COUNTRY EXPOSURE MODEL

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

```
# Parameters
country = "South_Sudan"
```

```
Exposure files:
  Exposure_Com_South_Sudan.csv
  Exposure_Ind_South_Sudan.csv
  Exposure_Res_South_Sudan.csv
```

Sanity checks and formats

```
South_Sudan
  Exposure/Exposure/Exposure_Com_South_Sudan.csv
  Exposure/Exposure/Exposure_Ind_South_Sudan.csv
  Exposure/Exposure/Exposure_Res_South_Sudan.csv
  Occupants / Dwellings = 6.1
  Reference avg household size (2019) = 6.0
  Population (exposure / UN_2021) = 0.98
  Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	11.2M	1,768.6K	$20,910.6M	95.94%	82.75%
Ind	0.0M	30.2K	$1,983.2M	1.64%	7.85%
Com	0.0M	44.7K	$2,377.3M	2.43%	9.41%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	154.0M	$20,203.8M	84	$164
Res	136.9M	$17,215.2M	77	$153
Ind	8.6M	$1,310.6M	285	$230
Com	8.5M	$1,678.0M	190	$279

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Eastern Equatoria	$9,379.7M	683.9K	4,147.4K	37.12%	37.10%	37.10%
Jonglei	$3,139.9M	229.1K	1,389.0K	12.42%	12.42%	12.42%
Central Equatoria	$2,822.0M	205.9K	1,248.4K	11.17%	11.17%	11.17%
Upper Nile	$2,282.1M	166.5K	1,009.7K	9.03%	9.03%	9.03%
Warrap	$1,632.7M	119.1K	722.5K	6.46%	6.46%	6.46%
Unity	$1,466.3M	107.0K	649.0K	5.80%	5.80%	5.80%
Western Equatoria	$1,435.8M	104.8K	635.5K	5.68%	5.68%	5.68%
Lakes	$1,357.2M	99.0K	600.7K	5.37%	5.37%	5.37%
Northern Bahr el Ghazal	$1,057.3M	77.2K	468.1K	4.18%	4.19%	4.19%
Western Bahr el Ghazal	$698.1M	51.0K	309.4K	2.76%	2.77%	2.77%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$9,263.0M	538.2K	3,205.9K	36.65%	29.19%	28.68%
W	$7,653.8M	562.6K	3,416.0K	30.29%	30.52%	30.56%
ADO/E	$6,098.9M	565.7K	3,508.6K	24.13%	30.68%	31.38%
S	$700.8M	7.5K	0.0K	2.77%	0.41%	0.00%
OT	$562.8M	140.1K	850.3K	2.23%	7.60%	7.61%
RC	$544.1M	13.1K	99.4K	2.15%	0.71%	0.89%
MCF	$447.8M	16.2K	99.4K	1.77%	0.88%	0.89%

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	$2,746.4M	168,691	12.08%	9.59%
W	W+WWD/LWAL+CDN/H:1/RES	$2,348.5M	292,371	10.33%	16.62%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$1,667.7M	173,013	7.34%	9.84%
W	W+WWD/LWAL+CDN/H:2/RES	$1,657.5M	122,168	7.29%	6.95%
MUR	MUR+CB/LWAL+CDN/H:2/RES	$1,655.6M	91,519	7.28%	5.20%
	MUR+CL/LWAL+CDN/H:2/RES	$1,187.0M	65,615	5.22%	3.73%
W	W/LWAL+CDL/H:2/RES	$1,178.7M	54,296	5.19%	3.09%
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	$1,066.7M	73,707	4.69%	4.19%
	MUR+CB/LWAL+CDN/H:1/RES	$1,005.3M	93,865	4.42%	5.34%
ADO/E	EWV/LN+CDN/H:1/RES	$844.7M	210,329	3.72%	11.96%
W	W/LWAL+CDL/H:3/RES	$724.1M	21,695	3.19%	1.23%
MUR	MUR+CL/LWAL+CDN/H:1/RES	$720.7M	67,297	3.17%	3.83%
W	W/LWAL+CDL/H:1/RES	$715.7M	55,688	3.15%	3.17%
MUR	MUR+STRUB/LWAL+CDN/H:1/RES	$647.7M	75,599	2.85%	4.30%
OT	ME+MEO/LWAL+CDN/H:1/RES	$415.3M	103,417	1.83%	5.88%
W	W/LWAL+CDL/H:2/COM	$398.9M	4,916	1.75%	0.28%
	W/LWAL+CDL/H:1/COM	$388.5M	9,832	1.71%	0.56%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	$363.1M	2,282	1.60%	0.13%
S	S+SL/LFM+CDL/H:1/IND	$275.4M	3,840	1.21%	0.22%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	$260.3M	14,389	1.15%	0.82%
	MUR+CB/LWAL+CDN/H:1/IND	$250.2M	5,431	1.10%	0.31%
W	W/LWAL+CDL/H:3/COM	$242.1M	1,643	1.06%	0.09%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	$224.6M	3,727	0.99%	0.21%
MUR	MUR+STRUB/LWAL+CDN/H:1/IND	$219.8M	5,963	0.97%	0.34%
	MUR+CB/LWAL+CDN/HBET:3-6/RES	$218.9M	1,230	0.96%	0.07%
ADO/E	MUR+ADO/LWAL+CDN/H:1/COM	$218.7M	7,453	0.96%	0.42%
MUR	MUR+CL/LWAL+CDN/H:1/IND	$206.4M	4,480	0.91%	0.25%
S	S+SL/LFM+CDL/H:2/IND	$200.3M	1,279	0.88%	0.07%
RC	CR/LFINF+CDL/H:3/RES	$183.0M	4,661	0.81%	0.26%
MUR	MUR+CB/LWAL+CDN/H:2/IND	$182.0M	1,813	0.80%	0.10%
	MUR+STRUB/LWAL+CDN/H:2/IND	$159.8M	1,983	0.70%	0.11%
	MUR+STDRE/LWAL+CDN/H:1/RES	$158.1M	14,760	0.70%	0.84%