

# 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 = "Kiribati"
```

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

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	110.1K	24,879	\$932.4M	95.46%	87.17%
Ind	0.0K	116	\$12.2M	0.45%	1.14%
Com	0.0K	1,066	\$125.0M	4.09%	11.69%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	902.9K	\$859,925.2K	35	\$1,185
Res	790.9K	\$792,523.4K	32	\$1,179
Ind	10.3K	\$4,882.5K	89	\$1,182
Com	101.7K	\$62,519.3K	95	\$1,229

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Sth.Tarawa	\$680,232.7K	7,231	56,388	63.60%	27.75%	51.20%
Kiritimati	\$107,459.7K	2,419	6,456	10.05%	9.28%	5.86%
Nth.Tarawa	\$40,166.8K	1,637	6,629	3.76%	6.28%	6.02%
Tabuaeran	\$32,619.2K	1,145	2,315	3.05%	4.39%	2.10%
Tabiteuea.Nth	\$23,201.6K	1,262	3,955	2.17%	4.84%	3.59%
Abaiang	\$22,724.0K	1,721	5,568	2.12%	6.60%	5.06%
Arorae	\$20,353.2K	410	1,011	1.90%	1.57%	0.92%
Nonouti	\$18,378.2K	1,066	2,743	1.72%	4.09%	2.49%
Abemama	\$17,367.0K	1,130	3,262	1.62%	4.34%	2.96%
Teeraina	\$14,008.0K	395	1,712	1.31%	1.52%	1.55%
Nikunau	\$10,937.5K	681	1,789	1.02%	2.61%	1.62%
Butaritari	\$10,503.2K	439	3,224	0.98%	1.68%	2.93%
Beru	\$10,442.9K	1,353	2,051	0.98%	5.19%	1.86%
Makin	\$10,387.5K	1,054	1,990	0.97%	4.04%	1.81%
Onotoa	\$9,261.6K	419	1,393	0.87%	1.61%	1.26%
Marakei	\$8,259.2K	987	2,799	0.77%	3.79%	2.54%
Banaba	\$6,881.3K	126	268	0.64%	0.48%	0.24%
Tabiteuea.Sth	\$6,018.2K	457	1,306	0.56%	1.75%	1.19%
Kuria	\$5,688.9K	393	1,046	0.53%	1.51%	0.95%
Tamana	\$5,004.1K	672	1,104	0.47%	2.58%	1.00%
Maiana	\$5,001.5K	589	1,982	0.47%	2.26%	1.80%
Aranuka	\$4,203.1K	463	1,125	0.39%	1.78%	1.02%
Kanton	\$525.9K	12	20	0.05%	0.05%	0.02%

## Exposure by simplified taxonomy

Adding `MACRO\_TAX0` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MCF	\$510.6M	7,229	34,358	47.73%	27.74%	31.20%
W	\$361.8M	17,637	69,582	33.82%	67.68%	63.18%
RC	\$161.6M	459	2,784	15.11%	1.76%	2.53%
S	\$35.7M	736	3,413	3.34%	2.82%	3.10%

## Exposure by taxonomy

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

	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY			
MCF	MCF/LWAL+DUL/H:1/RES	\$458.5M6,726	47.94%	28.08%
W	W+WLI/LFBR+DUL/H:1/RES	\$135.9M3,212	14.21%	13.41%
RC	CR+CIP/LFINF+DUL/HBET:2-3/RES	\$124.4M344	13.01%	1.44%
W	W+WLI/LPB+DUL/EWV/RW05/HBET:1-2/RES	\$70.0M12,430	7.32%	51.89%
MCF	MCF/LWAL+DUL/H:1/COM	\$49.3M484	5.15%	2.02%
W	W+WLI/LPB+DUL/H:1/RES	\$47.0M509	4.92%	2.12%
RC	CR+CIP/LFINF+DUL/HBET:2-3/COM	\$36.3M110	3.80%	0.46%
W	W+WLI/LFBR+DUL/HBET:2-3/RES	\$35.0M141	3.66%	0.59%