COUNTRY EXPOSURE MODEL

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

```
# Parameters
country = "Gabon"
```

```
Exposure files:
  Exposure_Com_Gabon.csv
  Exposure_Ind_Gabon.csv
  Exposure_Res_Gabon.csv
```

Sanity checks and formats

```
Gabon
  Exposure/Exposure/Exposure_Com_Gabon.csv
  Exposure/Exposure/Exposure_Ind_Gabon.csv
  Exposure/Exposure/Exposure_Res_Gabon.csv
  Occupants / Dwellings = 4.0
  Reference avg household size (2019) = 4.1
  Population (exposure / UN_2021) = 0.95
Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	2,160.3K	513,252	$10,040.7M	96.92%	89.29%
Ind	0.0K	2,714	$267.9M	0.51%	2.38%
Com	0.0K	13,580	$936.1M	2.56%	8.32%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	45,056.8K	$8,569.1M	85	$250
Res	41,750.4K	$7,766.7M	81	$240
Ind	761.2K	$160.6M	280	$352
Com	2,545.2K	$641.8M	187	$368

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Estuaire	$4,122.4M	193.7K	790.3K	36.66%	36.58%	36.58%
Haut-Ogooue	$3,106.7M	146.0K	595.7K	27.63%	27.58%	27.57%
Woleu-Ntem	$1,252.5M	59.0K	240.7K	11.14%	11.14%	11.14%
Ogooue-Maritime	$713.2M	33.7K	137.3K	6.34%	6.36%	6.36%
Ngounie	$569.2M	26.9K	109.7K	5.06%	5.08%	5.08%
Ogooue-Lolo	$451.4M	21.4K	87.1K	4.01%	4.03%	4.03%
Moyen-Ogooue	$393.9M	18.7K	76.2K	3.50%	3.52%	3.53%
Ogooue-Ivindo	$366.9M	17.4K	71.0K	3.26%	3.29%	3.29%
Nyanga	$268.4M	12.8K	52.2K	2.39%	2.42%	2.42%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$3,617.4M	157,302	638.7K	32.17%	29.71%	29.57%
ADO/E	$3,584.3M	193,057	774.4K	31.88%	36.46%	35.85%
W	$2,573.6M	139,646	567.5K	22.89%	26.37%	26.27%
RC	$934.7M	16,999	89.5K	8.31%	3.21%	4.14%
MCF	$385.7M	10,538	44.8K	3.43%	1.99%	2.07%
S	$86.6M	678	0.0K	0.77%	0.13%	0.00%
OT	$62.3M	11,326	45.4K	0.55%	2.14%	2.10%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	$1,507.8M	67,550	14.95%	13.60%
MUR	MUR+CB/LWAL+CDN/H:2/RES	$1,051.1M	42,698	10.43%	8.60%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$915.6M	69,282	9.08%	13.95%
W	W+WWD/LWAL+CDN/H:1/RES	$727.9M	66,103	7.22%	13.31%
MUR	MUR+CL/LWAL+CDN/H:2/RES	$714.8M	29,037	7.09%	5.85%
	MUR+CB/LWAL+CDN/H:1/RES	$638.2M	43,788	6.33%	8.82%
W	W/LWAL+CDL/H:2/RES	$554.5M	18,457	5.50%	3.72%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	$520.0M	47,217	5.16%	9.51%
W	W+WWD/LWAL+CDN/H:2/RES	$513.8M	27,620	5.10%	5.56%
MUR	MUR+CL/LWAL+CDN/H:1/RES	$434.1M	29,782	4.31%	6.00%
W	W/LWAL+CDL/H:3/RES	$340.5M	7,374	3.38%	1.48%
	W/LWAL+CDL/H:1/RES	$336.7M	18,930	3.34%	3.81%
RC	CR/LFINF+CDL/H:3/RES	$247.2M	4,609	2.45%	0.93%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	$207.0M	2,497	2.05%	0.50%
	MUR+ADO/LWAL+CDN/H:1/COM	$201.6M	4,989	2.00%	1.00%
RC	CR/LFINF+CDL/H:2/RES	$201.2M	5,769	2.00%	1.16%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	$199.3M	912	1.98%	0.18%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	$138.2M	572	1.37%	0.12%
RC	CR/LFINF+CDL/HBET:4-7/RES	$110.3M	211	1.09%	0.04%
MUR	MUR+CL/LWAL+CDN/HBET:3-6/RES	$94.3M	390	0.94%	0.08%
MCF	MCF+CB/LWAL+CDL/H:2/RES	$92.0M	2,470	0.91%	0.50%
	MCF+CL/LWAL+CDL/H:2/RES	$92.0M	2,470	0.91%	0.50%
RC	CR/LWAL+CDL/H:3/RES	$82.4M	1,538	0.82%	0.31%
MUR	MUR+CB/LWAL+CDN/H:2/COM	$81.8M	791	0.81%	0.16%
	MUR+CB/LWAL+CDN/H:1/COM	$80.1M	1,589	0.79%	0.32%