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 Sh
apely 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 = "Tuvalu"
```

```
Exposure files:
  Exposure_Com_Tuvalu.csv
  Exposure_Ind_Tuvalu.csv
  Exposure_Res_Tuvalu.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	10.8K	2,621	$272,411.1K	93.77%	82.17%
Ind	0.0K	13	$1,789.9K	0.47%	0.54%
Com	0.0K	161	$57,315.8K	5.76%	17.29%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	231,761	$237,345.7K	83	$1,430
Res	206,293	$197,932.0K	79	$1,321
Ind	1,411	$1,017.7K	109	$1,269
Com	24,058	$38,396.1K	149	$2,382

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Funafuti	$199,253.9K	883	6,194	60.10%	31.59%	57.16%
Vaitupu	$56,606.1K	410	1,565	17.07%	14.67%	14.44%
Nanumea	$14,839.9K	519	556	4.48%	18.57%	5.13%
Nukufetau	$13,291.0K	238	540	4.01%	8.52%	4.98%
Niutao	$13,010.4K	206	606	3.92%	7.37%	5.59%
Nukulaelae	$12,895.6K	164	324	3.89%	5.87%	2.99%
Nui	$10,951.9K	165	541	3.30%	5.90%	4.99%
Nanumanga	$9,641.7K	200	481	2.91%	7.16%	4.44%
Niulakita	$1,026.3K	10	30	0.31%	0.36%	0.28%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
W	$152,226.2K	1,434	5,842	45.92%	51.31%	53.91%
MCF	$121,240.3K	1,271	4,628	36.57%	45.47%	42.71%
RC	$56,298.4K	65	357	16.98%	2.33%	3.29%
S	$1,751.9K	25	10	0.53%	0.89%	0.10%

Exposure by taxonomy

```
Showing only taxonomies that represent 90% of the total `COST_USD`
```

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MCF	MCF/LWAL+DUL/H:1/RES	$105.7M	1,196	36.05%	52.34%
W	W+WLI/LFBR+DUL/H:1/RES	$78.1M	578	26.64%	25.30%
RC	CR+CIP/LFINF+DUL/HBET:2-3/RES	$39.7M	46	13.53%	2.01%
W	W+WLI/LPB+DUL/H:1/RES	$37.7M	374	12.86%	16.37%
RC	CR+CIP/LFINF+DUL/HBET:2-3/COM	$16.6M	19	5.66%	0.83%
MCF	MCF/LWAL+DUL/H:1/COM	$15.4M	72	5.25%	3.15%