

# 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 (3.10.0-CAPI-1.16.0). Conversions between both will be slow.
  warnings.warn(
```

```
# Parameters
country = "Niger"
```

Exposure files:  
Exposure\_Com\_Niger.csv  
Exposure\_Com\_Nigeria.csv  
Exposure\_Ind\_Niger.csv  
Exposure\_Ind\_Nigeria.csv  
Exposure\_Res\_Niger.csv  
Exposure\_Res\_Nigeria.csv

## Sanity checks and formats

Niger  
../Exposure/Africa/Exposure\_Com\_Niger.csv  
../Exposure/Africa/Exposure\_Ind\_Niger.csv  
../Exposure/Africa/Exposure\_Res\_Niger.csv  
Occupants / Dwellings = 6.0  
Reference avg household size (2019) = 5.91  
Population (exposure / UN\_2021) = 0.96  
Exposure models OK

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	24.2M	3,881,125	\$52,997.2M	99.51%	96.38%
Ind	0.0M	4,691	\$756.0M	0.12%	1.37%
Com	0.0M	14,544	\$1,233.0M	0.37%	2.24%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	COST_PER_CAPITA	AVG_BUILDING_AREA_SQM	AVG_COST_PER_SQM
OCCUPANCY					
Total	316,183.1K	\$44,914.0M	\$2,272	81	
Res	305,079.7K	\$43,386.4M	\$2,190	79	
Ind	4,667.8K	\$539.3M	\$31	995	
Com	6,435.6K	\$988.3M	\$51	442	

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Zinder	\$12,015.1M	852.0K	5,287.5K	21.85%	21.85%	21.85%
Tahoua	\$11,483.6M	814.4K	5,053.6K	20.88%	20.88%	20.88%
Maradi	\$10,657.6M	755.8K	4,690.2K	19.38%	19.38%	19.38%
Tillabery	\$8,487.6M	602.0K	3,735.5K	15.44%	15.43%	15.43%
Dosso	\$5,831.2M	413.7K	2,567.1K	10.60%	10.61%	10.61%
Niamey	\$2,920.7M	207.4K	1,287.0K	5.31%	5.32%	5.32%
Diffa	\$2,060.2M	146.4K	908.4K	3.75%	3.75%	3.75%
Agadez	\$1,530.2M	108.8K	675.3K	2.78%	2.79%	2.79%

## Exposure by simplified taxonomy

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
ADO/E	\$22,986.7M	1,556,995	9,805.3K	41.80%	39.92%	40.51%
W	\$14,908.1M	1,430,391	8,717.5K	27.11%	36.67%	36.02%
MUR	\$14,564.5M	768,898	4,784.3K	26.49%	19.71%	19.77%
RC	\$1,115.8M	22,744	176.8K	2.03%	0.58%	0.73%
MCF	\$796.6M	28,050	176.8K	1.45%	0.72%	0.73%
OT	\$360.5M	92,107	543.9K	0.66%	2.36%	2.25%
S	\$254.1M	1,175	0.0K	0.46%	0.03%	0.00%

## Exposure by taxonomy

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

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$12,410.7M	670,551	25.16%	18.40%
W	W+WWD/LWAL+CDN/H:1/RES	\$7,978.4M	959,403	16.18%	26.32%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$7,536.0M	687,744	15.28%	18.87%
W	W+WWD/LWAL+CDN/H:2/RES	\$5,631.1M	400,893	11.42%	11.00%
	MUR+CB/LWAL+CDN/H:2/RES	\$5,219.5M	247,726	10.58%	6.80%
MUR	MUR+CB/LWAL+CDN/H:1/RES	\$3,169.4M	254,078	6.43%	6.97%
	MUR+CL/LWAL+CDN/H:2/RES	\$2,067.6M	98,129	4.19%	2.69%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$1,640.8M	9,046	3.33%	0.25%
MUR	MUR+CL/LWAL+CDN/H:1/RES	\$1,255.5M	100,646	2.55%	2.76%
ADO/E	EWV/LN+CDN/H:1/RES	\$706.5M	180,525	1.43%	4.95%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	\$690.1M	3,344	1.40%	0.09%
W	W/LWAL+CDL/H:2/RES	\$564.6M	28,710	1.14%	0.79%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	\$450.1M	4,336	0.91%	0.12%

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