

# COUNTRY EXPOSURE MODEL

Review main statistic of a exposure model and create summaries for a given Country.

```
/home/risk/venvs/py38w/lib/python3.8/site-packages/geopandas/_compat.py:111: UserWarning: The Shapely GEOS version (3.9.1-CAPI-1.14.2) is incompatible with the GEOS version PyGEOS was compiled with (3.10.1-CAPI-1.16.0). Conversions between both will be slow.
  warnings.warn(

# Parameters
country = "Nepal"
```

Exposure files:  
Exposure\_Com\_Nepal.csv  
Exposure\_Ind\_Nepal.csv  
Exposure\_Res\_Nepal.csv

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	26.3M	4,801.2K	\$139.9B	96.41%	85.67%
Ind	0.0M	90.3K	\$11.6B	1.81%	7.11%
Com	0.0M	88.3K	\$11.8B	1.77%	7.23%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	454.5M	\$138.0B	91	\$359
Res	426.3M	\$122.9B	89	\$328
Ind	17.6M	\$6.9B	195	\$659
Com	10.6M	\$8.3B	120	\$1,111

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Bagmati	\$47.3B	903.6K	5,434.1K	28.96%	18.15%	20.70%
Province 1	\$27.6B	1,041.2K	4,498.7K	16.88%	20.91%	17.14%
Madhesh	\$23.0B	1,001.7K	5,392.2K	14.10%	20.11%	20.54%
Lumbini	\$19.7B	582.7K	3,517.2K	12.08%	11.70%	13.40%
Gandaki	\$19.5B	597.7K	2,379.9K	11.93%	12.00%	9.07%
Sudurpashchim	\$17.8B	598.1K	3,440.4K	10.88%	12.01%	13.11%
Karnali	\$8.4B	254.8K	1,588.0K	5.17%	5.12%	6.05%

## Exposure by simplified taxonomy

Adding `MACRO_TAXO` column						
	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$106,421.9M	3,199.7K	16,680.1K	65.19%	64.25%	63.54%
RC	\$30,197.0M	119.3K	1,051.4K	18.50%	2.40%	4.01%
W	\$21,469.2M	1,580.3K	8,042.8K	13.15%	31.73%	30.64%
S	\$3,451.8M	15.0K	0.0K	2.11%	0.30%	0.00%
ADO/E	\$1,718.0M	65.4K	476.2K	1.05%	1.31%	1.81%

## Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST\_USD`

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
MUR	MUR+ST/LWAL+DNO/H:2/RES	\$24,341.9M	1,081,860	16.65%	22.77%
	MUR/LWAL+DNO/H:1/FWCP/RES	\$17,473.0M	485,360	11.95%	10.22%
	MUR+ST/LWAL+DNO/H:3/RES	\$12,808.1M	237,187	8.76%	4.99%
	MUR/LWAL+DNO/H:2/FWCP/RES	\$12,453.4M	345,927	8.52%	7.28%
W	W+WBB/LPB+DNO/H:1/RES	\$10,987.2M	887,852	7.51%	18.69%
MUR	MUR+ST/LWAL+DNO/H:1/RES	\$10,716.0M	476,265	7.33%	10.03%
RC	CR/LFINF+DUL/H:3/RES	\$8,345.1M	59,708	5.71%	1.26%
MUR	MUR/LWAL+DNO/H:1/FWCN/RES	\$7,234.3M	219,221	4.95%	4.61%
RC	CR/LFINF+DUL/HBET:4-5/RES	\$6,460.8M	17,751	4.42%	0.37%
	CR/LFM+DUL/HBET:1-2/IND1	\$5,400.9M	10,609	3.69%	0.22%
MUR	MUR/LWAL+DNO/H:3/FWCP/RES	\$5,355.4M	61,984	3.66%	1.30%
	MUR/LWAL+DNO/H:2/FWCN/RES	\$5,017.5M	152,044	3.43%	3.20%
	MUR/LWAL+DNO/HBET:4-5/FWCP/RES	\$4,385.3M	19,490	3.00%	0.41%
	W+WBB/LPB+DNO/H:2/RES	\$4,287.1M	346,436	2.93%	7.29%
W	W+WO/LN+DNO/H:1/RES	\$2,844.5M	189,633	1.95%	3.99%
	S/LFM+DUL/HBET:1-2/IND1	\$2,685.0M	4,475	1.84%	0.09%
W	W+WO/LN+DNO/H:2/RES	\$1,968.0M	131,200	1.35%	2.76%
MUR	MUR/LWAL+DNO/H:3/FWCN/RES	\$1,738.7M	21,953	1.19%	0.46%
RC	CR/LFINF+DUL/HBET:3-5/COM12	\$1,720.3M	1,338	1.18%	0.03%

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