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NUTRITIONAL RESILIENCE FOLLOWING THE 2015 EARTHQUAKE IN NEPAL

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Photo Credit: LUANAR

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DAMAGE TOLL FROM THE 2015 NEPAL EARTHQUAKE

- 9,000 dead
- 22,000 injured
- 2.6 million displaced
- 750,000 houses damaged
- \$7.1 billion in lost infrastructure



- In 6 hard hit districts
- 50% households lost stored grain and seeds
 - 20% lost cattle
 - 42% lost poultry



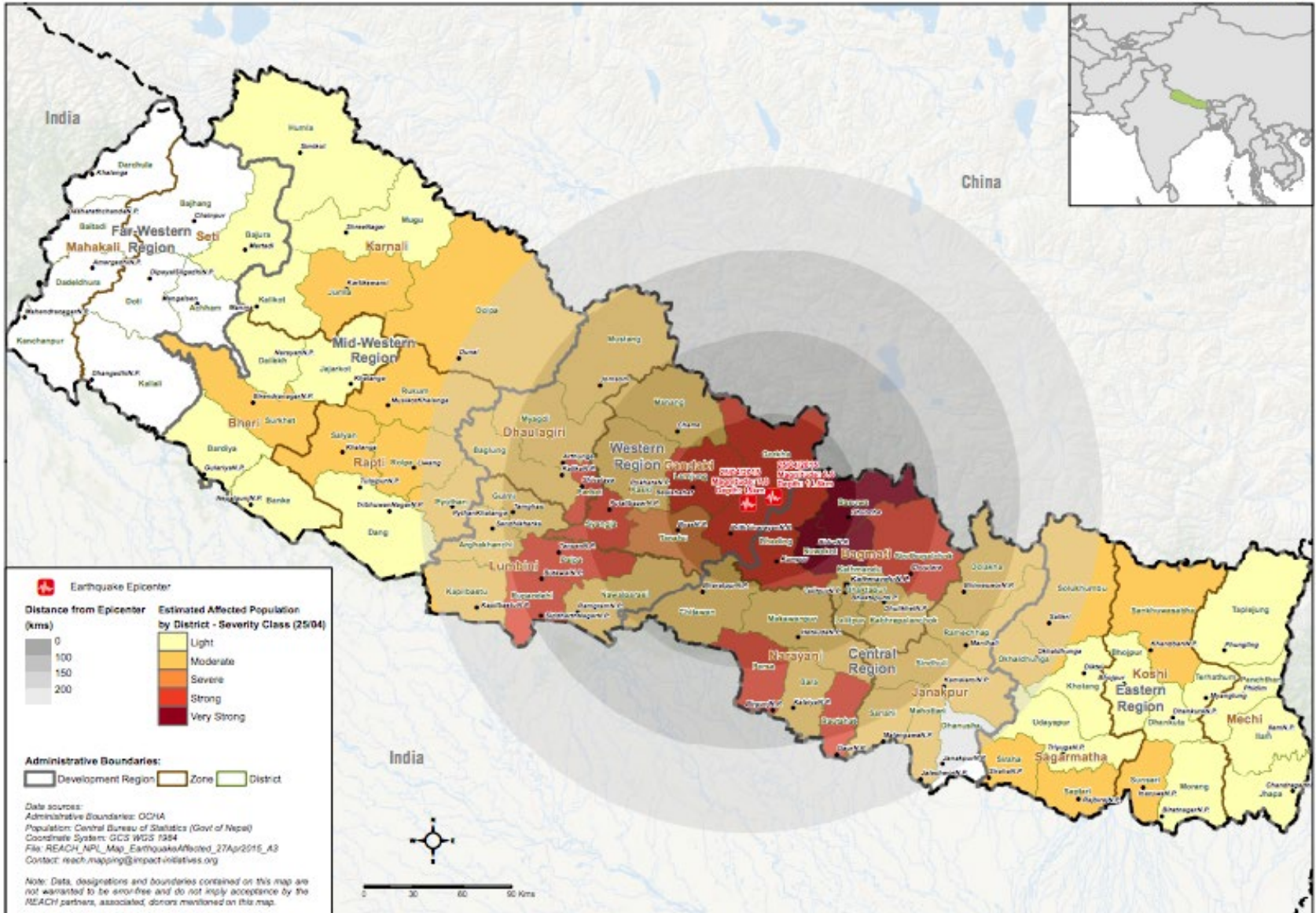


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NEPAL - April 2015 Earthquake Estimated Affected Areas as of 25th April 2015

For Humanitarian Purposes Only
Production date : 27th April 2015



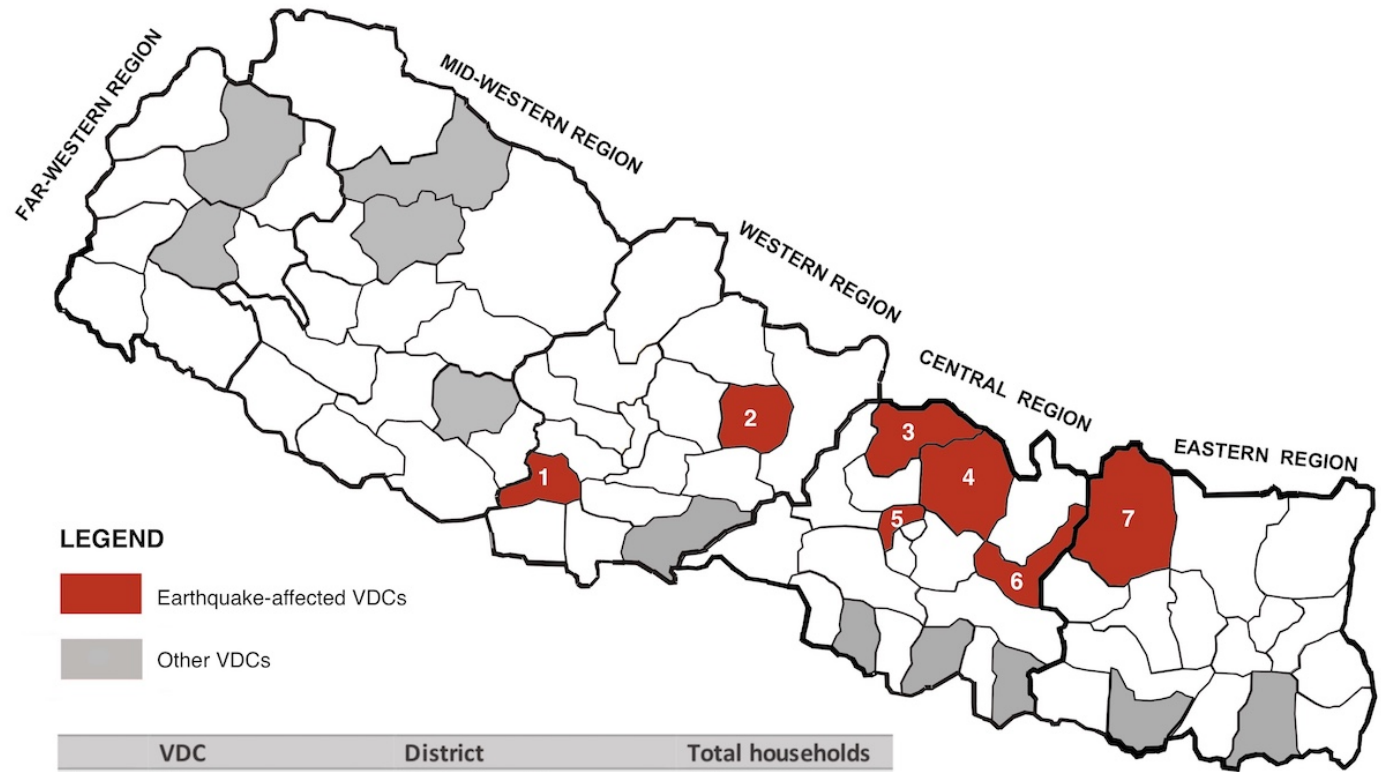


AIMS/CONTENT OF P_oSHAN STUDY

- **Assess:** annually, every May, in a nationally representative sample of VDCs in the Mountains, Hills and Terai;
- **Agricultural practices:** types, amounts of foods grown and marketed; programs reaching and benefiting poor farmers;
- **Household food access and security:** access by rural households; program participation and SES;
- **Diet:** dietary frequencies of mothers and young children
- **Nutritional status:** maternal/preschool child, anthropometry and anemia
- **Link these stages together:** identify pathways that could be improved with agricultural, marketing, nutrition and other public health programs



EARTHQUAKE-AFFECTED DISTRICTS IN POSHAN AREAS



	VDC	District	Total households
1	Sitapur	Arghakhanchi	167
2	Udipur	Lamjung	98
3	Thuman	Rasuwa	35
4	Thulopakhar	Sindhupalchowk	81
5	Gokarneshwor	Kathmandu	574
6	Saipu	Ramechhap	63
7	Namche	Solukhumbu	38
Total			1056

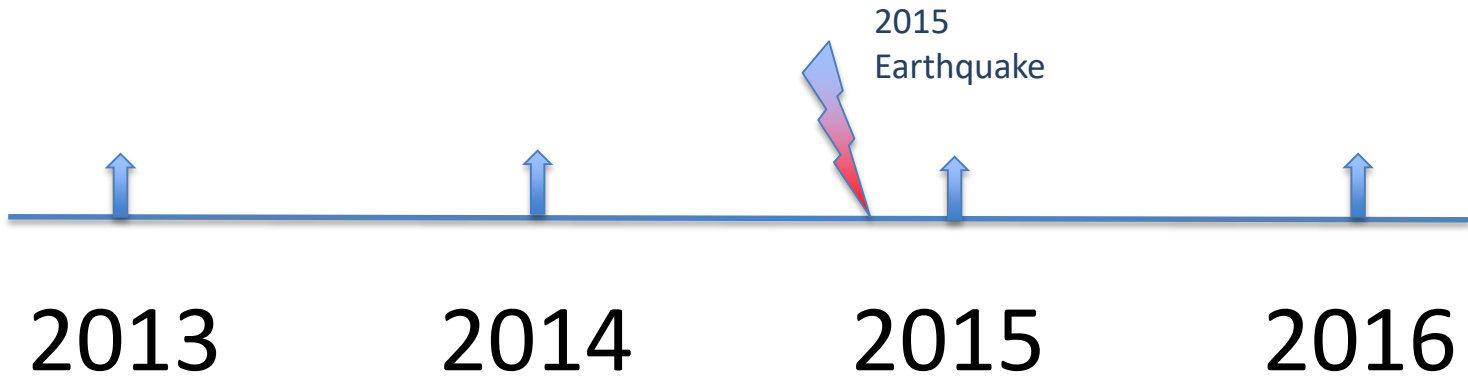
Earthquake-affected sample size:
1056 Households
998 Children



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STUDY DESIGN



Cross sectional sample

Households N = 982

Women N = 1015

Children N = 883

Cross sectional sample

Households N = 1056

Women N = 1083

Children N = 998

Longitudinal (2014 and 2016)

Households N = 537

Women N = 540

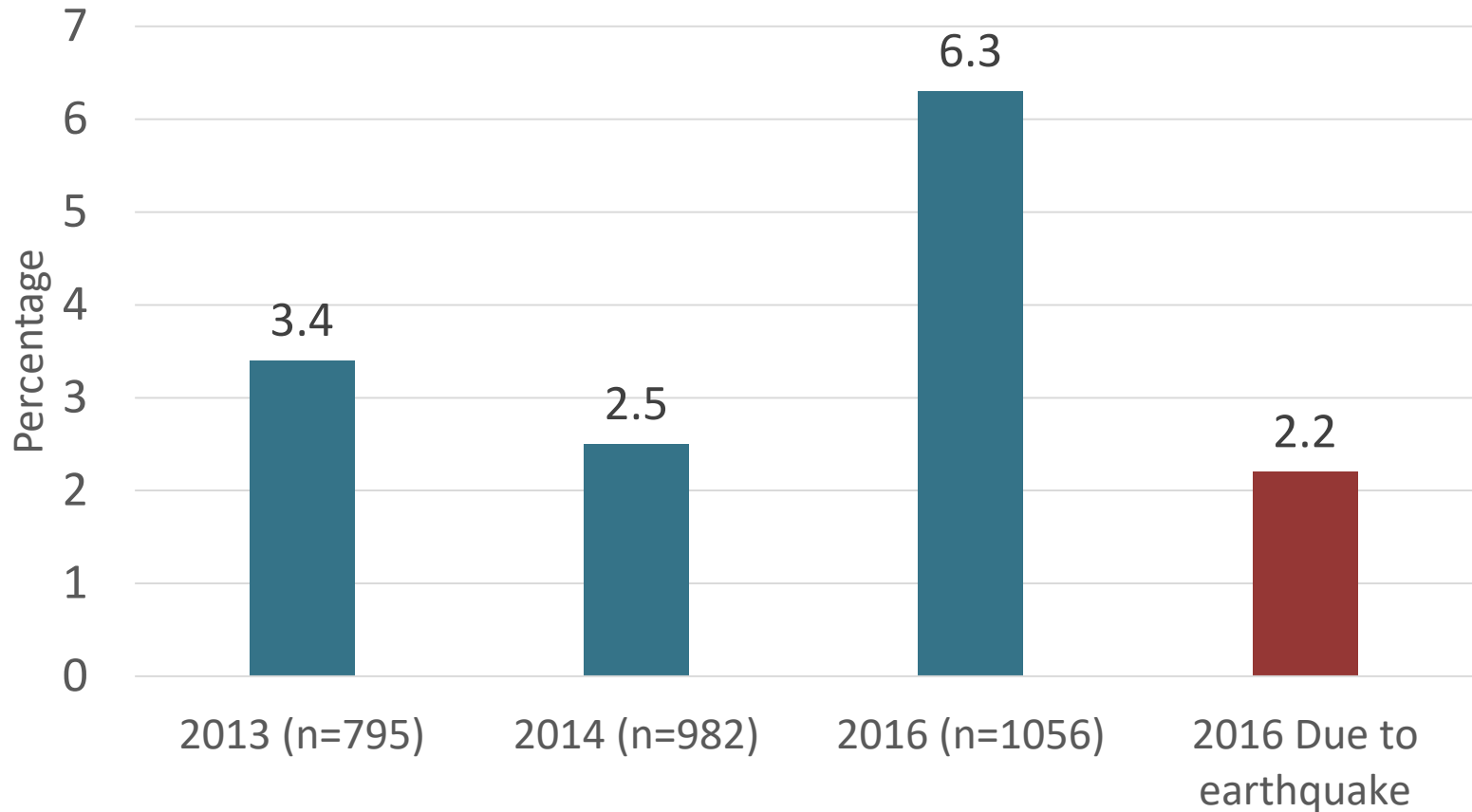
Children N = 352

BREADTH OF SURVEY CONTENT

- SES, wealth scale
- Agricultural production
- Food security (HFIAS)
- Minimum dietary diversity for women
- Infant and young child feeding
- Shocks (both 2014 and 2016; earthquake attribution in 2016)
- Post-earthquake module: damages and recovery



HOUSEHOLD MEMBER DIED (%)





OTHER SHOCKS

Shocks	% HH affected
House/structure damaged	45.5
Job loss due to quake	7.2
Lost business due to quake	6.9
Family member injured	5.8



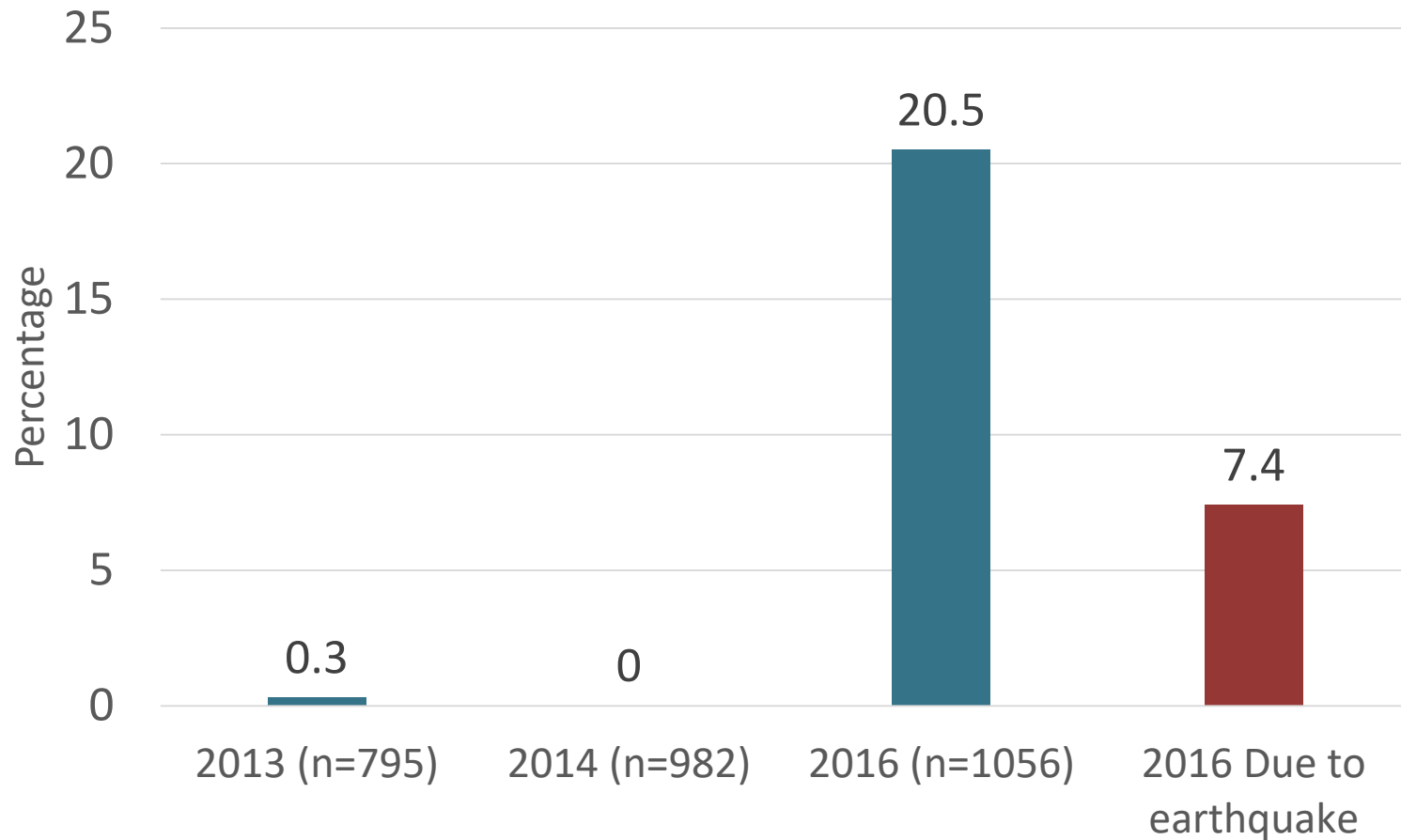
<https://www.adb.org/news/rebuilding-livelihoods-building-back-better-key-nepal-says-adb-vice-president>



<http://www.care.org/newsroom/press/press-releases/one-year-after-nepal-earthquake-urgent-need-accelerate-reconstruction>

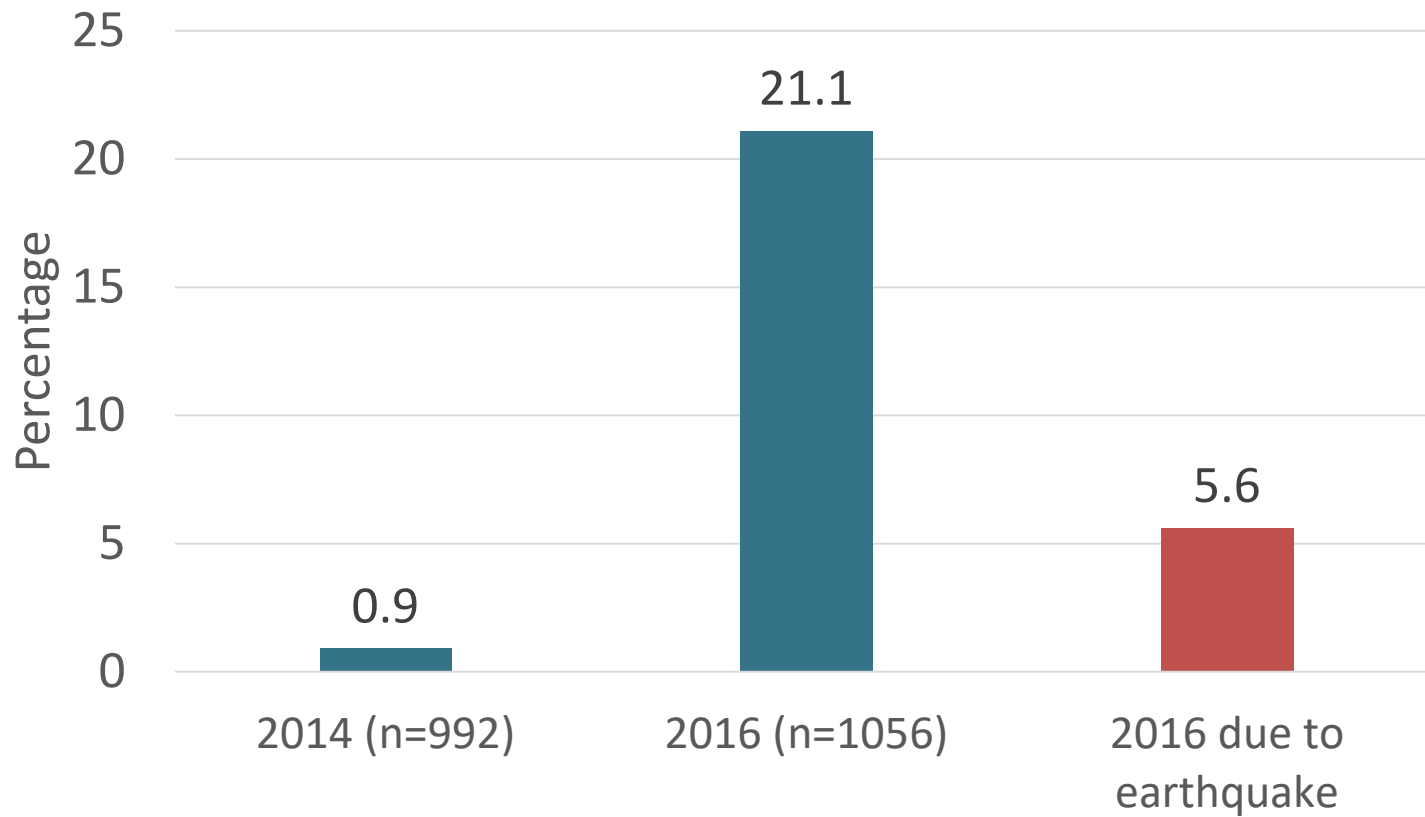


CROP LOSS (%)





LIVESTOCK/ POULTRY LOSS (%)





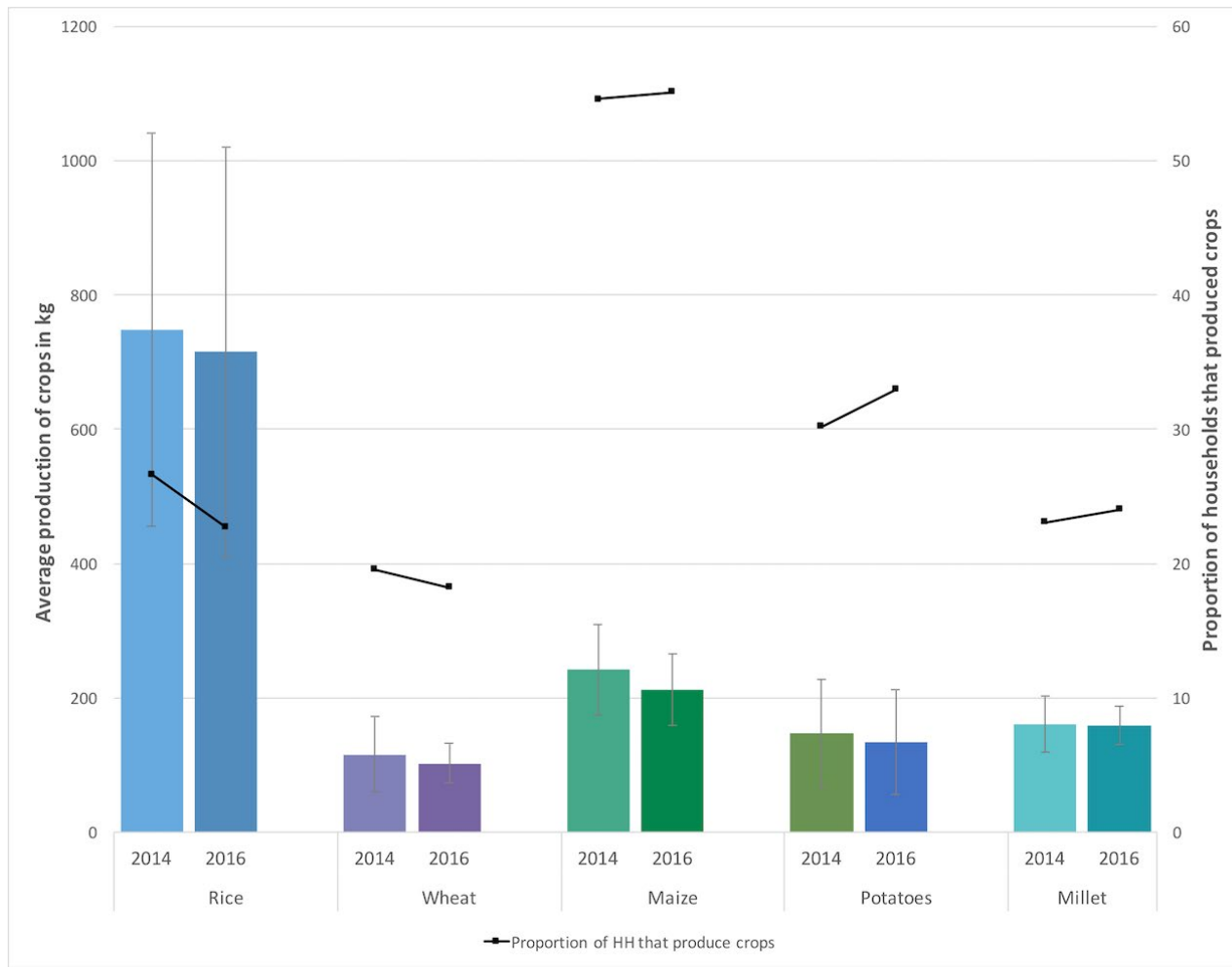
POORER HOUSEHOLDS WERE MOST AFFECTED BY SHOCKS

Shocks reported due to earthquake (% of households in each SES categories)

2014 SES quintile [‡]	Number of households	Death	Shocks reported due to earthquake (% of households in each SES categories)						
			Injury	Structural damage***	Crop loss***	Animal loss***	Job loss	Business failure***	Cash loss
Lowest	38	0.0	10.5	65.8	18.4	13.2	2.6	0.0	2.6
Low	39	2.6	5.1	64.1	20.5	15.4	0.0	2.6	7.7
Middle	132	0.0	5.3	47.7	11.4	9.1	3.0	3.8	0.0
High	83	0.0	4.8	43.4	4.8	4.8	2.4	4.8	2.4
Highest	245	2.5	3.7	40.8	2.9	0.8	0.8	10.6	1.6
Total	537	1.3	4.8	46.4	7.6	5.4	1.7	6.7	1.9
p value		0.131	0.107	<0.001	<0.001	<0.001	0.330	<0.001	0.374

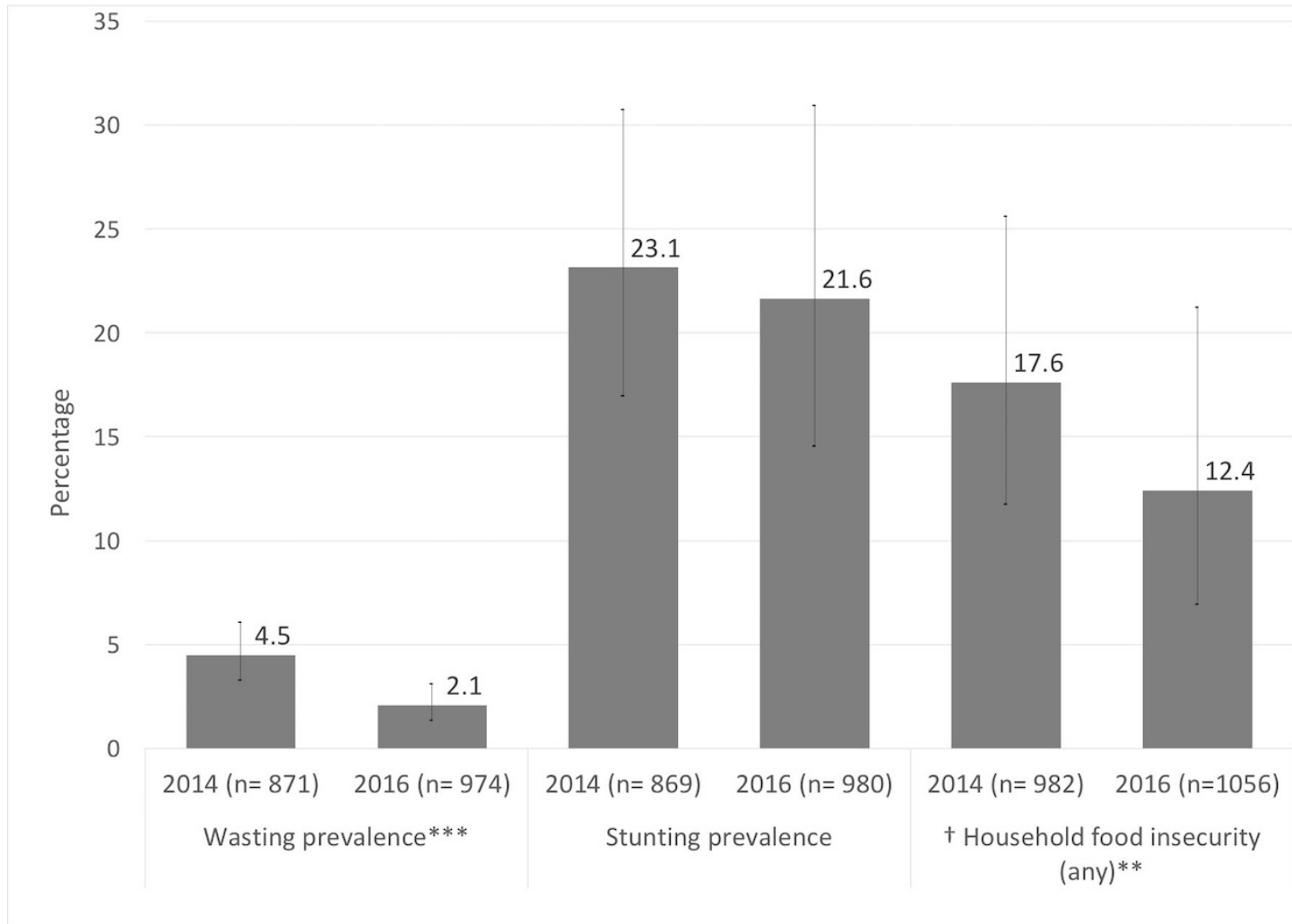


CROP PRODUCTION: SLIGHT DROPS IN % PRODUCING, SIMILAR MEAN PRODUCTION





WASTING AND FOOD INSECURITY DROPPED AFTER EARTHQUAKE





CHANGE IN OTHER INDICATORS

	2014	2016	p
Minimum dietary diversity for women (MDD-W)	42.8	50.6	<0.001
Predominant breastfeeding <6 mo	39.7	48.7	0.248
Breastfeeding <1 hour after birth	37.2	52.5	<0.001

No difference in colostrum or prelacteal feeding



PERCEIVED RECOVERY

	Fully recovered (%)	Partly recovered (%)	Not recovered (%)
Damaged house (n=483)	12.4	44.3	43.3
Loss of livestock/poultry (n=223)	38.6	22.0	39.5
Crop loss (n=216)	51.4	24.5	24.1
Business failure (n=98)	14.3	40.8	44.9
Loss of money/valuables (n=76)	18.4	15.8	65.8
Loss of employment (n=34)	20.6	5.9	73.5



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WHY?

- Were relief/rehabilitation activities successful in preventing a rising problem?
- Is bias a possibility?
- Time frame?



<http://www.fao.org/emergencies/resources/photos/photo-detail/en/c/328904/>

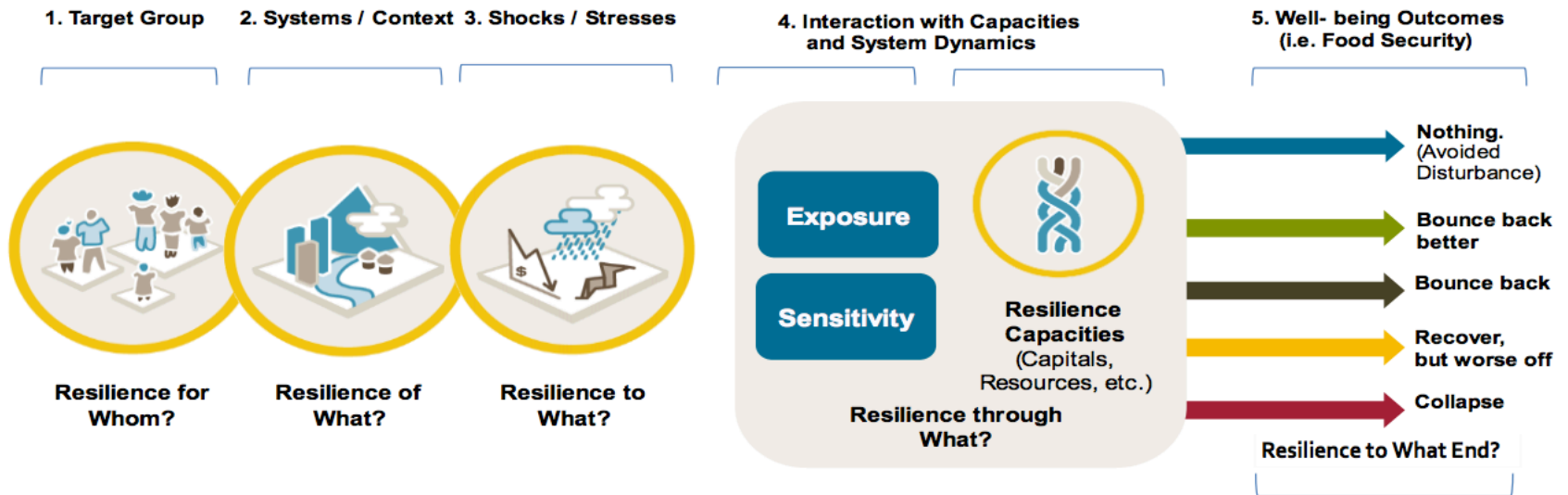


<http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/429923/>



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LIMITATIONS

- Generalizability:
 - *Post hoc* sample: earthquake selected.. Large % in KTM valley
 - Eligibility criteria of PoSHAN surveys
- Recall bias?
- Lack of data on delivery/receipt of interventions
- Data gap for 2015
- Attribution



CONCLUSIONS

- The 2015 earthquake caused significant damage and life lost.
- One year after, many still had not recovered, yet in the earthquake affected areas (and the country as a whole), many indicators suggested a similar or better situation than before the earthquake.
- Having a national study in place enabled before-after comparisons
- What are the longer term impacts?



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