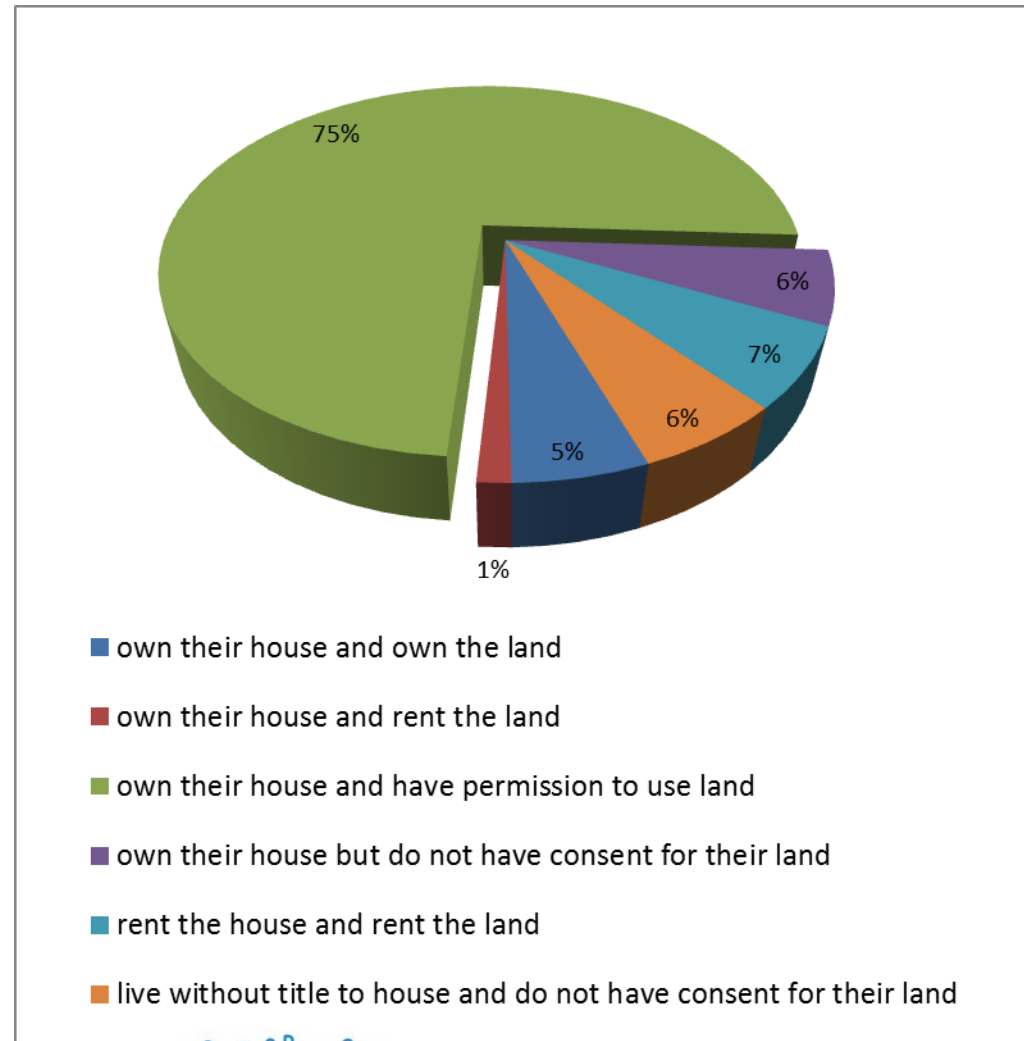
Do HH want to be relocated to a safer place?

- **59%** feel unsafe to live in their current place
- **38%** feel unsafe and willing to relocate to safer place
- Those who feel safe tend not to be willing to relocate



Housing Land & Property Rights

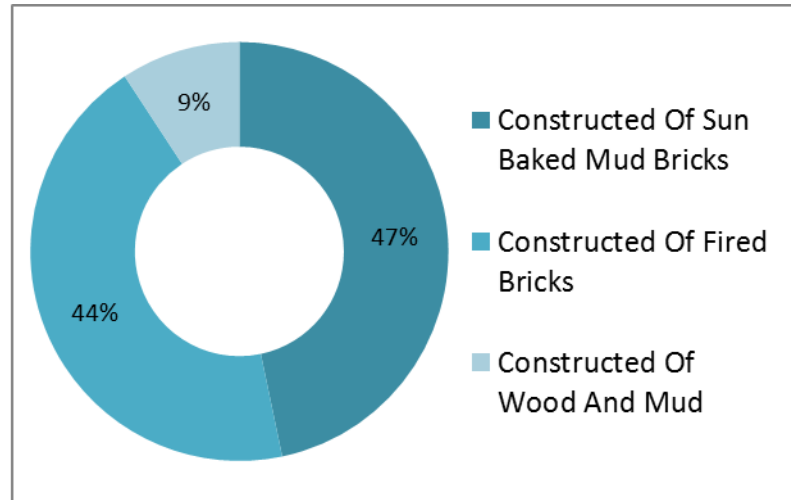
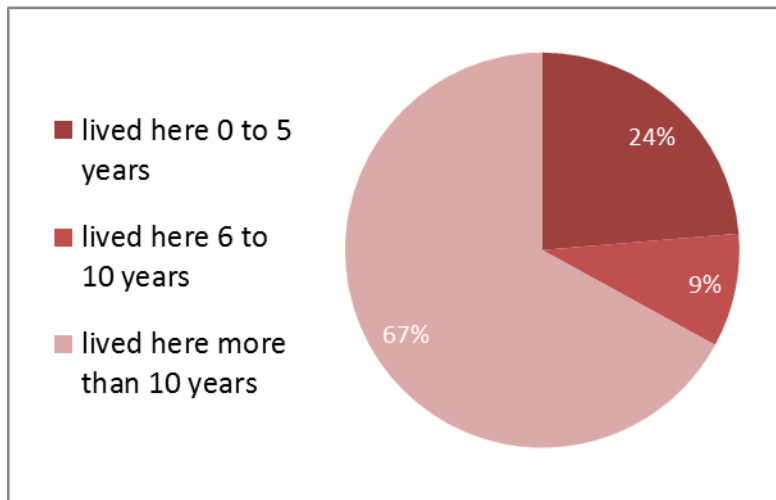
- Most HH own their house and have permission to use the land.
- There are HH living in their land without consent.



Basic Housing Info



- **67%** lived in property for 10+ years
- Commonly used construction materials:
 - Sun baked mud bricks (**47%**)
 - Fired bricks (**44%**)
 - Wood & mud (9%)



Assessing the Level of Damage

- Inputs from three sources were used to triangulate the damage to houses and extent of damage.



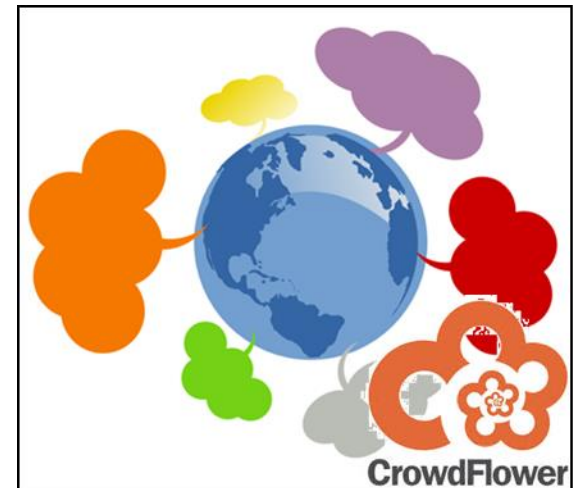
Household Survey

- HH were asked, “Is your house damaged?”
- “Need rebuild or repair?”
- “Major or minor repair?”



Community Survey

- Village Heads were asked, “% of houses with no damage?”
- “% houses that need rebuild”
- “% houses that need repair”



Crowdsourcing

- Experts (e.g. architects, builders, engineers) were asked to classify the **photos** taken of damaged houses. Were asked to classify if house: has to be rebuilt, can be repaired, or has no visible damage.






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Level of Damage

- % HH with damaged houses consistent between HH & Community Assessments
- HH indicated high % of houses that need complete rebuild; community survey & photos review indicated more repairs necessary and lesser rebuild.

	 Household Survey	 Community Survey	 Photo Classification (Crowdsourcing)
% HH with damaged houses	61%	60%	N/A (only asked to view photos where HH indicated damage)
% HH need complete rebuild	79%	59%	42%
% HH need repairs only	21%	41%	59%
- % HH need major repairs	7%	N/A (did not ask this question)	30%
- % HH need minor repairs	14%	N/A (did not ask this question)	29%



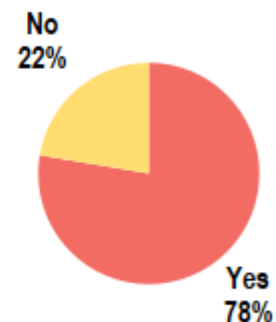
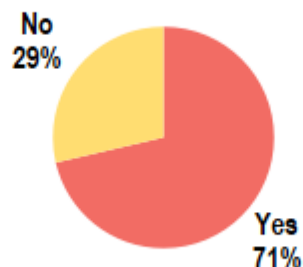
Damage by Material Type

Fired Brick

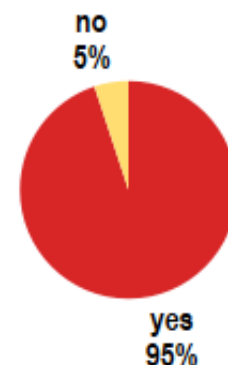
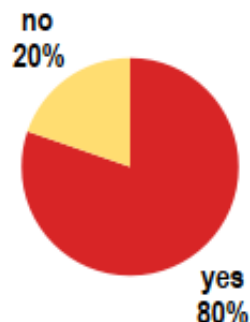
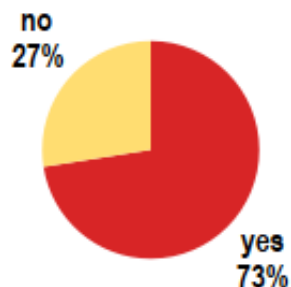
Sun dried mud brick

Wood & mud

Is your house damaged?



Do you need to rebuild to make it liveable?

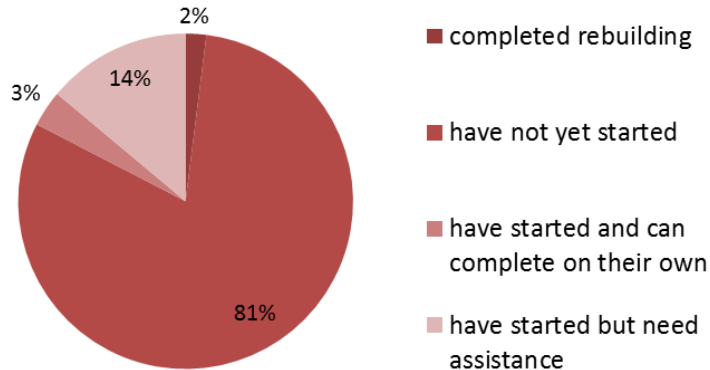


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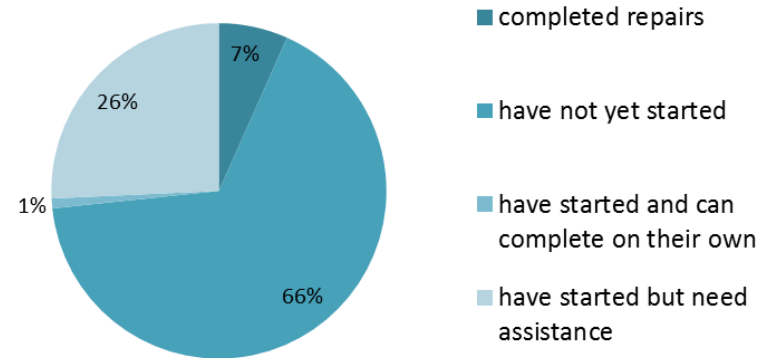


Assistance Required

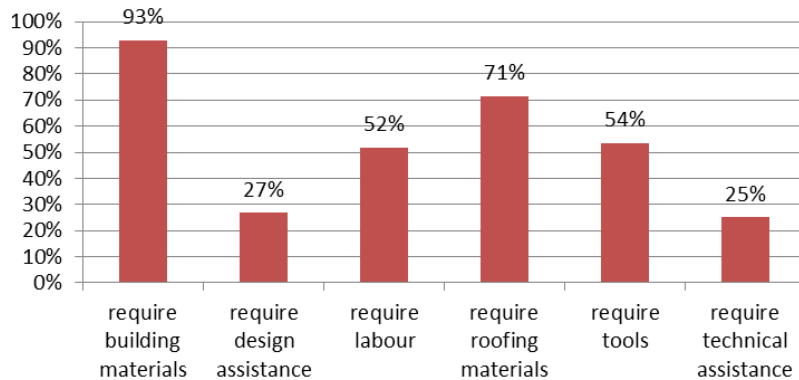
% HH started rebuilding



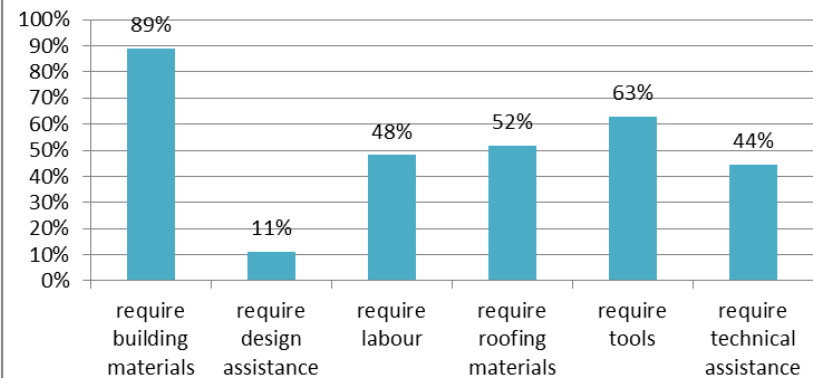
% HH started repairs



% HH indicated need for following assistance for Rebuilding



% HH indicated need for following assistance for Repairs



Estimated HH in need of Shelter Assistance

- Given that the HH and Community assessments gave similar % HH with damage, the range of affected HH population could be calculate as follows:

District	% Damage	Population (HH)	Affected (Min)	Affected (Max)
Blantyre	53%	61,463	25,876	39,521
Blantyre City	50%	120,263	43,776	76,487
Chikwawa	52%	79,799	34,952	48,199
Mulanje	80%	95,533	70,121	82,922
Nsanje	26%	43,289	8,095	14,762
Phalombe	82%	56,950	42,884	50,515
Zomba	71%	106,030	67,647	82,068
		Total:	293,350	394,473

*population from 2008: <http://www.malawihighcommission.co.uk/MWCensus08.pdf>

** 95% confidence interval

- Shelter Assistance to provide will be based on needs for rebuilding and repairs.



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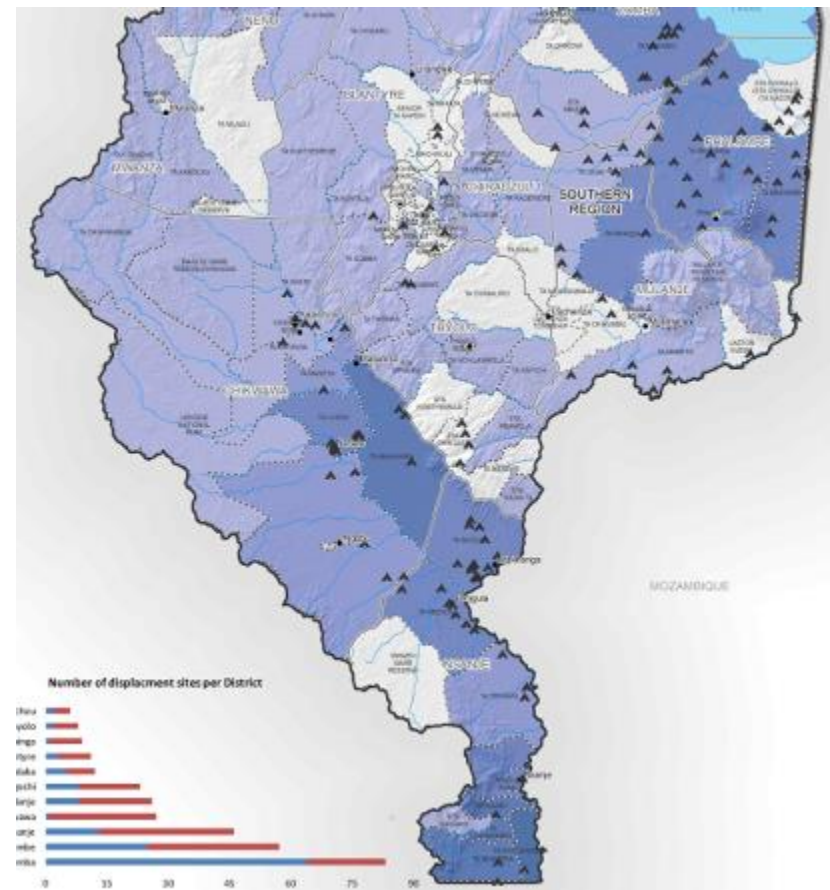
Factors Contributing to Damage

Wind & Rain



<http://www.humanitarianresponse.info/operations/malawi/infographic/malawi-estimated-rainfall-accumulation-07-14-january-2015>

Flood



<http://www.mapaction.org/component/mapcat/mapdetail/3715.html>

Next Steps

- Complete Estimation of HH per District for Rebuild vs. Repair of Shelter.
- Review outcomes of IOM's DTM exercise and analyse with the outcomes of this rapid joint damage assessment.
- Update the Preliminary Response Plan (PRP) based on affected HH numbers and assistance required for both displaced and non-displaced HH.



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Questions / Comments

FOR FURTHER INFORMATION
PLEASE CONTACT:

im.malawi@sheltercluster.org



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APPENDIX



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Reference for Sampling

■ TA's sampled:

Blantyre

Kuntaja TA
Lundu TA
Mapanga Ward
Soche West Ward
Somba TA

Chikwawa

Chikwawa Boma
Katunga TA
Lundu TA
Maseya TA
Ngabu TA

Mulanje

Juma TA
Mabuka TA
Nkanda TA

Nsanje

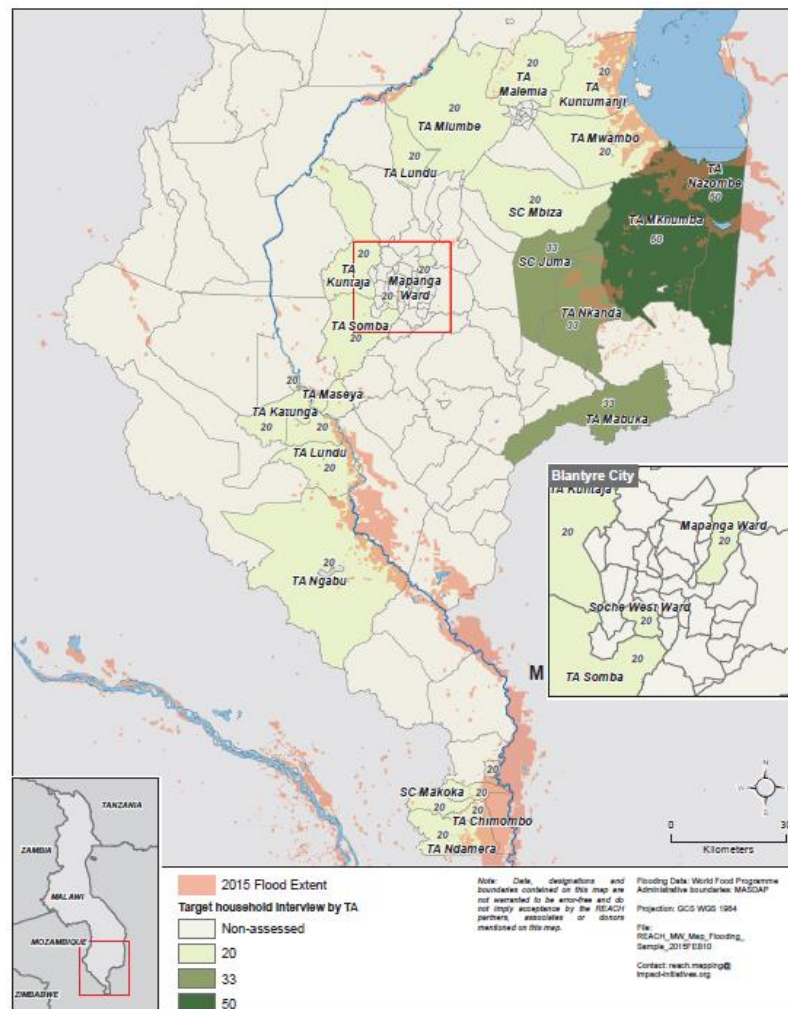
Chimombo TA
Makoko STA
Ndamera TA
Ngabu TA
Nsanje Boma

Phalombe

Mkhumba TA
Nazombe TA

Zomba

Kuntumanji
Malemia
Mbiza
Mlumbe
Mwambo



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REACH An initiative of
IMPACT Initiatives
ACTED and UNHCR

Household Composition

Number of HH reporting family members belonging to the following age groups:

	Under 2 yrs	2 to 5 yrs	6 to 9 yrs	10 to 17 yrs	18 to 39 yrs	40 to 60 yrs	Over 60 yrs
All Districts	223	388	400	458	560	300	99
Blantyre	24	28	37	42	58	35	8
Blantyre City	16	22	29	30	43	14	1
Chikwawa	39	61	54	65	102	53	14
Mulanje	37	68	68	77	80	46	24
Nsanje	39	65	45	55	81	54	13
Phalombe	37	74	86	78	81	46	19
Zomba	31	70	81	111	115	52	20



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Pre-existing Vulnerabilities

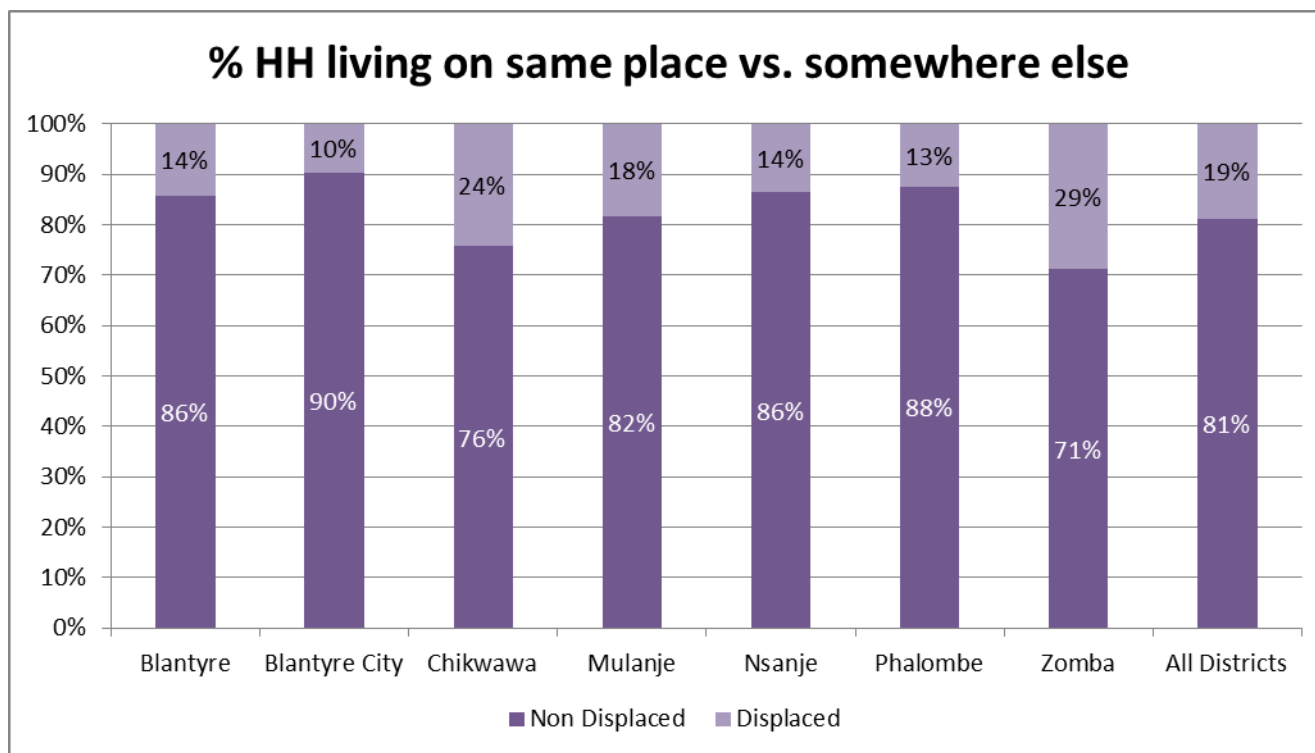
District	% of reported Single-headed Households	% of Single-Female-Headed Households	% of Child-Headed Households	% of HH with pregnant family member	% of HH with lactating family member	% of HH with a Physically Disabled Famil..	% of HH with a chronically ill family member	% of HH with a separated child as a family me..
All Districts	35.1%	25.4%	2.2%	5.7%	27.7%	13.9%	21.5%	17.5%
Blantyre	44.2%	31.2%	2.6%	5.2%	24.7%	19.5%	24.7%	13.0%
Blantyre City	28.8%	13.5%	0.0%	9.6%	23.1%	19.2%	7.7%	19.2%
Chikwawa	30.0%	20.7%	2.9%	6.4%	33.6%	16.4%	15.0%	17.1%
Mulanje	32.4%	25.0%	1.5%	4.4%	25.7%	13.2%	11.0%	11.8%
Nsanje	36.0%	21.6%	2.4%	7.2%	29.6%	15.2%	33.6%	17.6%
Phalombe	39.1%	29.7%	2.3%	7.8%	27.3%	12.5%	21.9%	19.5%
Zomba	35.9%	30.0%	2.4%	2.4%	25.9%	8.2%	28.8%	22.4%



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Displaced vs. Non-Displaced



Note: This does not include people who have been displaced in camps. IOM's DTM will have this information.



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Non-Displaced

District	% of HH that are living on the same property as before the floods	% of HH who are on the same property who never left during the floods	% of HH who are on the same property that plan to remain	% of HH who are on the same property that have no place to move to	% of HH who are on the same property but have access to other lands	% of HH who are on the same property but are expecting lands from the authorities	% of HH who are on the same property but could go to Host Family	% of HH who are now on their original property had returned from being in a camp	% of HH who are now on their original property had returned from being in a host family
All Districts	81.0%	93.9%	83.0%	12.8%	2.2%	1.2%	0.7%	3.7%	2.4%
Blantyre	85.7%	97.0%	87.9%	9.1%	3.0%	0.0%	0.0%	0.0%	3.0%
Blantyre City	90.4%	100.0%	76.6%	19.1%	4.3%	0.0%	0.0%	0.0%	0.0%
Chikwawa	75.7%	93.4%	75.5%	17.9%	2.8%	2.8%	0.9%	3.8%	2.8%
Mulanje	81.6%	98.2%	94.6%	3.6%	0.9%	0.9%	0.0%	1.8%	0.0%
Nsanje	86.4%	94.4%	82.4%	11.1%	2.8%	1.9%	1.9%	1.9%	3.7%
Phalombe	87.5%	88.4%	81.3%	17.9%	0.9%	0.0%	0.0%	10.7%	0.9%
Zomba	71.2%	90.9%	81.0%	13.2%	2.5%	1.7%	1.7%	4.1%	5.0%



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Displaced

Where are you living now?

District	Communal building	Host Family	Makeshift Shelter	New property	No shelter, outside	Rental	Tent	Other
All Districts	4.46%	36.94%	16.56%	15.92%	0.64%	15.92%	7.64%	1.91%
Blantyre	0.00%	63.64%	0.00%	18.18%	0.00%	9.09%	0.00%	9.09%
Blantyre City	0.00%	40.00%	0.00%	20.00%	0.00%	40.00%	0.00%	0.00%
Chikwawa	0.00%	23.53%	5.88%	26.47%	0.00%	17.65%	23.53%	2.94%
Mulanje	8.00%	40.00%	20.00%	24.00%	0.00%	4.00%	4.00%	0.00%
Nsanje	5.88%	23.53%	0.00%	11.76%	0.00%	58.82%	0.00%	0.00%
Phalombe	12.50%	43.75%	12.50%	18.75%	0.00%	0.00%	12.50%	0.00%
Zomba	4.08%	40.82%	34.69%	4.08%	2.04%	10.20%	2.04%	2.04%

When do you expect to return?

District	% intend to return to their original property	% return before rainy season ends	% return after rainy season	% likely take more than 6 months to return	% likely take more than a year to return
All Districts	65.0%	1.3%	54.8%	2.5%	6.4%
Blantyre	63.6%	0.0%	63.6%	0.0%	0.0%
Blantyre City	20.0%	0.0%	0.0%	0.0%	20.0%
Chikwawa	55.9%	2.9%	41.2%	0.0%	11.8%
Mulanje	80.0%	4.0%	64.0%	12.0%	0.0%
Nsanje	29.4%	0.0%	23.5%	0.0%	5.9%
Phalombe	75.0%	0.0%	50.0%	6.3%	18.8%
Zomba	77.1%	0.0%	75.5%	0.0%	2.0%



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Displaced cont.

Impediments for Return

District	Damage To Their Shelter	Concern Over Safety	Lack Of Livelihood	Lack Of Education Services	Lack Of Food Resources	Lack Of Health Services	Logistical Challenges	Water And Sanitation
All Districts	87.9%	16.6%	20.4%	0.6%	5.1%	1.9%	2.5%	3.8%
Blantyre	100.0%	27.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blantyre City	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	20.0%	0.0%
Chikwawa	85.3%	11.8%	11.8%	0.0%	5.9%	2.9%	2.9%	8.8%
Mulanje	96.0%	12.0%	24.0%	0.0%	8.0%	0.0%	0.0%	4.0%
Nsanje	94.1%	35.3%	11.8%	5.9%	5.9%	11.8%	5.9%	5.9%
Phalombe	100.0%	0.0%	43.8%	0.0%	6.3%	0.0%	0.0%	6.3%
Zomba	77.6%	20.4%	24.5%	0.0%	4.1%	0.0%	2.0%	0.0%



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Safety & Relocation

District	% of HH who believe that their land is safe to live on	IF THEY FEEL SAFE - % of HH willing to relocate to safer lands	IF THEY FEEL SAFE - % of HH NOT willing to relocate to safer lands	IF THEY DO NOT FEEL SAFE - % of HH willing to relocate to safer lands	IF THEY DO NOT FEEL SAFE - % of HH NOT willing to relocate to safer lands
All Districts	41.3%	10.0%	31.3%	37.7%	21.0%
Blantyre	57.1%	13.0%	44.2%	26.0%	16.9%
Blantyre City	40.4%	5.8%	34.6%	53.8%	5.8%
Chikwawa	49.3%	12.9%	36.4%	37.1%	13.6%
Mulanje	41.2%	4.4%	36.8%	27.9%	30.9%
Nsanje	54.4%	10.4%	44.0%	36.0%	9.6%
Phalombe	13.3%	3.9%	9.4%	56.3%	30.5%
Zomba	39.4%	16.5%	22.9%	33.5%	27.1%

District	% of HH who believe that their land is safe to live on	% of HH who do NOT believe that their land is safe to live on
All Districts	41.3%	58.7%
Blantyre	57.1%	42.9%
Blantyre City	40.4%	59.6%
Chikwawa	49.3%	50.7%
Mulanje	41.2%	58.8%
Nsanje	54.4%	45.6%
Phalombe	13.3%	86.7%
Zomba	39.4%	60.6%



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Housing Land Property Rights

District	own their house and own the land	own their house and rent the land	own their house and have permission to use land	own their house but do not have consent for their land	rent the house and rent the land	live without title to house and do not have consent for their land
All Districts	5.3%	1.3%	74.8%	6.2%	6.5%	5.9%
Blantyre	0.0%	7.8%	67.5%	2.6%	6.5%	15.6%
Blantyre City	15.4%	5.8%	23.1%	3.8%	42.3%	9.6%
Chikwawa	0.0%	0.0%	92.1%	2.1%	2.1%	3.6%
Mulanje	10.3%	0.7%	80.1%	8.8%	0.0%	0.0%
Nsanje	0.0%	0.0%	65.6%	3.2%	11.2%	20.0%
Phalombe	13.3%	0.8%	72.7%	12.5%	0.8%	0.0%
Zomba	2.9%	0.0%	83.5%	7.1%	5.3%	1.2%



Basic Housing Info

How long have you lived in your house?

What material is used to build your house?

District	lived here 0 to 5 years	lived here 6 to 10 years	lived here more than 10 years	Have a second home	Constructed Of Concrete	Constructed Of Grass	Constructed Of Sun Baked Mud Bricks	Constructed Of Wood And Mud	Constructed Of Fired Bricks
All Districts	23.7%	9.3%	67.0%	11.5%	0.5%	0.2%	46.4%	9.2%	43.7%
Blantyre	14.3%	10.4%	75.3%	11.7%	0.0%	0.0%	27.3%	11.7%	61.0%
Blantyre City	76.9%	7.7%	15.4%	19.2%	1.9%	0.0%	42.3%	7.7%	48.1%
Chikwawa	26.4%	7.9%	65.7%	15.7%	0.7%	0.0%	49.3%	0.7%	49.3%
Mulanje	5.9%	8.8%	85.3%	7.4%	0.0%	0.0%	62.5%	5.9%	31.6%
Nsanje	29.6%	8.8%	61.6%	8.8%	1.6%	1.6%	36.8%	10.4%	49.6%
Phalombe	17.2%	14.1%	68.8%	7.0%	0.0%	0.0%	64.1%	11.7%	24.2%
Zomba	24.1%	7.6%	68.2%	14.1%	0.0%	0.0%	34.7%	15.3%	50.0%

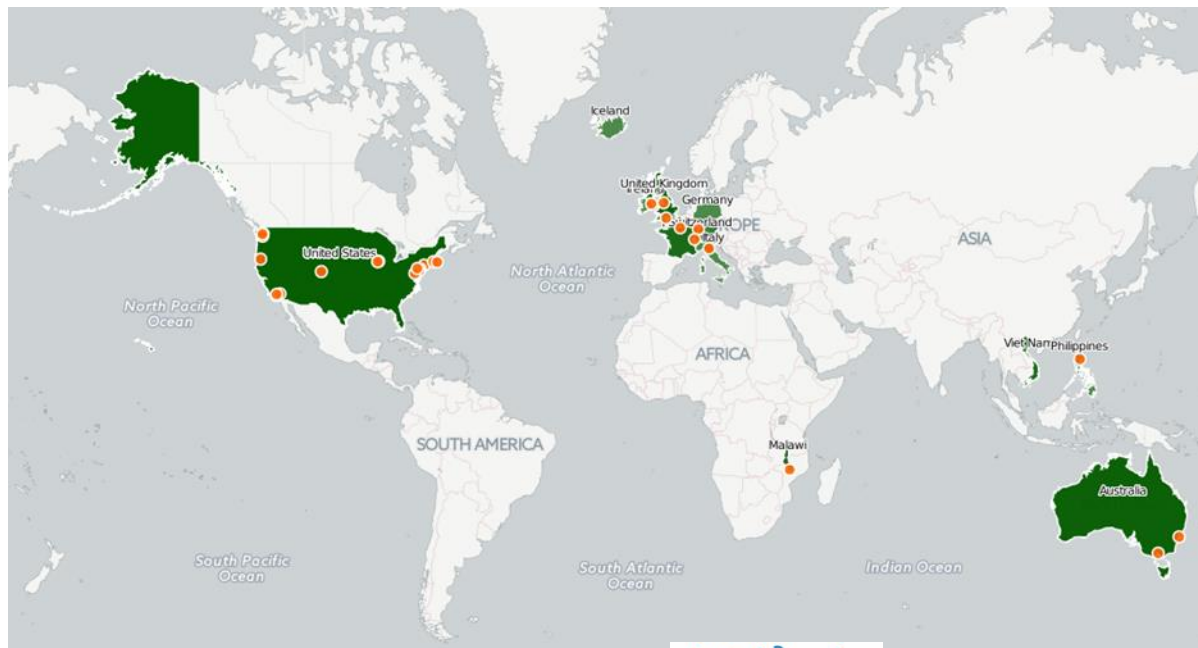


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Photo Classification (Crowdsourcing)

- CrowdFlower site
- 47 contributors from over 10 countries
- Experts (e.g. architects, builder, civil engineer)
- Over 500 houses (3 photos each) classified



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Assistance Required

Started rebuild?

District	completed rebuilding	have not yet started	have started and can complete on their own	have started but need assistance
All Districts	2.0%	80.6%	3.5%	13.9%
Blantyre	0.0%	88.6%	5.7%	5.7%
Blantyre City	0.0%	47.8%	4.3%	47.8%
Chikwawa	1.9%	94.3%	0.0%	3.8%
Mulanje	2.5%	86.3%	1.3%	10.0%
Nsanje	7.4%	77.8%	11.1%	3.7%
Phalombe	1.3%	82.3%	1.3%	15.2%
Zomba	1.9%	73.3%	5.7%	19.0%

Assistance for rebuild

require building materials	require design assistance	require labour	require roofing materials	require technical assistance	require tools
92.9%	26.8%	51.8%	71.4%	25.0%	53.6%
100.0%	50.0%	0.0%	0.0%	0.0%	0.0%
81.8%	9.1%	36.4%	63.6%	9.1%	27.3%
100.0%	0.0%	100.0%	0.0%	0.0%	50.0%
87.5%	0.0%	37.5%	62.5%	0.0%	62.5%
100.0%	0.0%	100.0%	0.0%	0.0%	0.0%
100.0%	8.3%	41.7%	83.3%	16.7%	41.7%
95.0%	60.0%	70.0%	90.0%	55.0%	80.0%

Started repairs?

District	have completed	have not started	can complete on their own	require assistance
All Districts	6.7%	66.7%	1.0%	25.7%
Blantyre	0.0%	100.0%	0.0%	0.0%
Blantyre City	0.0%	100.0%	0.0%	0.0%
Chikwawa	20.0%	65.0%	0.0%	15.0%
Mulanje	6.9%	69.0%	0.0%	24.1%
Nsanje	16.7%	50.0%	16.7%	16.7%
Phalombe	0.0%	61.5%	0.0%	38.5%
Zomba	0.0%	60.0%	0.0%	40.0%

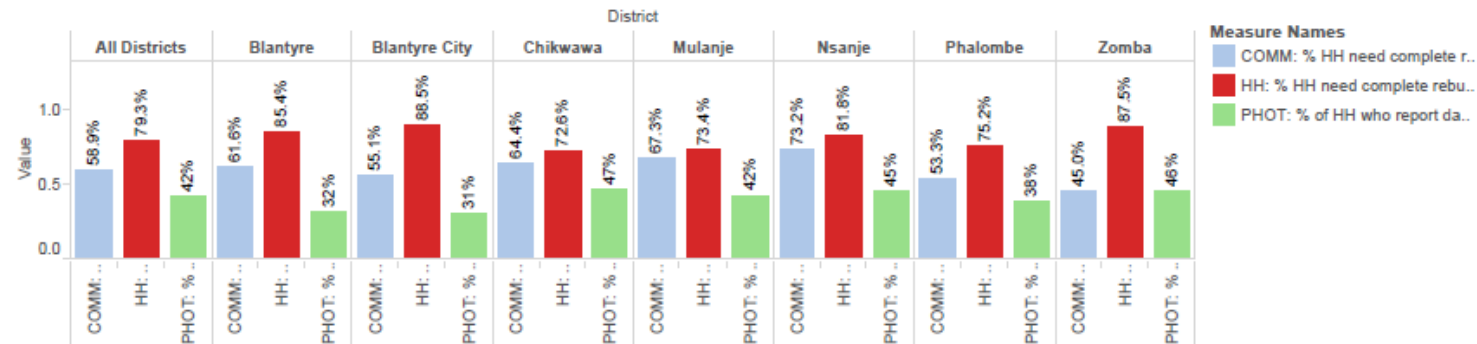
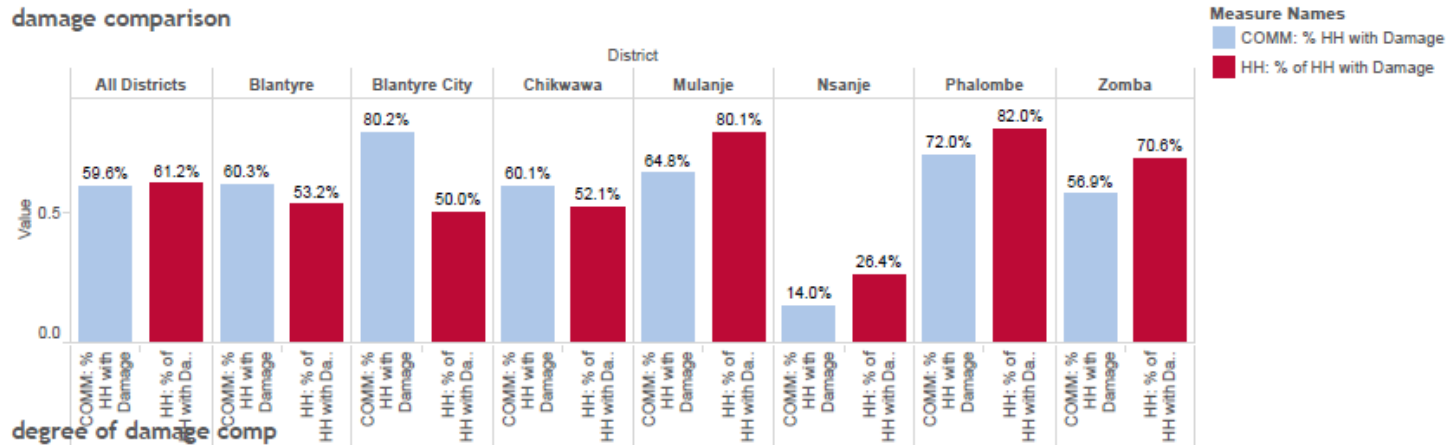
Assistance for repairs

require building materials assistance	require rep design assistance	require labour rep	who require roofing materials	who require technical assistance	who require tools
88.9%	11.1%	48.1%	51.9%	44.4%	63.0%
66.7%	33.3%	0.0%	100.0%	33.3%	33.3%
100.0%	0.0%	28.6%	28.6%	28.6%	28.6%
100.0%	0.0%	100.0%	100.0%	0.0%	0.0%
90.0%	0.0%	60.0%	30.0%	50.0%	80.0%
83.3%	33.3%	66.7%	83.3%	66.7%	100.0%

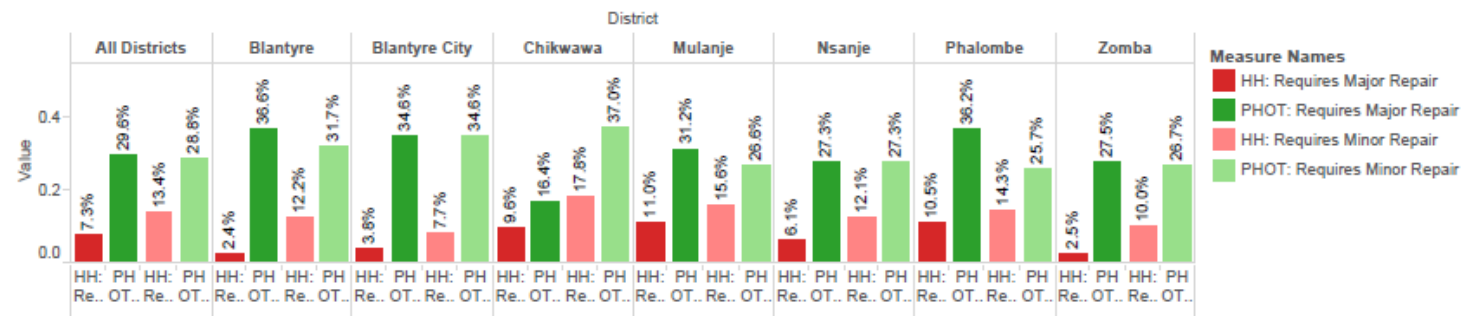


Damage Comparison (HH survey, Community survey, and Photo Classification)

damage comparison

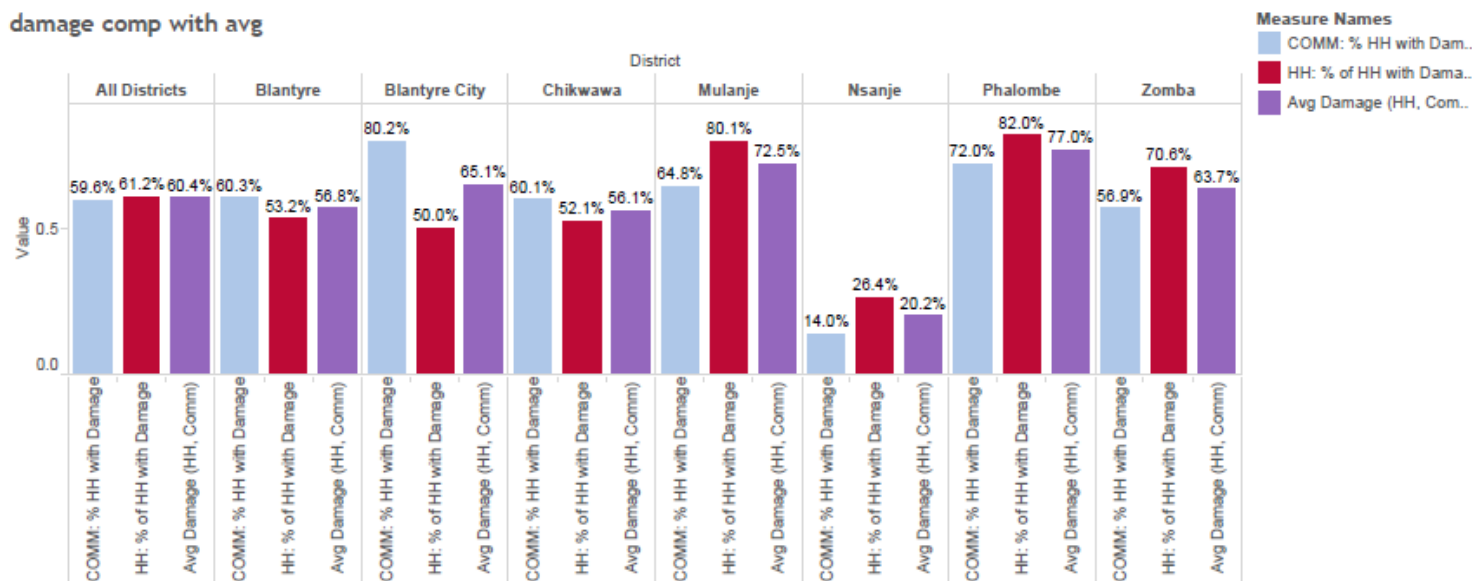


degree of repair

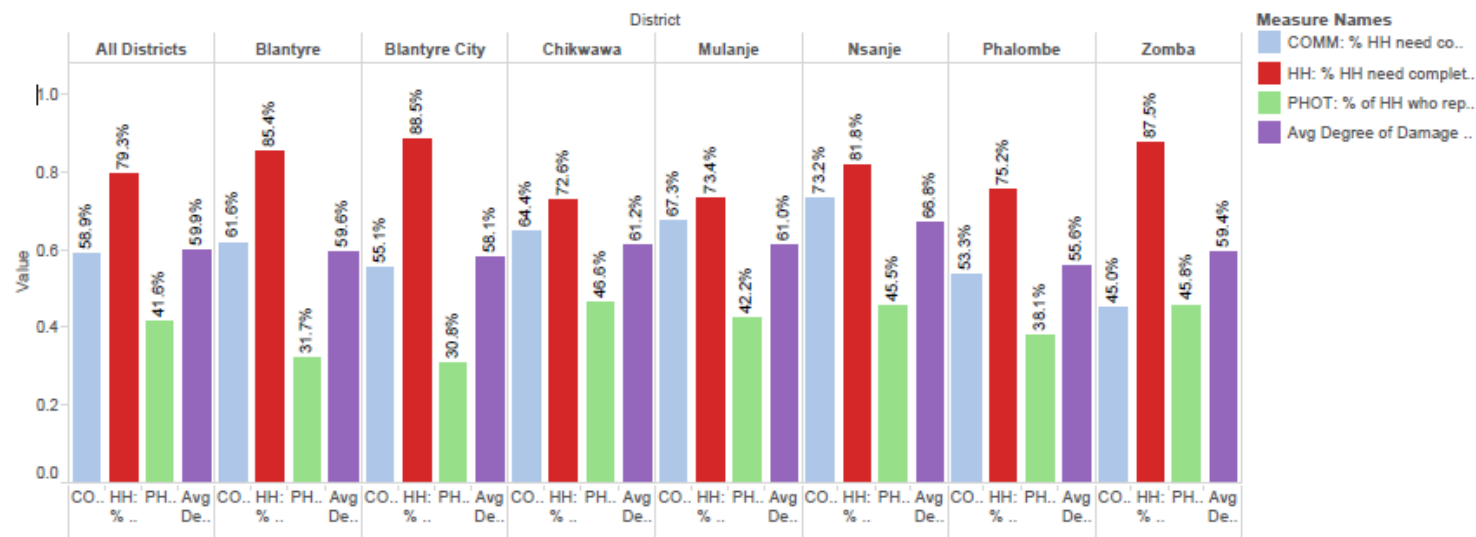


Damage Comparison with Average of the various inputs

damage comp with avg



deg of damage with avg



Thank You to those who provided support for this assessment...

- All Hands Volunteers
- Global Shelter Cluster
- Ministry of Land, Housing and Urban Development
- REACH Initiative
- UNDP
- WASH & Agriculture Clusters
- Enumerators, drivers, crowdsourcing community
- And others who provided input and assistance



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