Mini Project on Power BI

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DATA U
CREATING TOMORROW'S DATA LEADERS, TODAY

Project Background

ABC NGO plans to share its yearly report to other stakeholder through its website. It has several initiatives and indicators that need to be tracked and reported when new assessment is made. One of this initiatives is to oversea **Vulnerability Index** of a country. This program creates **4 Vulnerable indexes that each index has 4 statuses**. All data is collected at the commune level.
The 4 indexes are : **Storm Index, Flood Index, Drought Index, and Composite Index**
and the result from each commune of each index will be classified into:
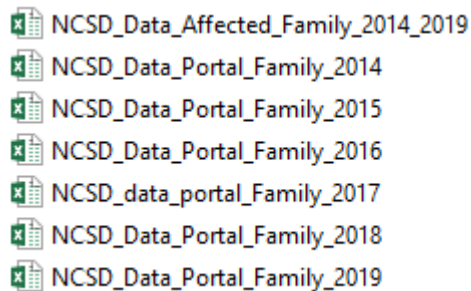
■ High
■ Quite
■ Less
■ Least

After inviting all potential IT Development team, all teams have proposed to delivered it
solution as following:
- Report & Visualization: PowerBI
- Data Input Form : using ….. (as decided by each team)

Mini – Project part 1

Data Source

The project owner wants to see the number of family affected by these VI index. So , it prepare more data set called : family affected by VI index in these files.

NCSD_Data_Affected_Family_2014_2019
NCSD_Data_Portal_Family_2014
NCSD_Data_Portal_Family_2015
NCSD_Data_Portal_Family_2016
NCSD_data_portal_Family_2017
NCSD_Data_Portal_Family_2018
NCSD_Data_Portal_Family_2019
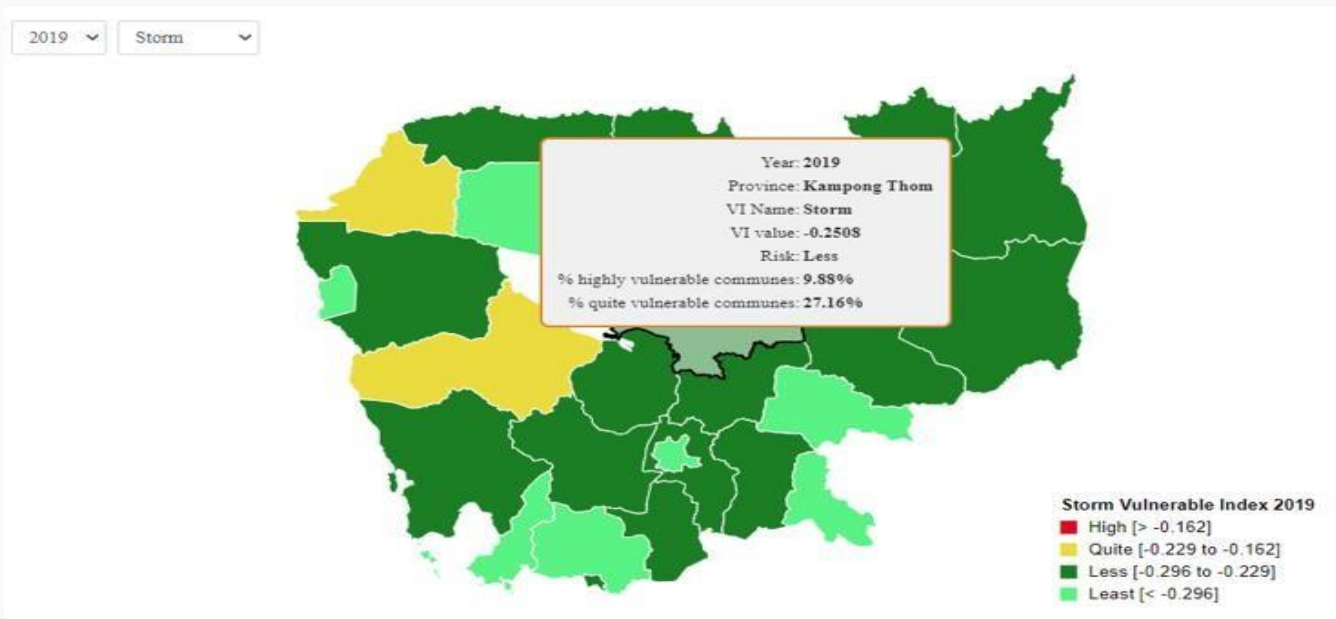
Here are more tricks to work on this project

1. Tooltip
2. Toggle Button
3. Page Navigator
4. Multiple languages

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Visualization 1: Vulnerability Index

Main View : Show the overall Index status by province in each year.
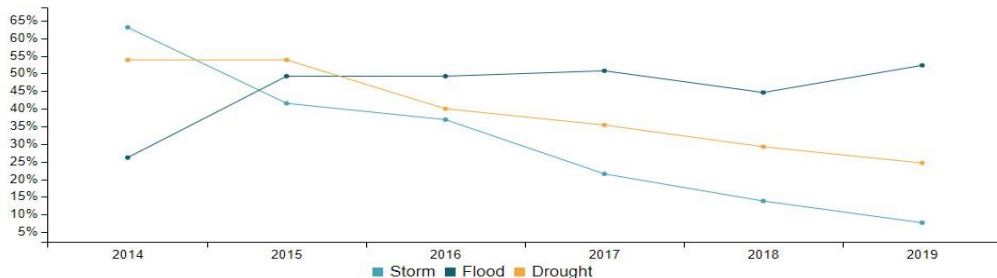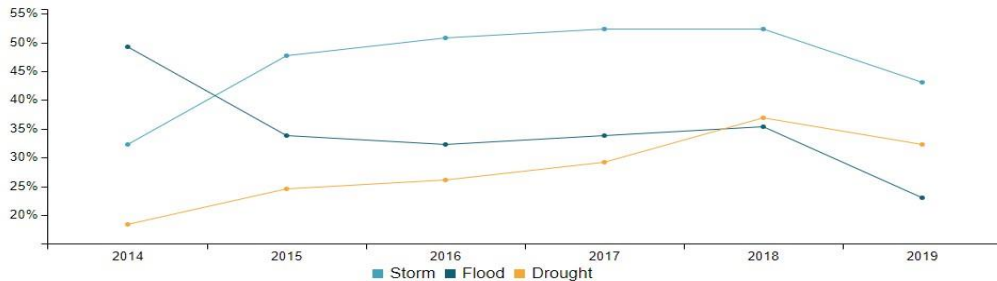There are 2 filters in this page: Year, and Vulnerable Indexes

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Visualization 2: Percentage of vulnerable communes by Province

Percentage of vulnerable communes per province

Select Province

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum
0	National

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Visualization 3: Percentage of vulnerable communes by Year

Percentage of vulnerable communes per Year

Select Year

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum
0	National

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Visualization 4: count of vulnerable communes by Year

Top provinces that ranked highly and quite vulnerable to climate hazards in

	Composite	Flood	Storm	Drought
Highly vulnerable	Ratanak Kiri (1)	Ratanak Kiri (1)	Pursat (1)	Preah Vihear (1)
	Stung Treng (2)	Stung Treng (2)	Banteay Meanchey (2)	Stung Treng (2)
	Otdar Meanchey (3)	Otdar Meanchey (3)	Preah Vihear (3)	Ratanak Kiri (3)
	Banteay Meanchey (4)	Preah Vihear (4)	Battambang (4)	Otdar Meanchey (4)
Quite vulnerable	Preah Vihear (5)	Banteay Meanchey (5)	Takeo (5)	Banteay Meanchey (5)
	Pailin (6)	Pailin (6)	Stung Treng (6)	Kratie (6)
	Svay Rieng (7)	Svay Rieng (7)	Kratie (7)	Pursat (7)
	Kampong Thom (8)	Siem Reap (8)	Kampong Chhnang (8)	Kampong Chhnang (8)
	Siem Reap (9)	Kampong Thom (9)	Kampong Thom (9)	Kampong Thom (9)

Select Year

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum

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Visualization 5: Commune level vulnerability index

Select Year   Select VI Index

Year: **2019**
Province: **Mondul Kiri**
Commune: **Pu Chrey**
VI Name: **Storm**
VI value: **-0.2667**
Risk: **Less**

Storm Vulnerable Index 2019
- High [> -0.162]
- Quite [-0.229 to -0.162]
- Less [-0.296 to -0.229]
- Least [< -0.296]

	VI Index
	Storm
	Flood
	Drought
	Composite

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum

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Visualization 6: Commune level vulnerability index

Select Year

Select VI Index

Province	District	Commune	Storm VI	Rank	Flood VI	Rank	Drought VI	Rank	Composite VI	Rank
Banteay Meanchey	Ou Chrov	Souphi	-0.1895	15	-0.1517	23	-0.4682	44	-0.1456	22
Banteay Meanchey	Phnum Srok	Spean Sraeng	-0.1666	21	-0.9396	8	-1.2507	17	-0.9882	7
Banteay Meanchey	Phnum Srok	Srah Chik	-0.1532	31	2.1541	62	-0.4145	46	2.2041	63
Banteay Meanchey	Mongkol Borei	Srah Reang	-0.0972	59	0.4621	51	-0.3166	53	0.5724	54
Banteay Meanchey	Svay Chek	Svay Chek	-0.1111	53	0.3259	47	-0.5250	37	0.3081	47
Banteay Meanchey	Svay Chek	Ta Baen	-0.1512	34	-0.1105	25	-0.5064	41	0.0184	29
Banteay Meanchey	Malai	Ta Kong	-0.1006	57	0.4137	49	-0.2404	60	0.4036	48
Banteay Meanchey	Mongkol Borei	Ta Lam	-0.1103	54	0.3730	48	-0.5128	40	0.4832	50
Banteay Meanchey	Svay Chek	Ta Phou	-0.0801	65	0.1142	38	-0.3678	50	0.1185	39
Banteay Meanchey	Preah Netr Preah	Tean Kam	-0.0917	61	0.7020	57	0.9526	65	0.7622	56

VI Index
Storm
Flood
Drought
Composite

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum

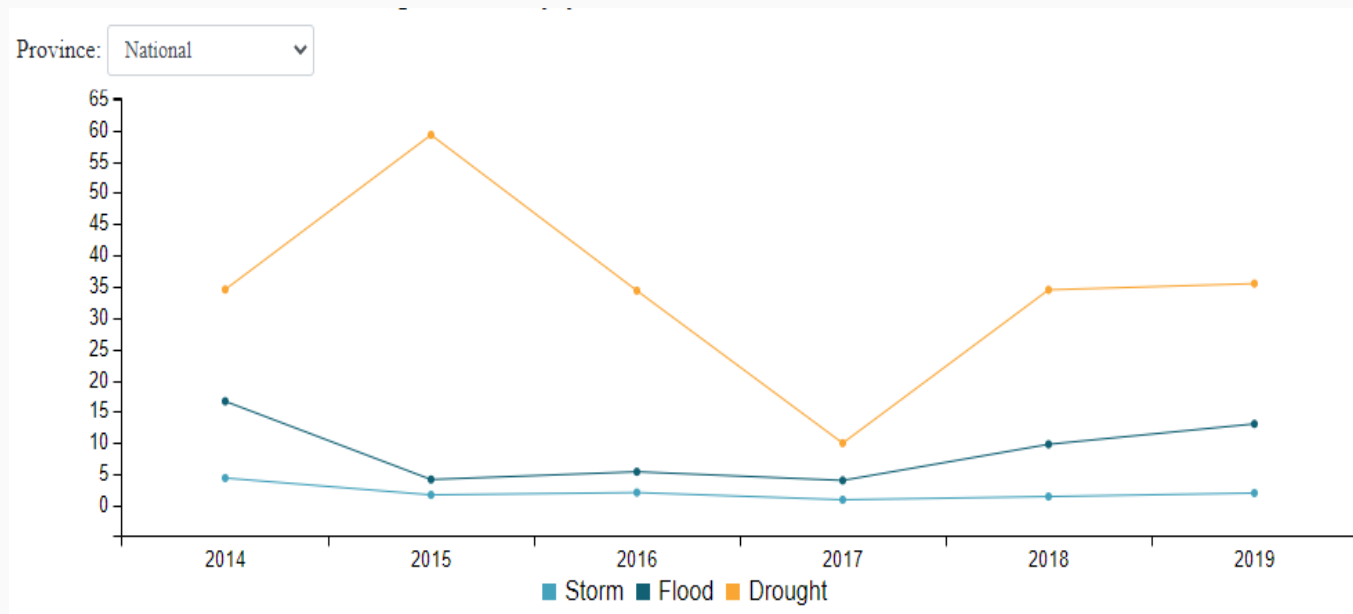## Visualization 7: Household affected by VI Index

Main View : Show the number of family affected (per 1000 families) by each Index by province in each year. There are 2 filters in this page: Year, and Vulnerable Indexes
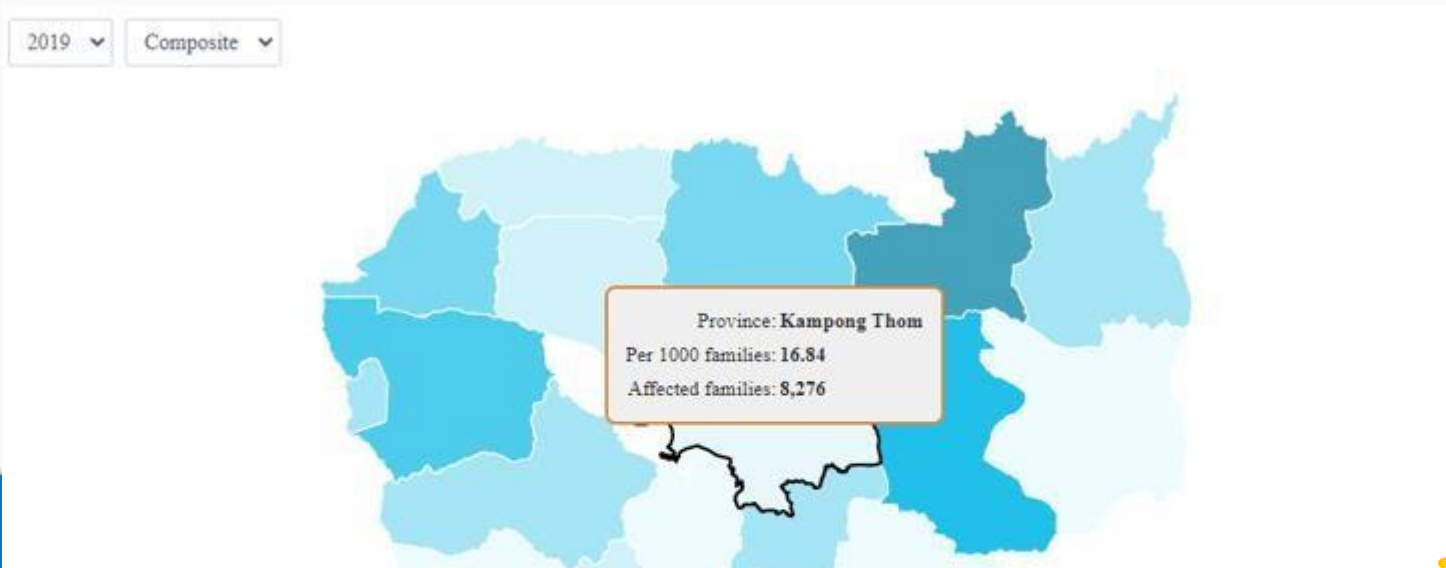
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Visualization 8: Number of families affected by years by Province

Number of families affected per 1000 families
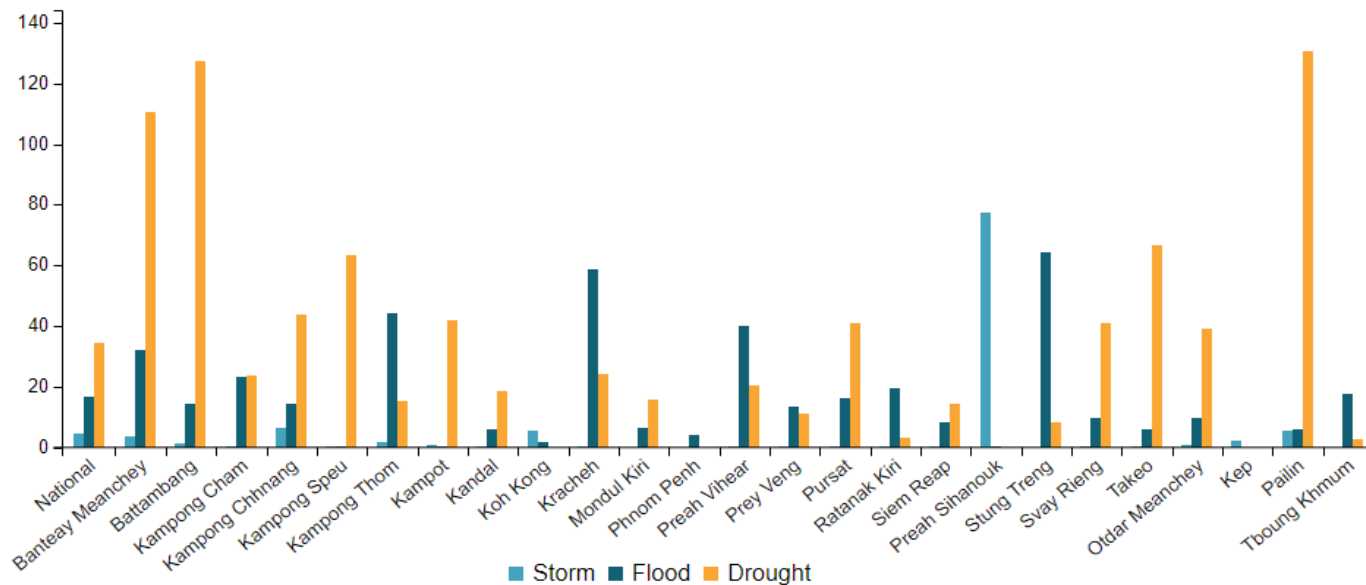

Select Province

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum
0	National

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Visualization 9: Number of families affected by provinces

Number of families affected per 1000 families

PROV_CODE	PROV_NAME
1	Banteay Meanchey
2	Battambang
3	Kampong Cham
4	Kampong Chhnang
5	Kampong Speu
6	Kampong Thom
7	Kampot
8	Kandal
9	Koh Kong
10	Kracheh
11	Mondul Kiri
12	Phnom Penh
13	Preah Vihear
14	Prey Veng
15	Pursat
16	Ratanak Kiri
17	Siem Reap
18	Preah Sihanouk
19	Stung Treng
20	Svay Rieng
21	Takeo
22	Otdar Meanchey
23	Kep
24	Pailin
25	Tboung Khmum
0	National

Visualization 1B: Vulnerability Index

Main View : Show the overall Index status by province in each year.
There are 2 filters in this page: Year, and Vulnerable Indexes
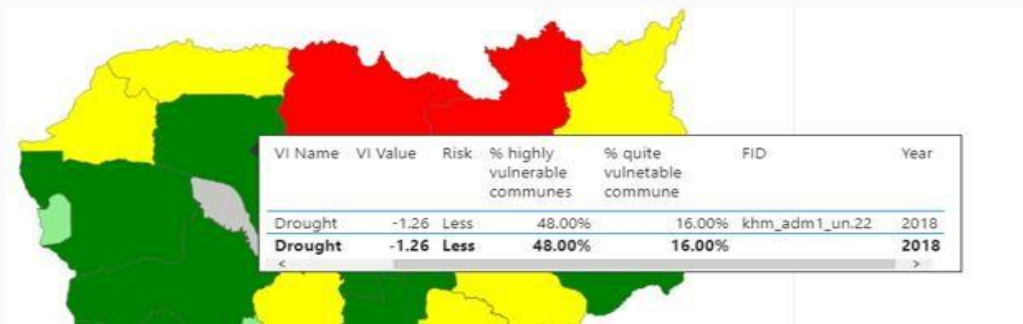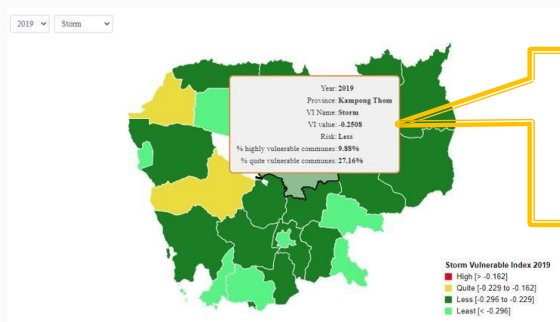
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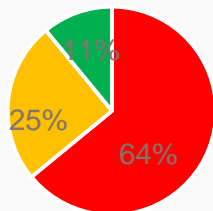## Visualization 2B: Percentage of vulnerable communes by Province

PROV_CODE	PROV_NAME	High	Quite	Less+Least
1	Banteay Meanchey	58%	12%	30%
2	Battambang	57%	29%	14%
3	Kampong Cham	2%	2%	96%
4	Kampong Chhnang	25%	34%	41%
5	Kampong Speu	47%	33%	20%
6	Kampong Thom	52%	20%	28%
7	Kampot	20%	38%	42%
8	Kandal	31%	24%	45%
9	Koh Kong	41%	27%	32%
10	Kracheh	59%	11%	30%
11	Mondul Kiri	41%	7%	52%
12	Phnom Penh	54%	29%	17%
13	Preah Vihear	18%	16%	66%
14	Prey Veng	68%	21%	11%
15	Pursat	19%	31%	50%
16	Ratanak Kiri	25%	30%	45%
17	Siem Reap	24%	40%	36%
18	Preah Sihanouk	23%	5%	72%
19	Stung Treng	19%	29%	52%
20	Svay Rieng	27%	3%	70%
21	Takeo	49%	32%	19%
22	Otdar Meanchey	20%	40%	40%
23	Kep	51%	23%	26%
24	Pailin	67%	38%	-5%
25	Tboung Khmum	8%	29%	63%
0	National	22%	16%	62%

This slicer only filter Table, not the 2 line charts
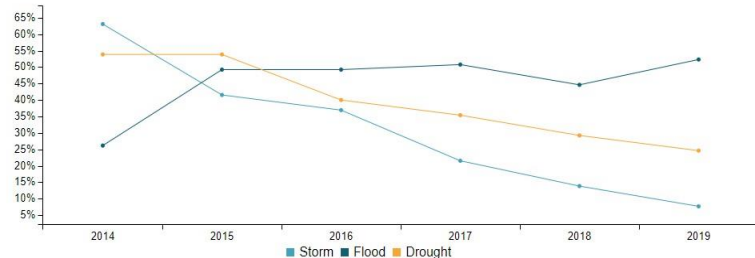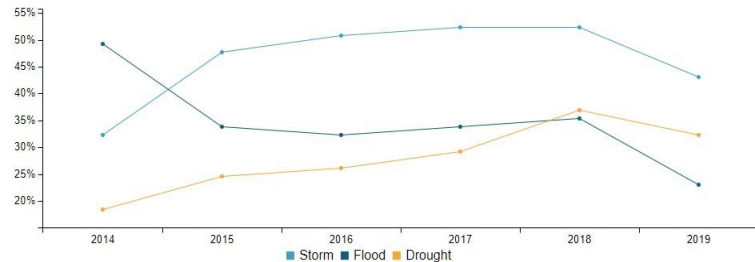
vs %

Toggle between Number of Commune or In %

Province Name

11%

25%

64%

■ Hight ■ Quite ■ Less + Least

Highly vulnerable

■ Storm ■ Flood ■ Drought

Quite vulnerable

■ Storm ■ Flood ■ Drought
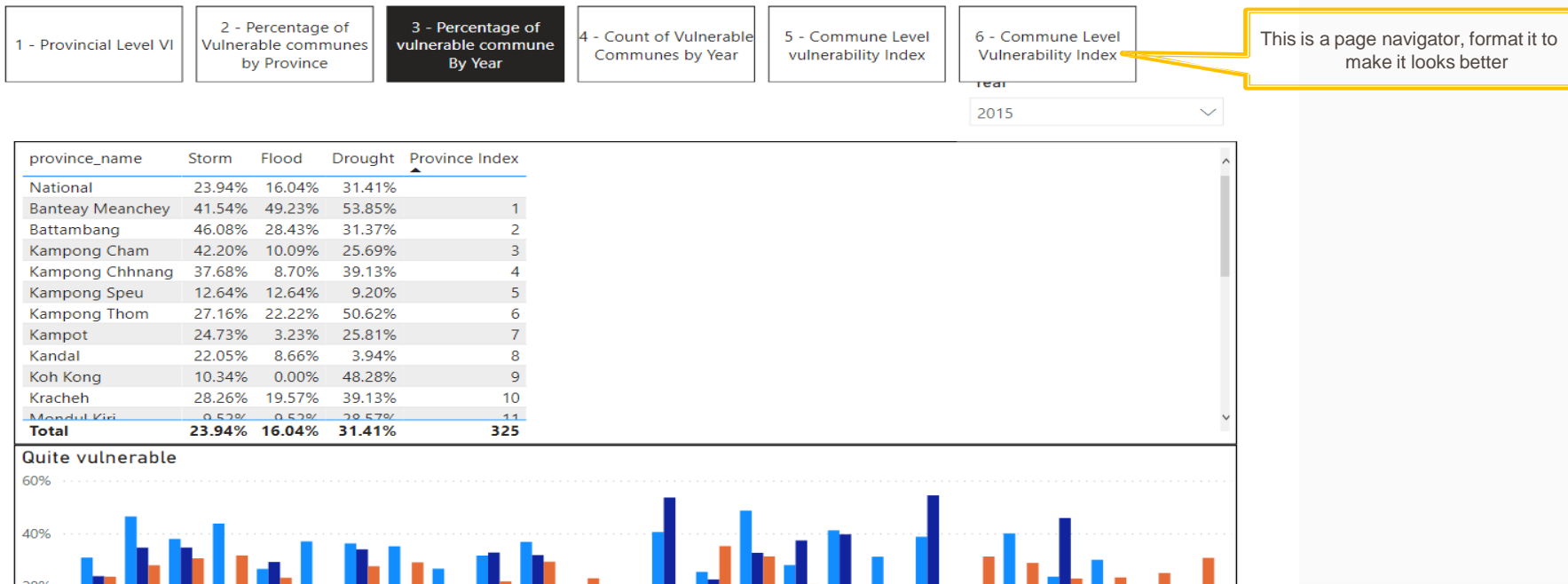
Visualization 1: Vulnerability Index

Enhancement 2: switch between English & Khmer

Create 1 toggle button to that allow user to switch between language , you can create for all reports or at least 1 report

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Extra 2: Visualization 10 : Showing top 10 vulnerable Communes

Select			
Province	Year	VI Index	

Top 10 Communes	Selected Year	Previous Year	This year Rank	Previous Year Rank
Commune 1	2.29	0.29	1332	1199
Commune 2	1.3	0.2	37	302
Commune 3	-0.7	2.3	1570	935
Commune 4	4.98	2.56	1084	800
Commune 5	0.98	0.4	491	546
Commune 6	1.37	-1.54	1146	415
Commune 7	2.74	4.07	729	359
Commune 8	2.87	-1.02	1170	1524
Commune 9	0.57	4.85	1414	1494
Commune 10	1.3	3.67	1536	876
AVG of Top 10 Commune	-1.2	0.94		
AVG of the rest of the commune	4.29	3.64		
National	2.41	1.22		

To 10 Vulnerables Commune in Province name
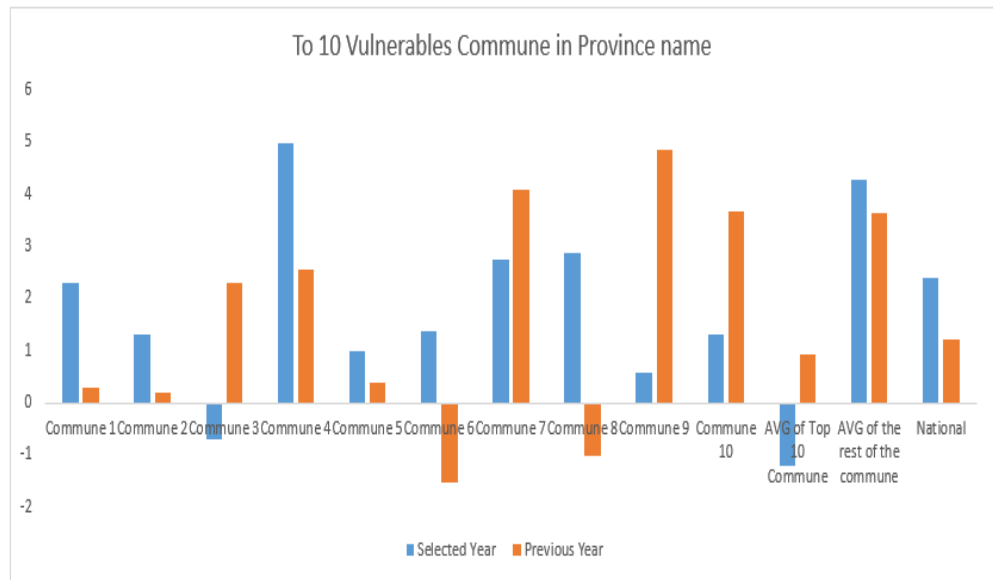
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Extra 3: Visualization 11 : Communes classified in high/quite by VI

Show number of communes that have received high / Quite more then once

Select VI

ROV_COD	PROV_NAME	Number of repeated status	High	Quite	#Hight	#Quite
1	Banteay Meanchey	2 times	49%	8%	16	5
1	Banteay Meanchey	3 times	22%	14%	15	34
1	Banteay Meanchey	4 times	18%	18%	40	24
1	Banteay Meanchey	5 times	42%	34%	4	6
2	Battambang	2 times	32%	7%	27	21
3	Kampong Cham	3 times	61%	22%	35	32
4	Kampong Chhnang	4 times	70%	26%	37	17
5	Kampong Speu	5 times	53%	34%	24	35
6	Kampong Thom	2 times	58%	20%	6	22
7	Kampot	3 times	69%	33%	35	39
8	Kandal	4 times	8%	10%	6	17
9	Koh Kong	5 times	52%	20%	9	14
10	Kracheh	2 times	25%	3%	26	39
11	Mondul Kiri	3 times	36%	19%	17	16
12	Phnom Penh	4 times	53%	14%	13	27
13	Preah Vihear	5 times	7%	27%	2	40
14	Prey Veng	2 times	13%	32%	24	36
15	Pursat	3 times	57%	4%	12	31
16	Ratanak Kiri	4 times	53%	17%	29	20
17	Siem Reap	5 times	26%	14%	17	21
18	Preah Sihanouk	2 times	48%	22%	10	7
19	Stung Treng	3 times	50%	18%	35	35
20	Svay Rieng	4 times	8%	40%	11	9
21	Takeo	5 times	36%	7%	39	5
22	Otdar Meanchey	2 times	43%	5%	30	14
23	Kep	3 times	54%	6%	9	26
24	Pailin	4 times	4%	3%	21	18
25	Tboung Khmum	5 times	45%	29%	39	11
0	National	3 times	22%	18%	16	24

Click any row, will filter the commune list table

Province	List of commune	VI Year 1	VI Year 2	VI Year 3	VI Year 4	Rank Year 1	Rank Year 2	Rank Year 3	Rank Year 4
Banteay Meanchey	Commune 1	2.82	0.65	-1.1	4.13	7	9	21	28
Banteay Meanchey	Commune 2	0.07	-0.37	1.73	-1.12	32	5	35	26
Banteay Meanchey	Commune 3	4.64	-1.88	-0.55	-1.81	33	18	5	13
Banteay Meanchey	Commune 4	-1.7	2.82	1.74	1.17	25	26	35	33
Banteay Meanchey	Commune 5	-0.07	3.14	0.37	1.15	17	37	13	34
Banteay Meanchey	Commune 6	3.88	2.02	-1.82	4.05	2	12	39	16
Banteay Meanchey	Commune 7	-0.48	4.84	-0.82	-1.67	32	31	15	36
Banteay Meanchey	Commune 8	3.54	4.26	4.45	-0.71	2	17	37	35
Banteay Meanchey	Commune 9	2.16	-1.52	1.07	2.76	18	16	14	16
Banteay Meanchey	Commune 10	3.09	1.49	4.48	1.83	9	8	21	26

Extra 4: Visualization 12 : Communes classified in high/quite by Store/Flood/Drought VI

Show number of communes that have received high / Quite more then once across all VI

ROV_COD	PROV_NAME	Number of repeated status	High	Quite	#Hight	#Quite
1	Banteay Meanchey	2 times	49%	8%	16	5
1	Banteay Meanchey	3 times	22%	14%	15	34
1	Banteay Meanchey	4 times	18%	18%	40	24
1	Banteay Meanchey	5 times	42%	34%	4	6
2	Battambang	2 times	32%	7%	27	21
3	Kampong Cham	3 times	61%	22%	35	32
4	Kampong Chhnang	4 times	70%	26%	37	17
5	Kampong Speu	5 times	53%	34%	24	35
6	Kampong Thom	2 times	58%	20%	6	22
7	Kampot	3 times	69%	33%	35	39
8	Kandal	4 times	8%	10%	6	17
9	Koh Kong	5 times	52%	20%	9	14
10	Kracheh	2 times	25%	3%	26	39
11	Mondul Kiri	3 times	36%	19%	17	16
12	Phnom Penh	4 times	53%	14%	13	27
13	Preah Vihear	5 times	7%	27%	2	40
14	Prey Veng	2 times	13%	32%	24	36
15	Pursat	3 times	57%	4%	12	31
16	Ratanak Kiri	4 times	53%	17%	29	20
17	Siem Reap	5 times	26%	14%	17	21
18	Preah Sihanouk	2 times	48%	22%	10	7
19	Stung Treng	3 times	50%	18%	35	35
20	Svay Rieng	4 times	8%	40%	11	9
21	Takeo	5 times	36%	7%	39	5
22	Otdar Meanchey	2 times	43%	5%	30	14
23	Kep	3 times	54%	6%	9	26
24	Pailin	4 times	4%	3%	21	18
25	Tboung Khmer	5 times	45%	29%	39	11
0	National	3 times	22%	18%	16	24

Province	List of commune	#High			#Quite		
		Flood	Storm	Drought	Flood	Storm	Drought
Banteay Meanchey	Commune 1	4	14	35	8	40	25
Banteay Meanchey	Commune 2	2	40	17	31	23	31
Banteay Meanchey	Commune 3	24	29	18	10	27	36
Banteay Meanchey	Commune 4	10	36	24	19	38	40
Banteay Meanchey	Commune 5	29	32	10	33	7	13
Banteay Meanchey	Commune 6	38	13	12	17	24	37
Banteay Meanchey	Commune 7	18	33	25	28	40	32
Banteay Meanchey	Commune 8	7	30	21	7	20	39
Banteay Meanchey	Commune 9	13	29	3	12	19	6
Banteay Meanchey	Commune 10	10	9	15	27	9	23

Click any row, will filter the commune list table