Integrated Vulnerability Assessment Application on the Lebanese Agricultural Sector for Informing Adaptation

Ihab Jnad
Hiam Al-Ashkar
The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD)

إيهاب جناد
هيام الأشقر
المركز العربي لدراسات المناطق الجافه و الأراضي القاحلة (اكساد)

High Level Conference on Climate Change Assessment and Adaptation in the Arab Region – Beirut, Lebanon – 26-28 September 2017

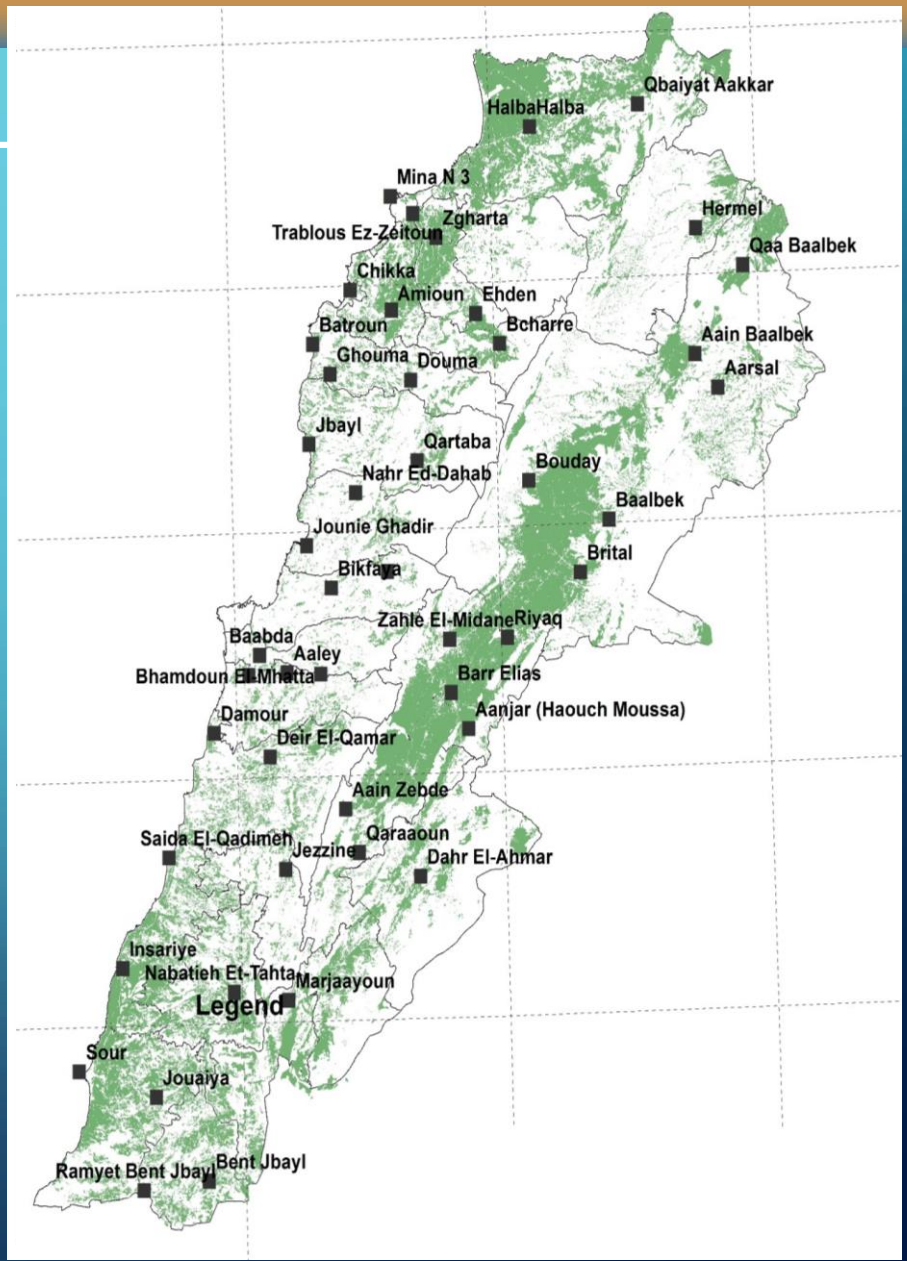
مشروع دراسة حساسية القطاع الزراعي للتغيرات المناخية في الجمهورية اللبنانية

- **الجهات المشاركة في المشروع:** ينفذ هذا المشروع بالتعاون بين اكساد والوكالة الألمانية للتعاون الفني (GIZ)والاسكوا ووزارة الزراعه اللبنانية والمركز الوطني للاستشعار عن بعد في لبنان
- **الهدف من المشروع:** دراسة حساسية القطاع الزراعي في الجمهورية اللبنانية للتغيرات المناخية،

Study Area

Agricultural Class from Landuse L
Map:

- Olive
- Field crops in large areas
- Field crops in large areas
- Open horticulture
- Banana
- Citrus fruit trees
- Deciduous fruit trees
- Protected agriculture
- Vineyards



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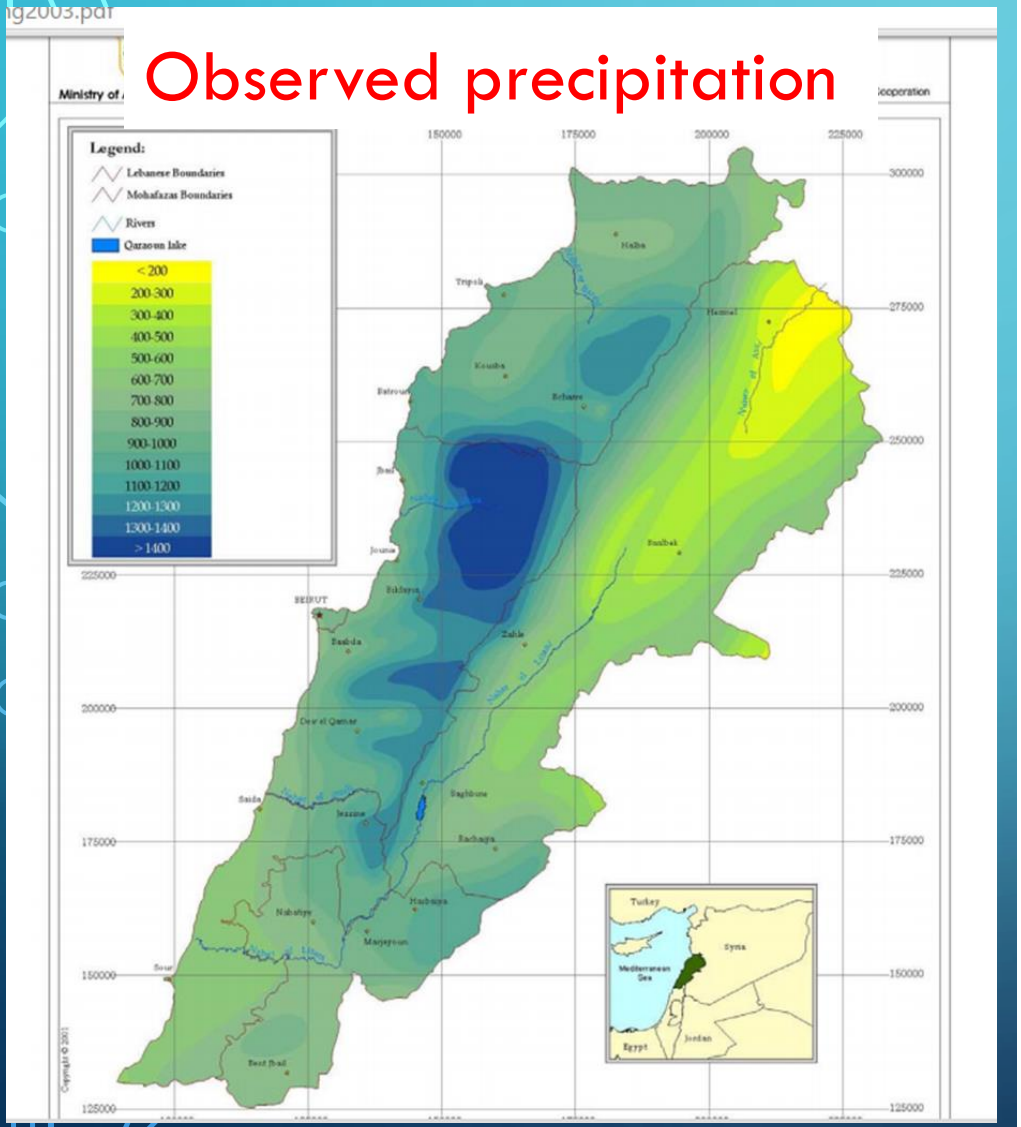
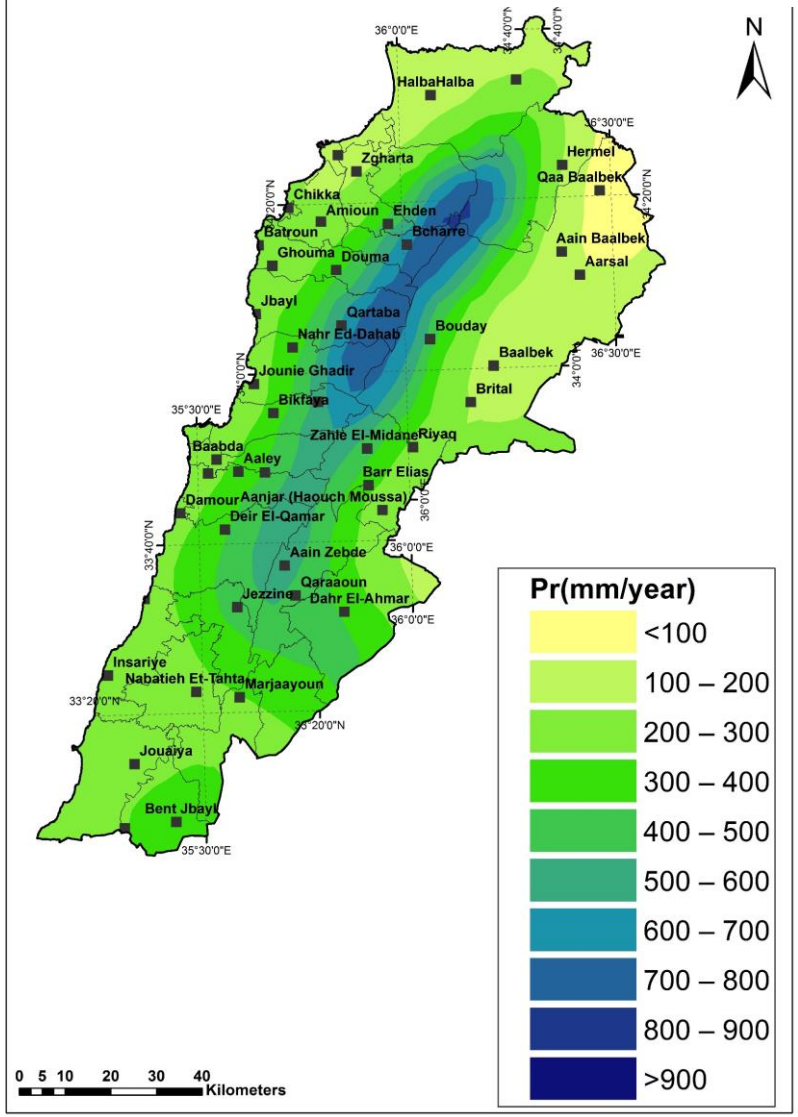
Observed precipitation



EURO- CORDEX (12.5 km resolution)



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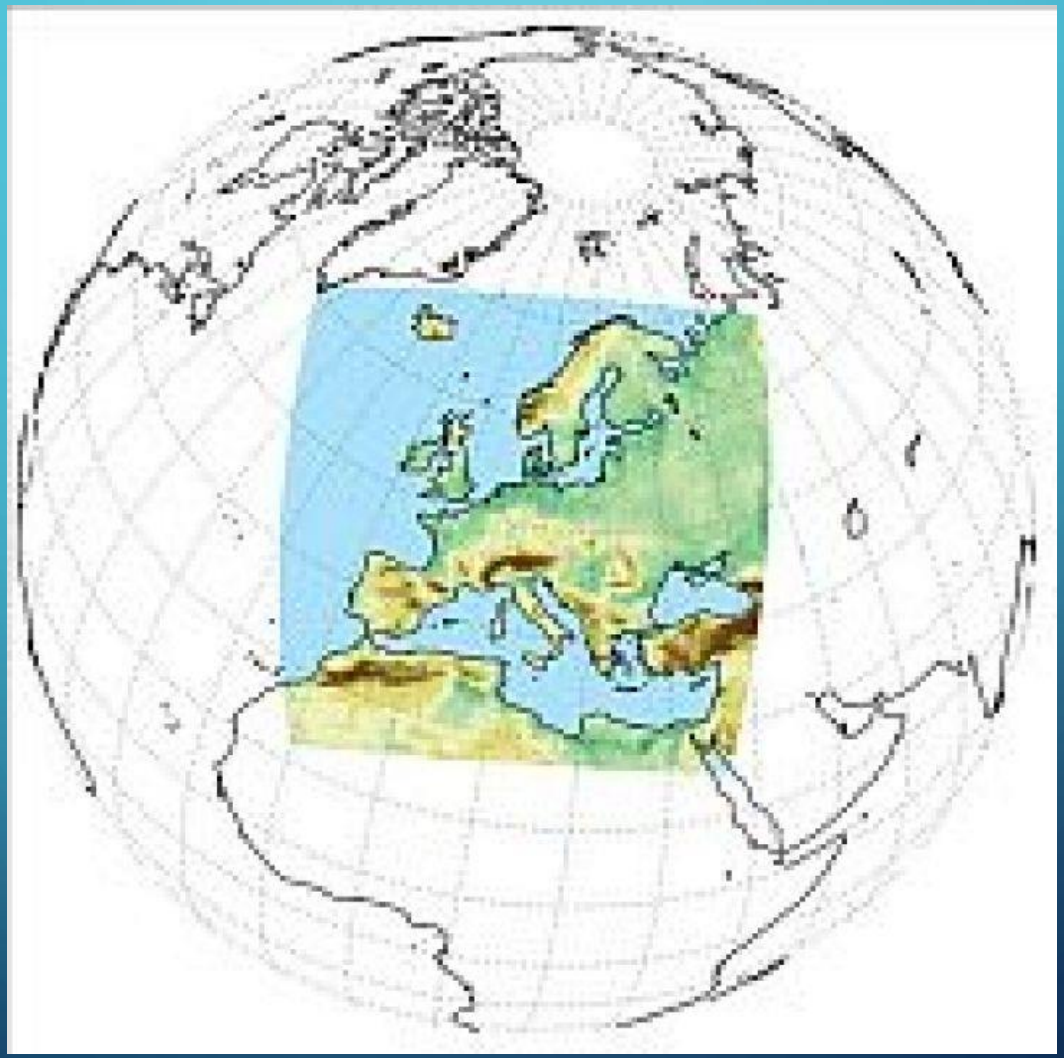
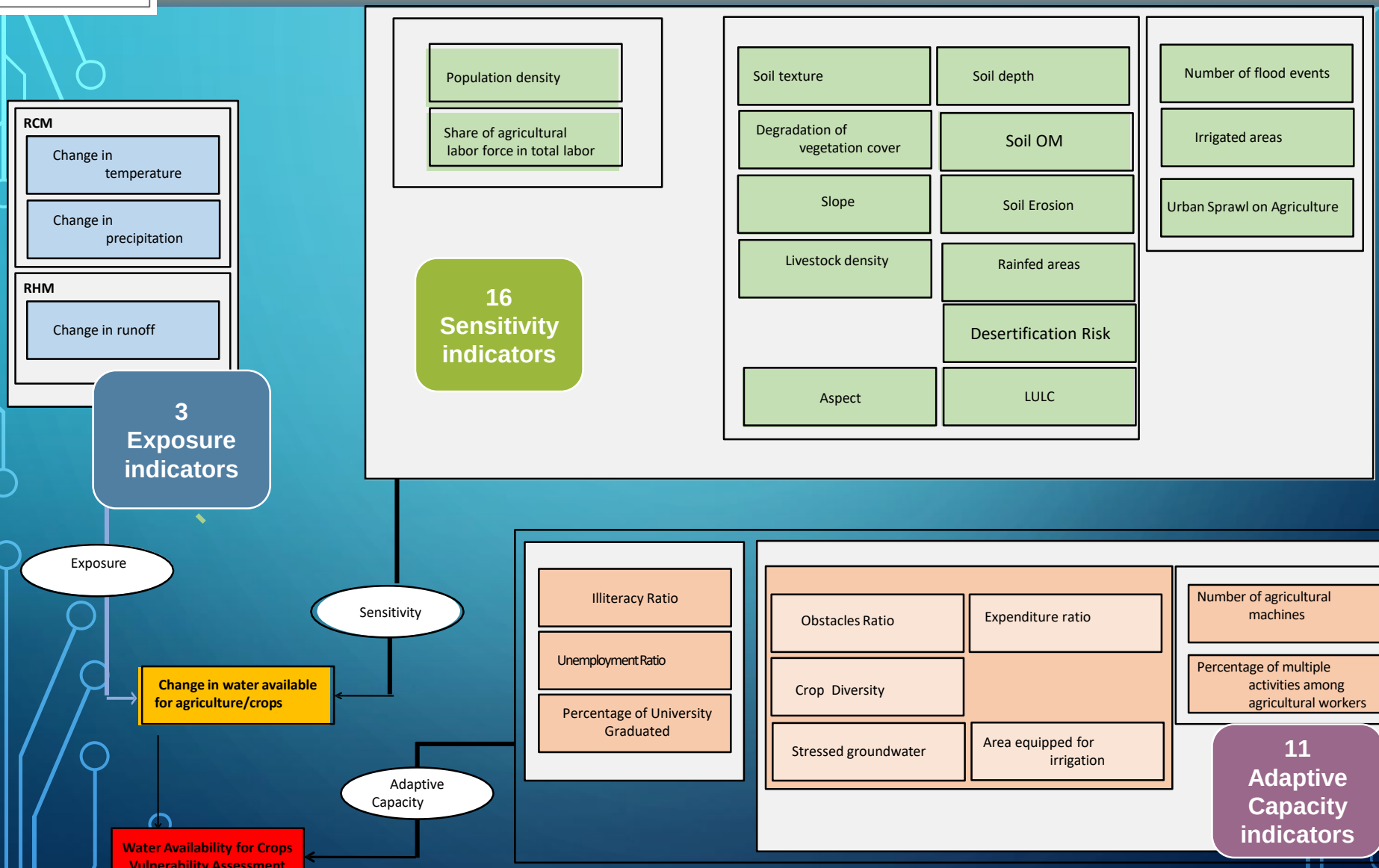
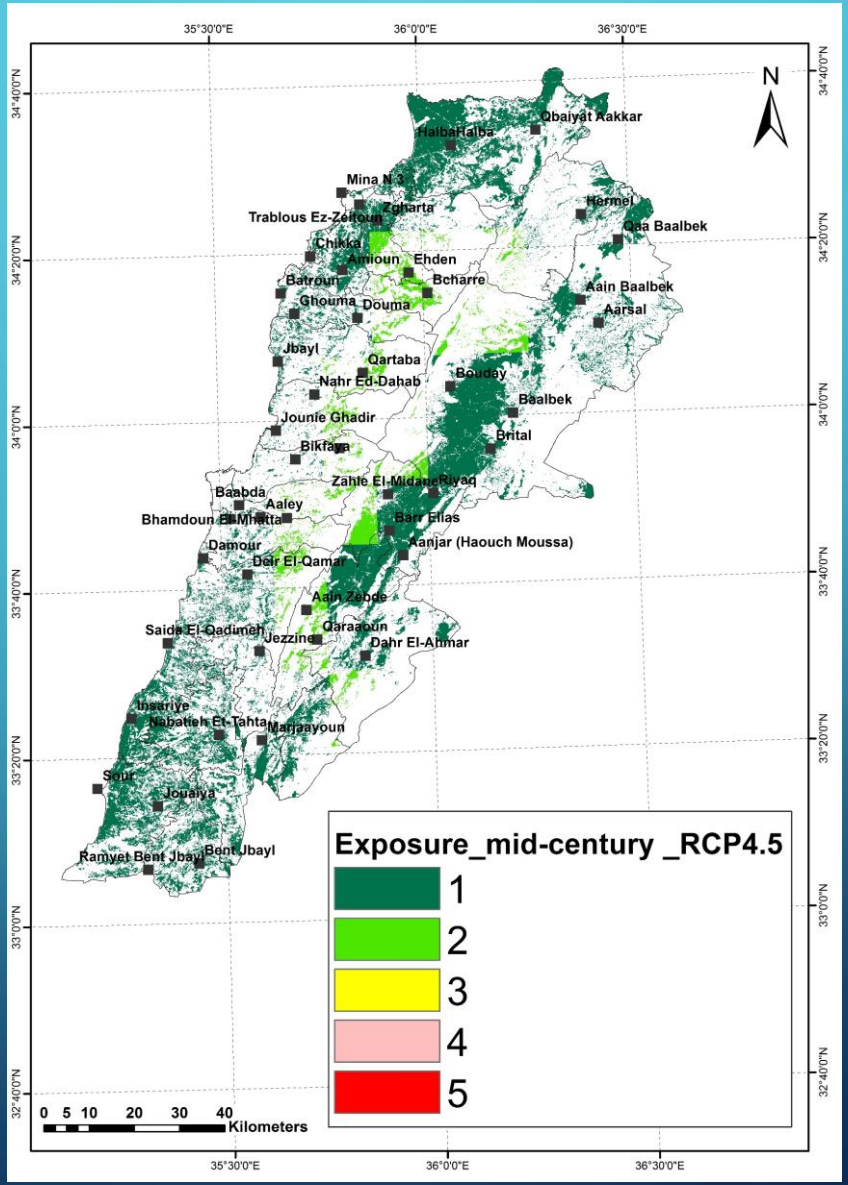
EURO-CORDEX



Impact Chain



Exposure –rcp4.5 Mid-Century



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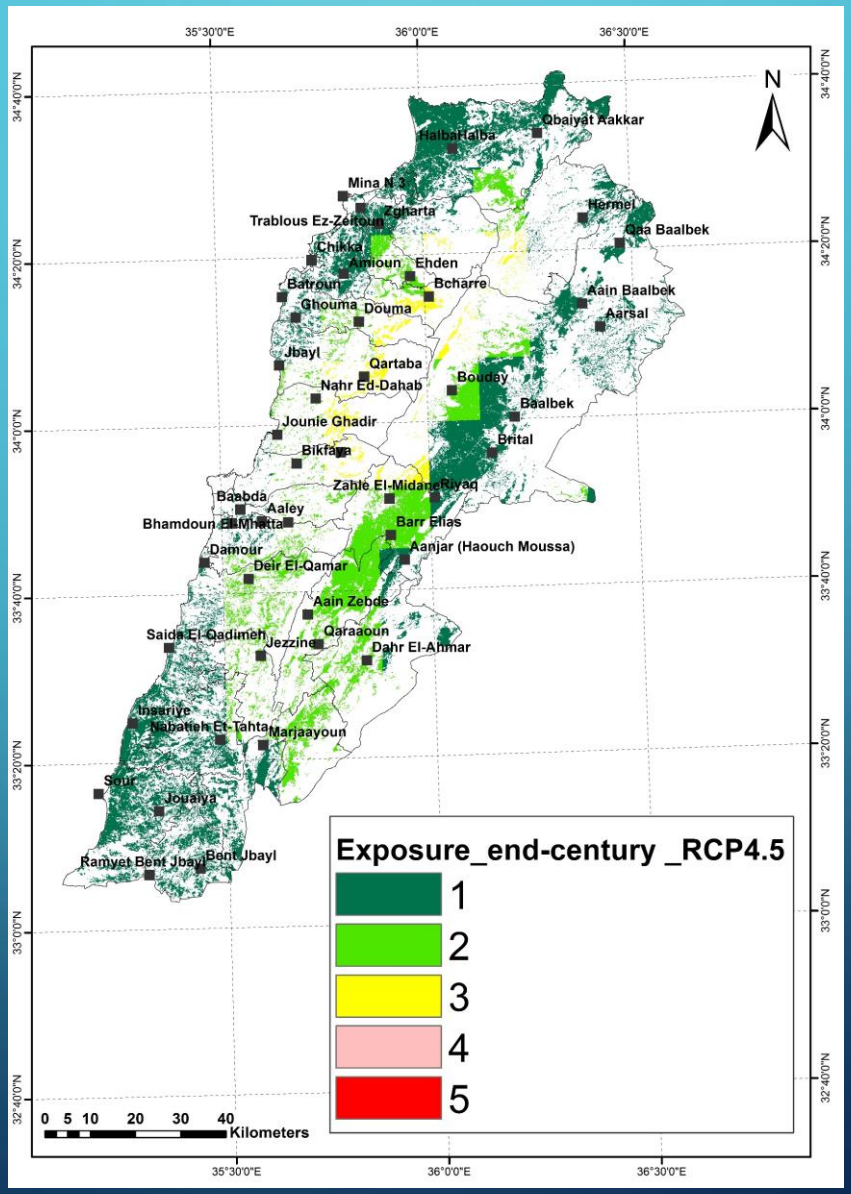
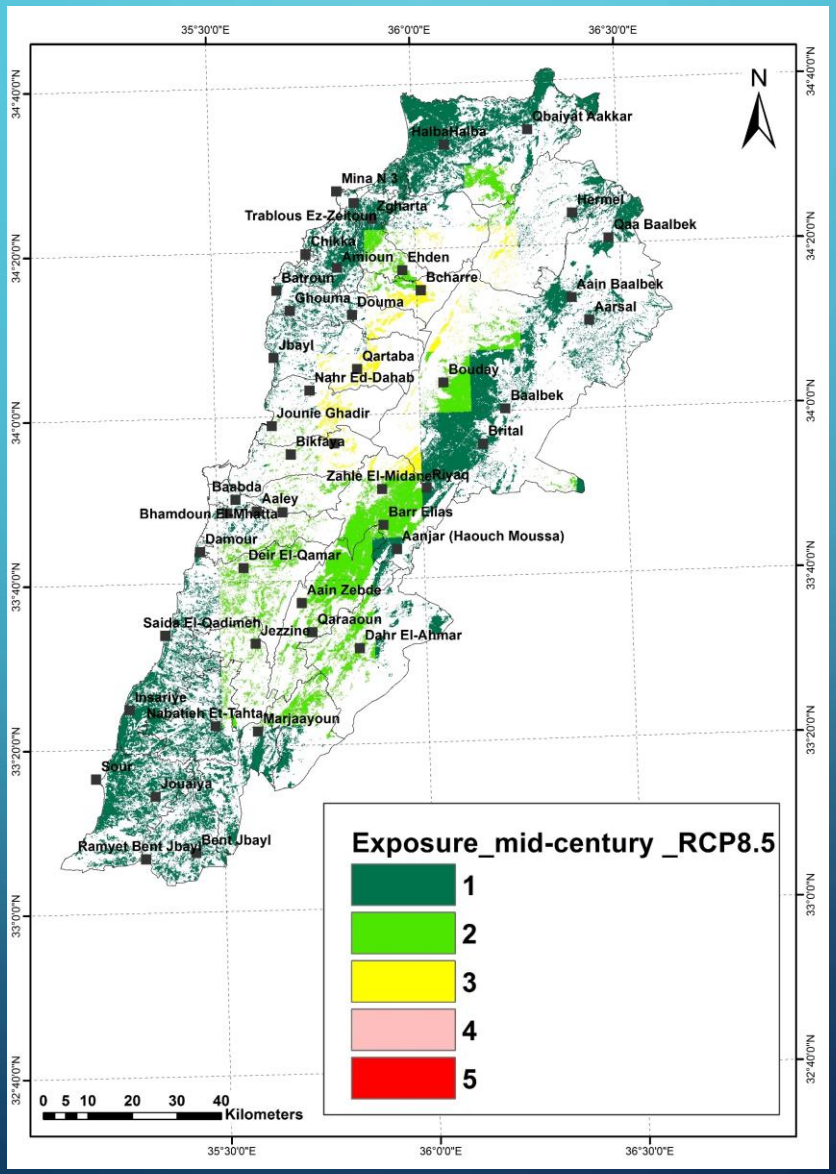
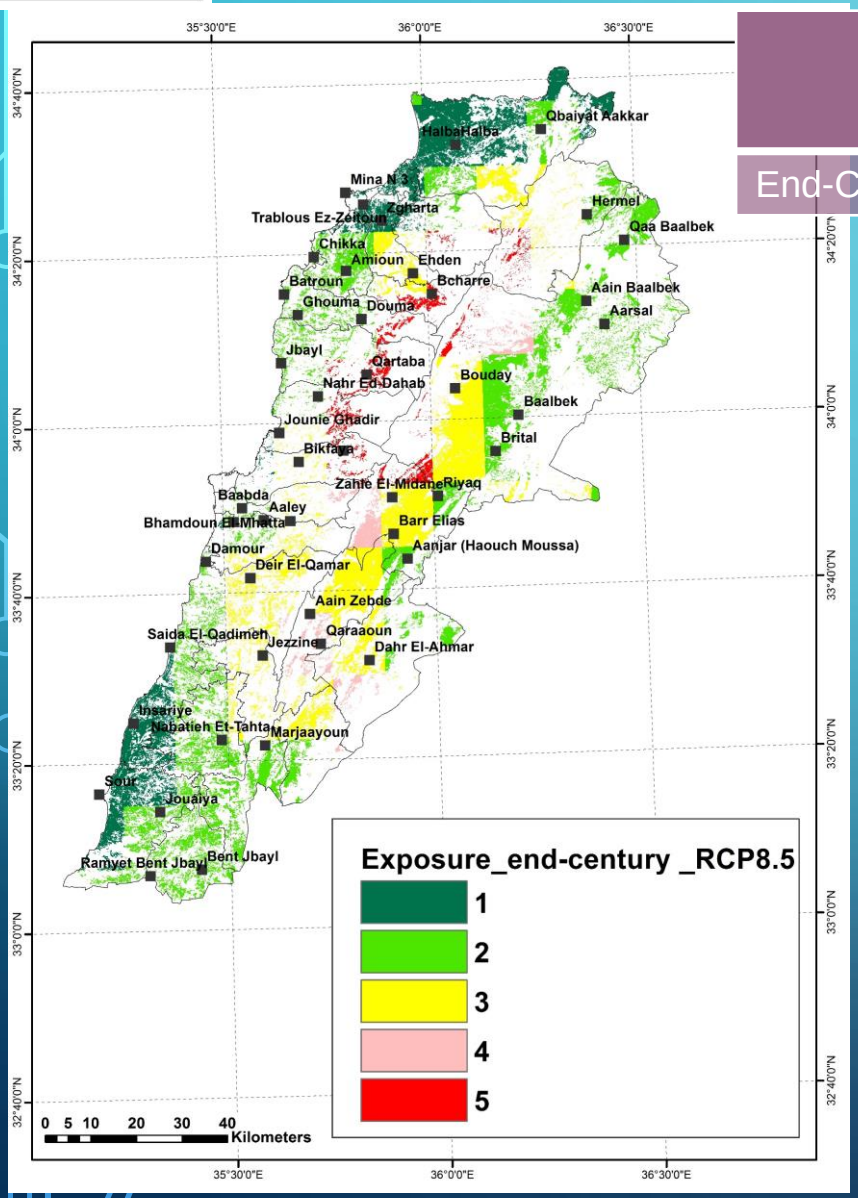
Exposure –rcp4.5 End-Century



Exposure –rcp8.5 Mid-Century



Exposure –rcp8.5 End-Century



Scenario	Percentage of study area		
	Low EX	Moderate EX	High EX
End-Century rcp8.5	57%	27%	16%

CAZA with High Exposure:

- Akkar.
- Zehleh,
- West Bekaa
- Bcharre
- Rachya
- Hasbia.

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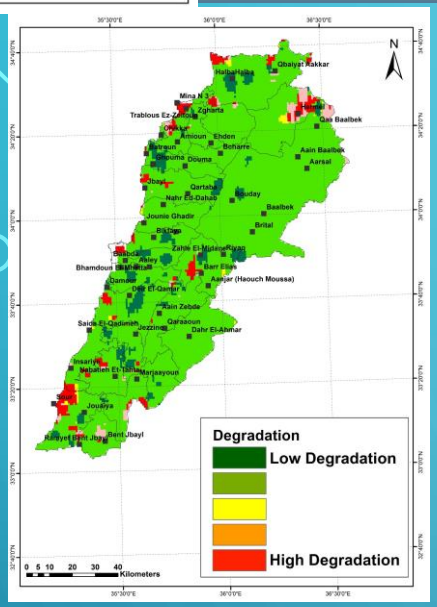
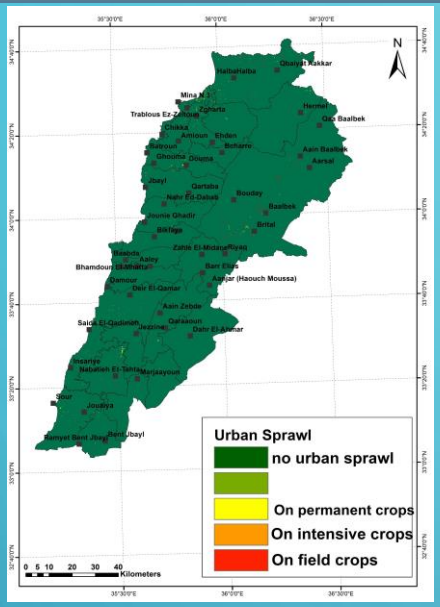
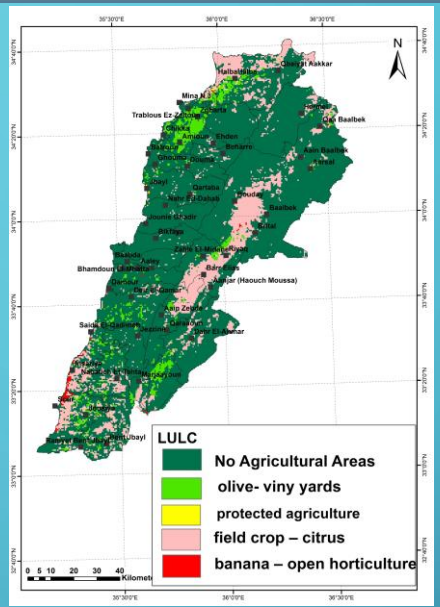
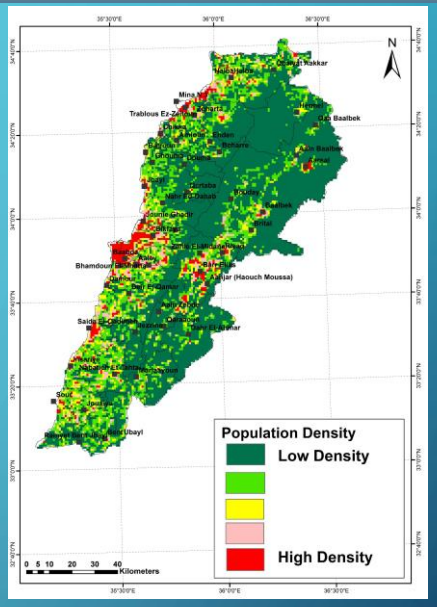
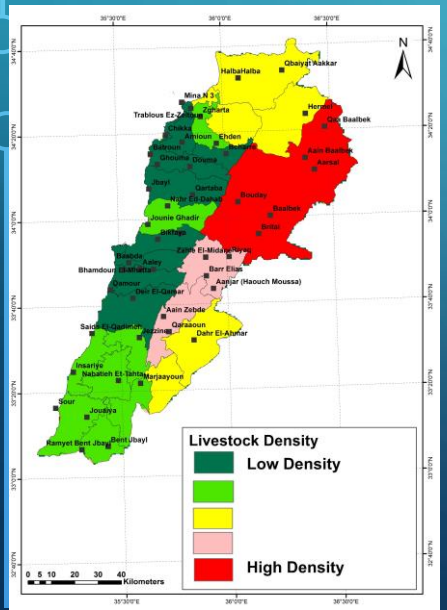
Sensitivity Indicators

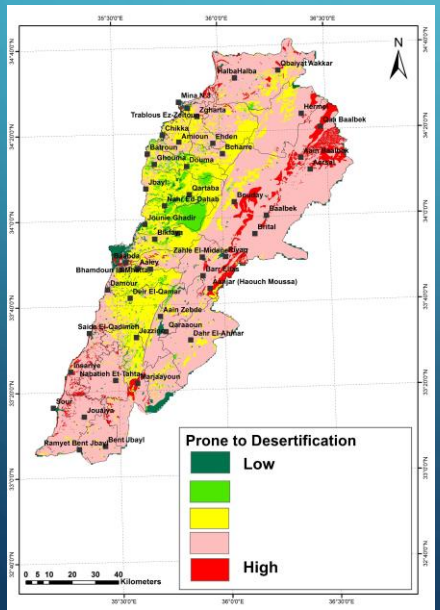


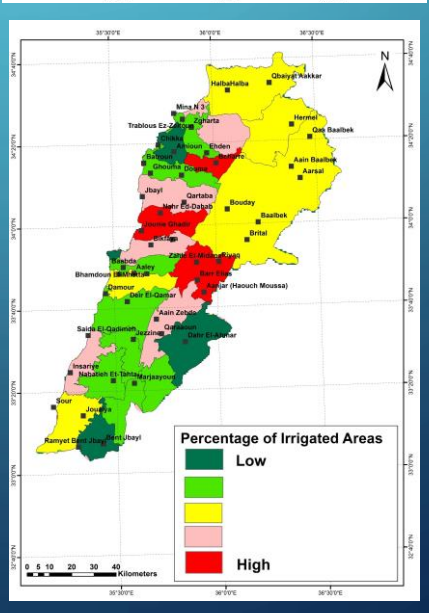


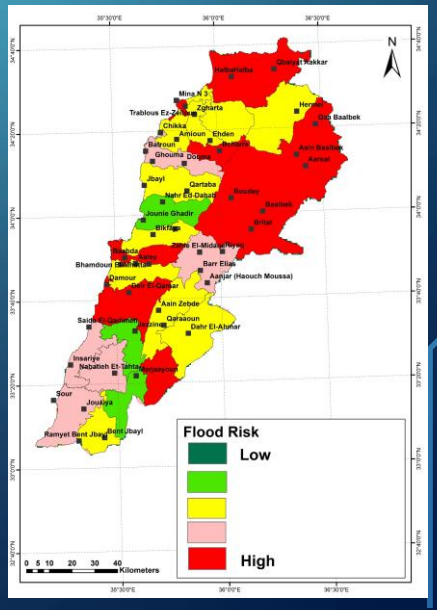












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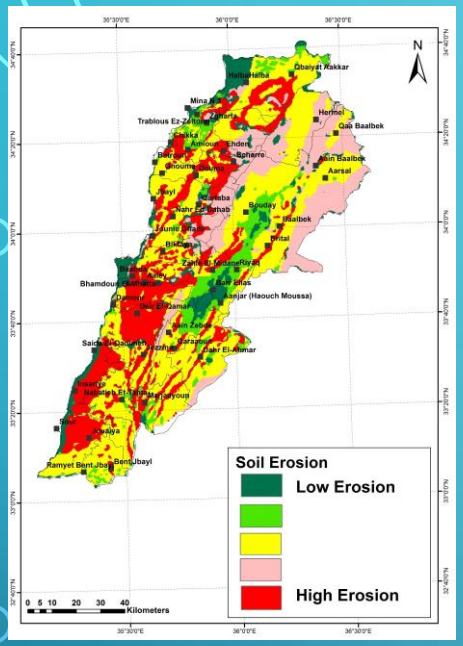
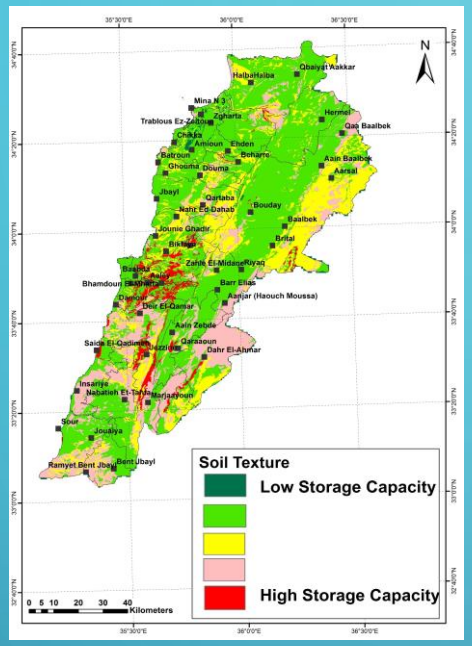
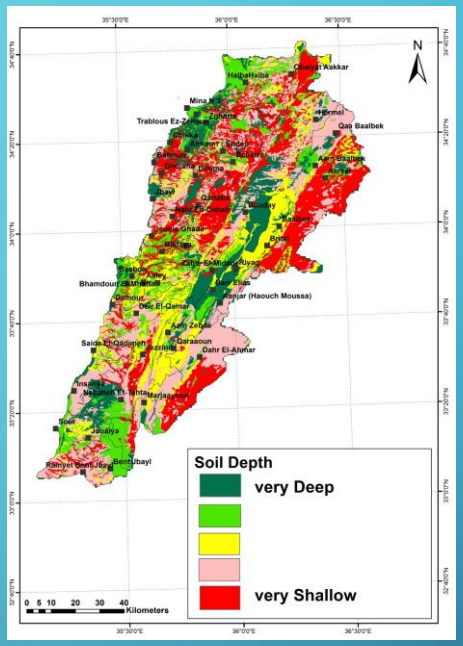
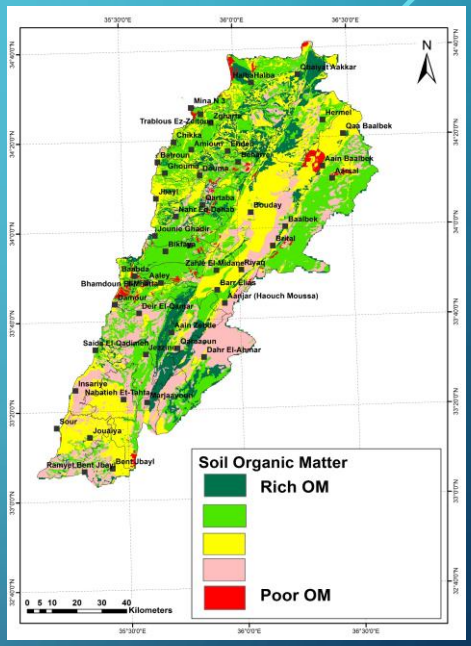
Sensitivity Indicators



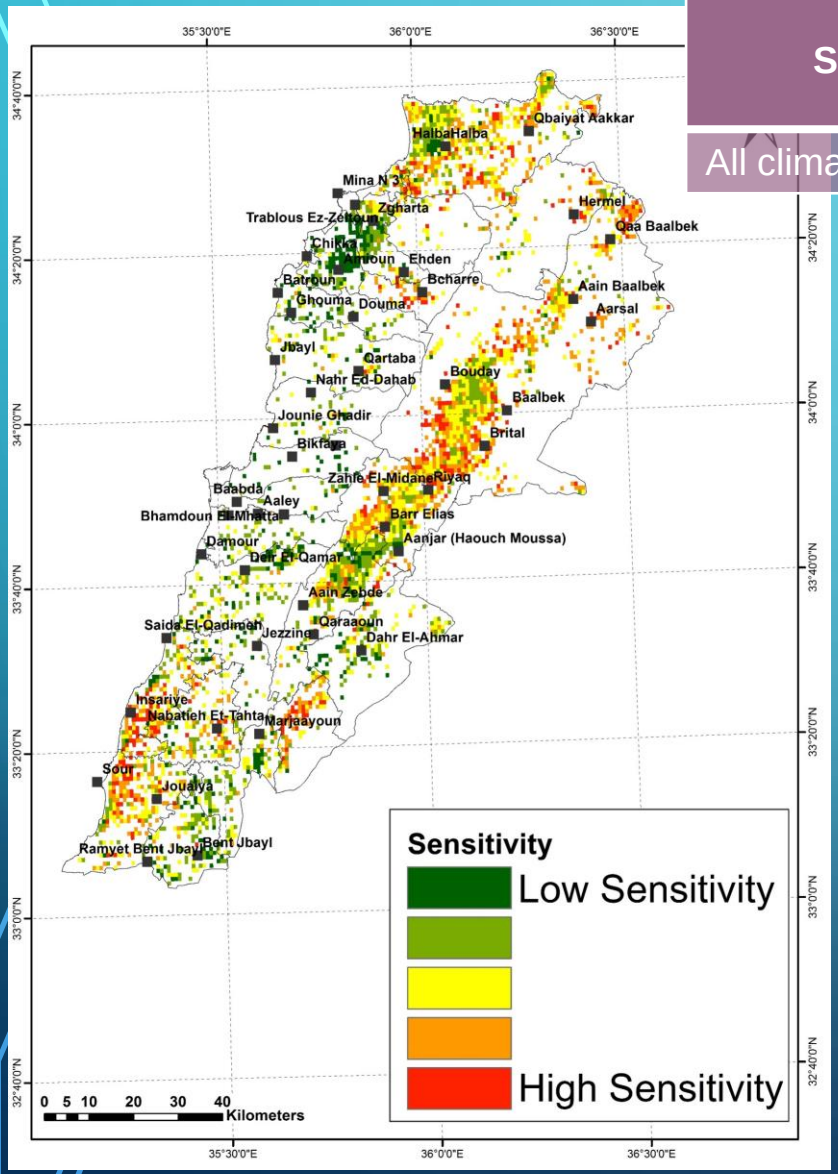






Sensitivity

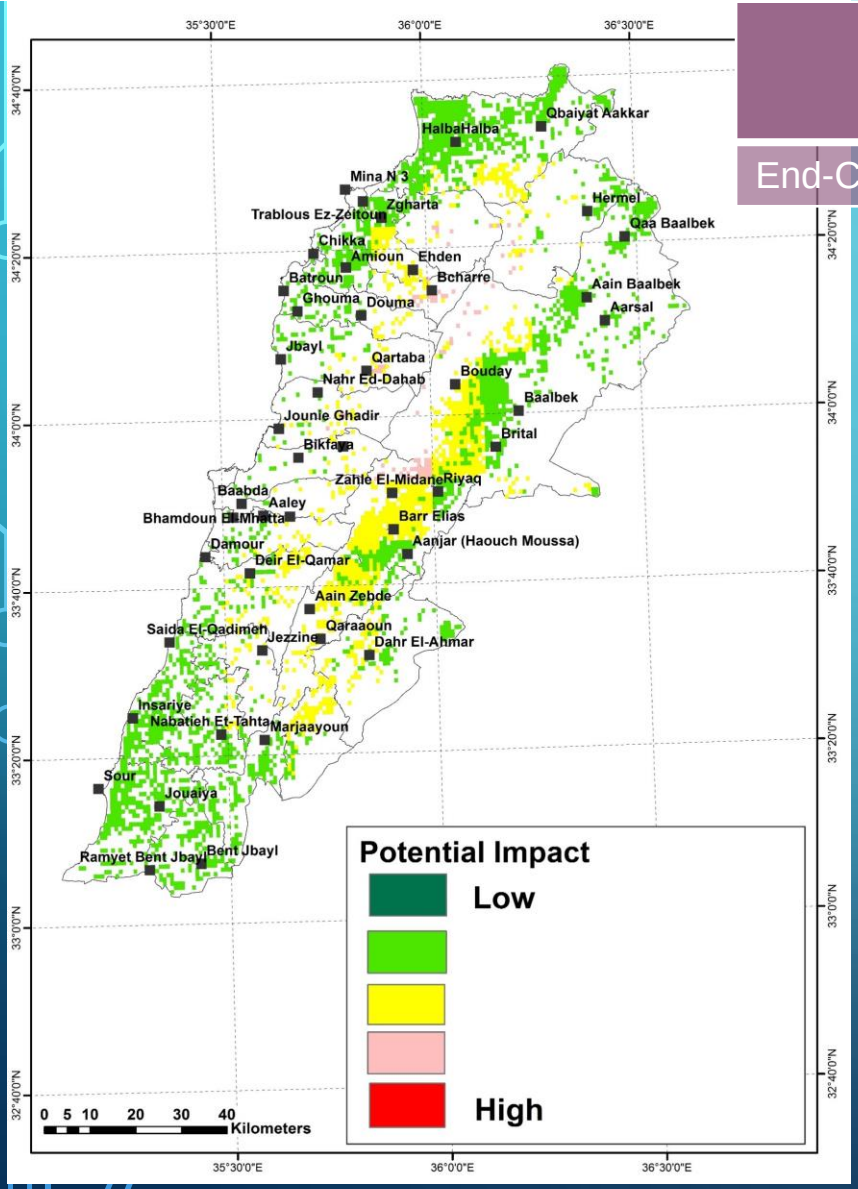
Scenario	Percentage of study area		
	Low SE	Moderate SE	High SE
All climate scenarios	12%	54%	34%



CAZA with High Sensitivity:

- Akkar.
- Zehleh,
- Baalbak
- Sida
- Sour,
- Hasbia.

Potential Impact –rcp8.5 End-Century



Scenario	Percentage of study area		
	Low PI	Moderate PI	High PI
End-Century rcp8.5	30%	55%	15%

CAZA with High PI:

- Akkar.
- Zehleh,
- West Bekaa,
- Hasbia.

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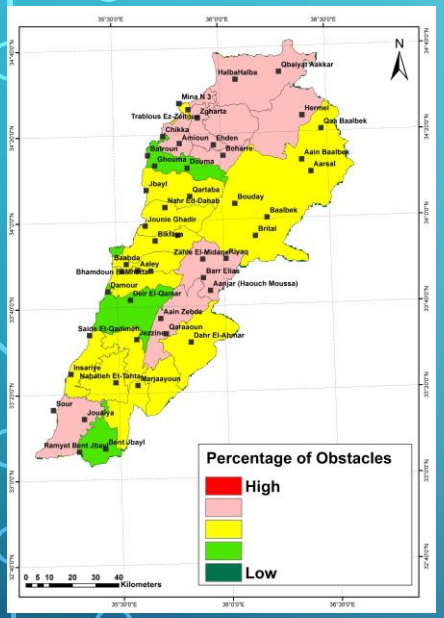
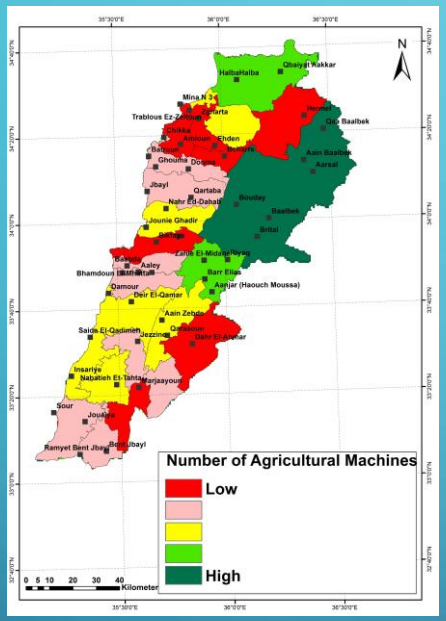
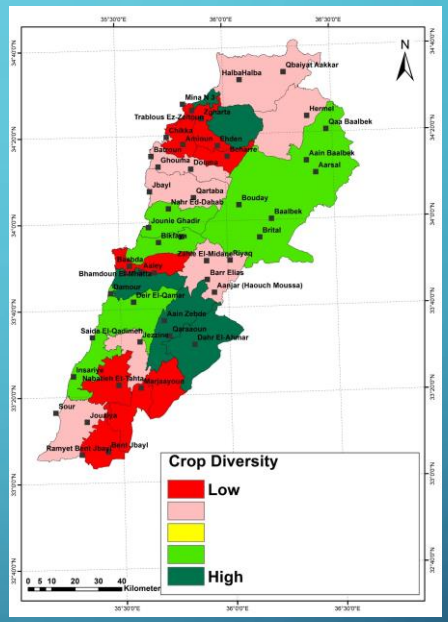
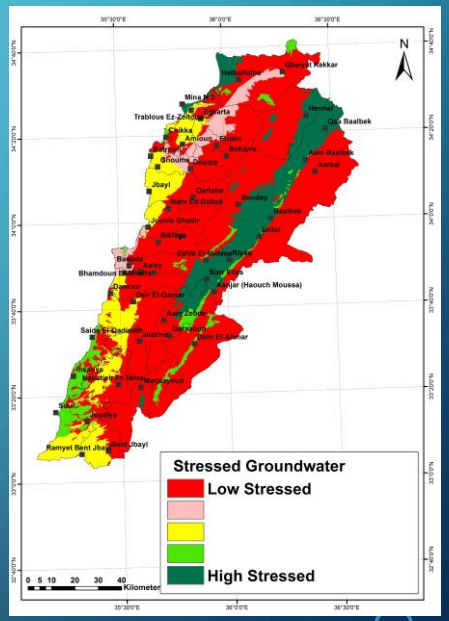
Adaptive Capacity Indicators

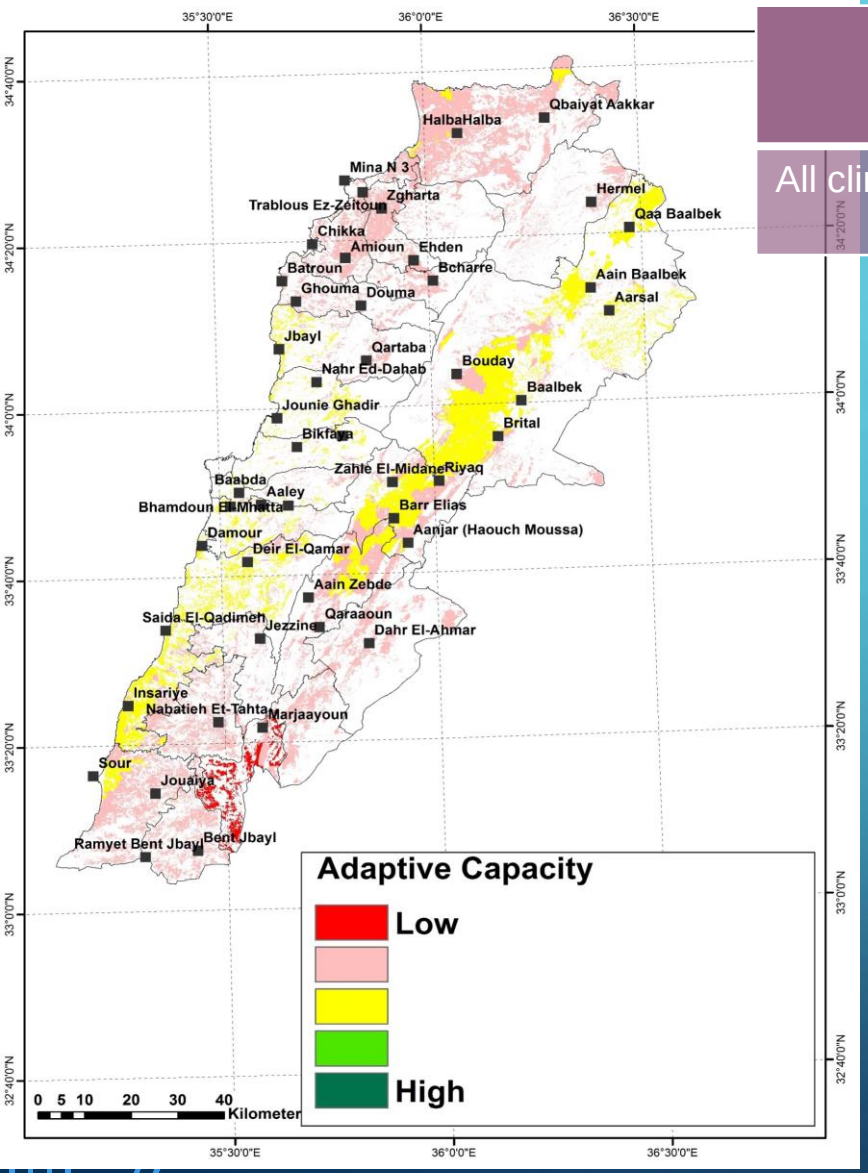








Adaptive Capacity

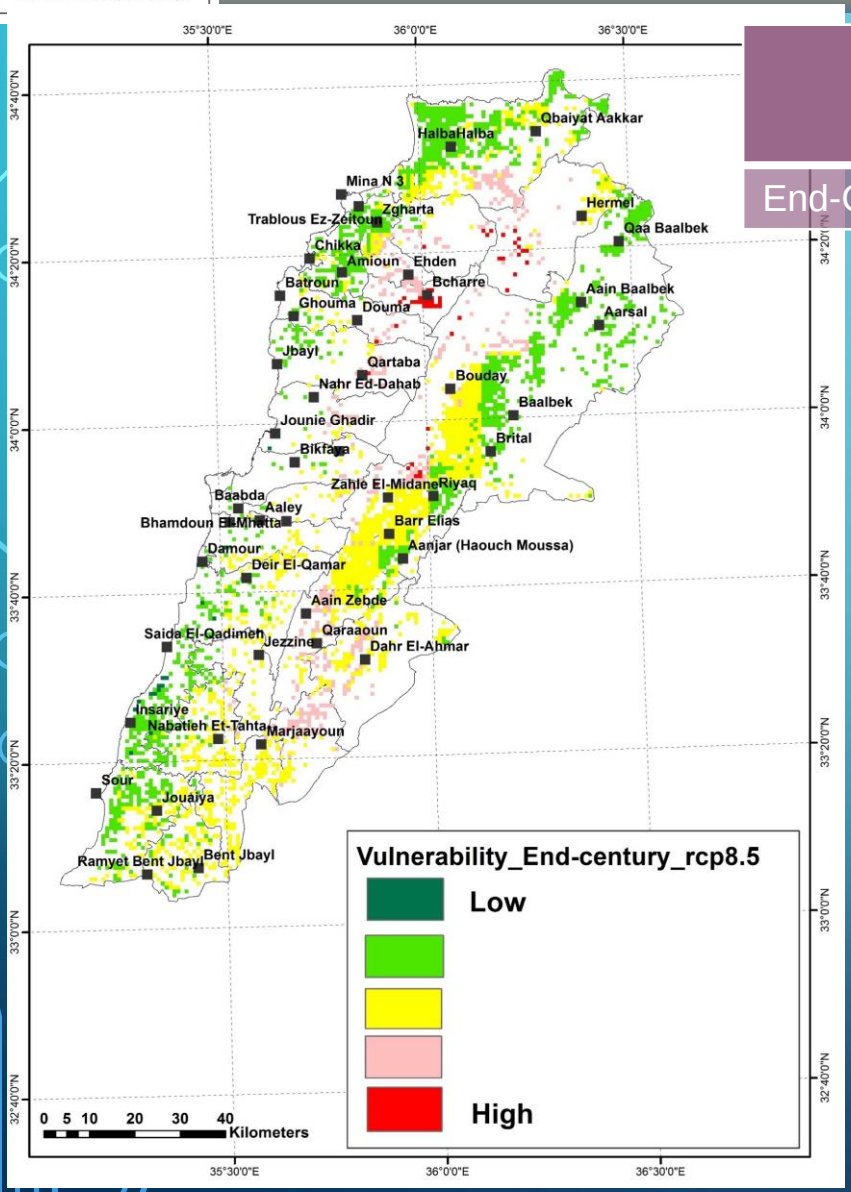


Scenario	Percentage of study area		
	Low AC	Moderate AC	High AC
All climate scenarios	35%	55%	10%

CAZA with Low AC:

- Marjaayoun.
- Hasbia,
- Rachia,
- Bcherri.

Vulnerability –rcp8.5 End-Century

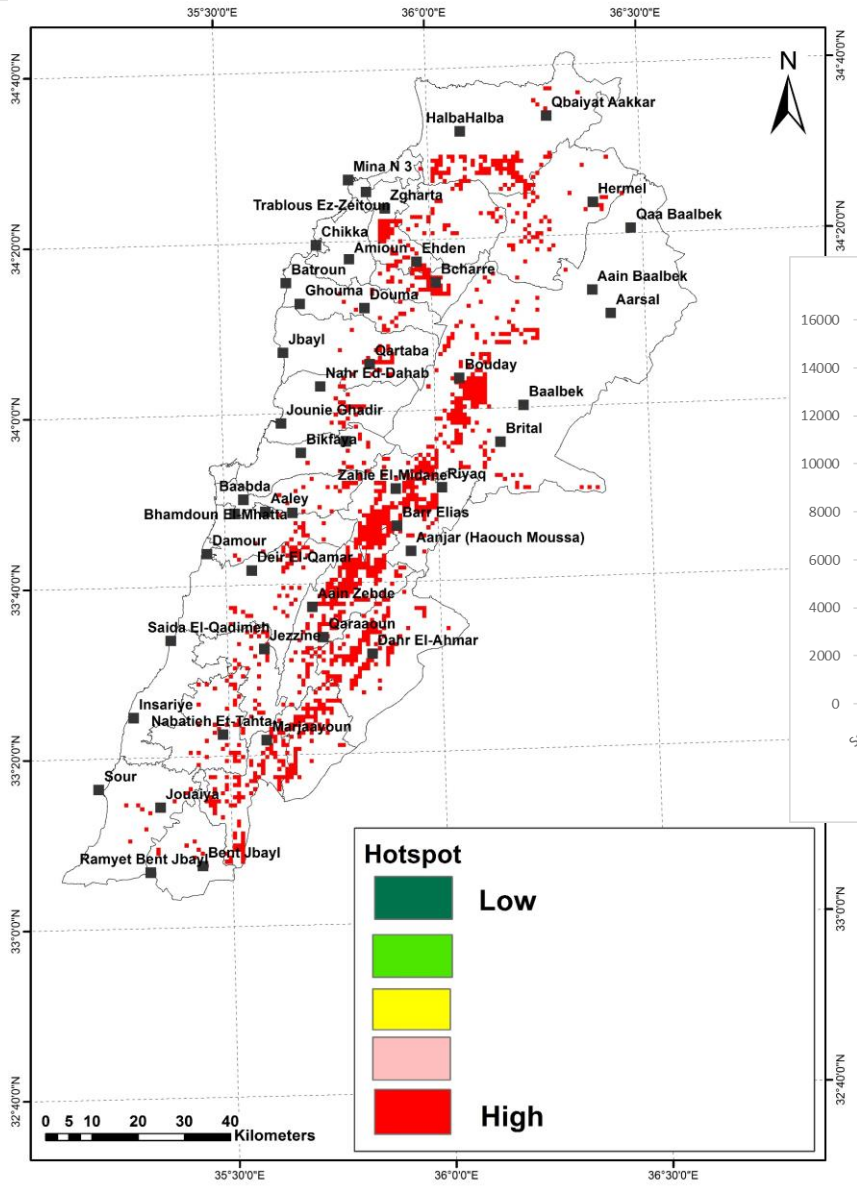


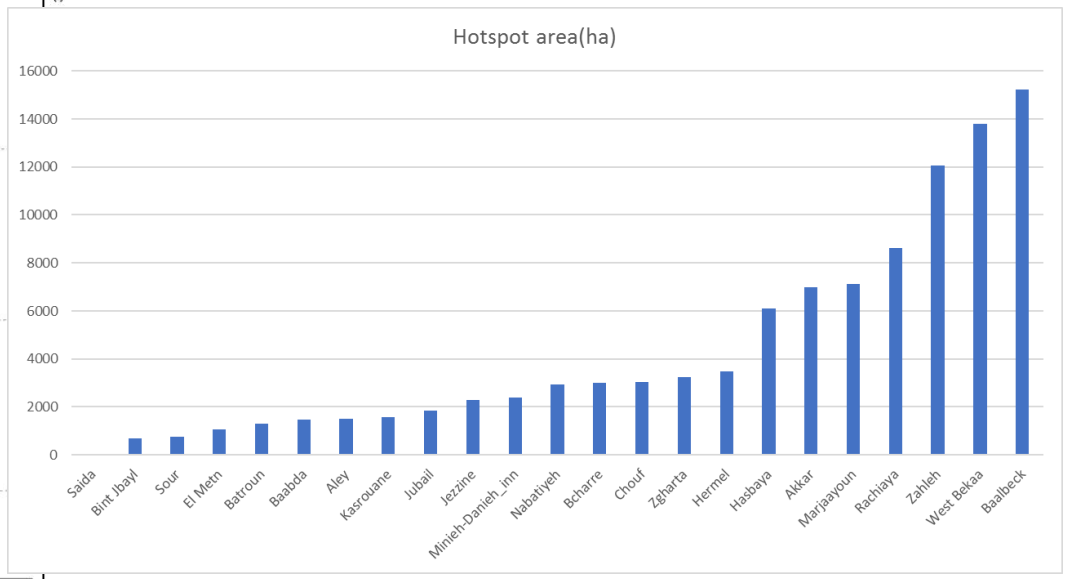
Scenario	Percentage of study area		
	Low VA	Moderate VA	High VA
End-Century rcp8.5	1%	86%	13%

CAZA with High VA:

- Akkar.
- Hasbia,
- Rachia,
- Bcherri.

Hotspots:


35°30'0"E
36°0'0"E
36°30'0"E
34°40'0"N
34°20'0"N
34°0'0"N
33°40'0"N
33°20'0"N
33°0'0"N
32°40'0"N
N
Qbaiyat Aakkar
HalbaHalba
Mina N 3
Hermel
Zgharta
Trablous Ez-Zeitoun
Qaa Baalbek
Chikka
Amioun
Ehden
Batroun
Bcharre
Aain Baalbek
Ghouma
Douma
Aarsal
Jbayl
Qartaba
Bouday
Nahr Ed-Dahab
Baalbek
Jounie Ghadir
Brital
Bikfaya
Zahle El-Mdiane
Riyaq
Baabda
Aaley
Bhamdoun El-Mhatta
Bar Elias
Aanjar (Haouch Moussa)
Damour
Deir El-Qamar
Aain Zebde
Saida El-Qadimeh
Qaraaoun
Jezzine
Dahr El-Ahmar
Insariye
Nabatieh Et-Tahtaa
Marjaayoun
Sour
Joaiya
Ramyet Bent Jbayl
Bent Jbayl
Hotspot
Low
High
0 5 10 20 30 40
Kilometers


Hotspot area(ha)
16000
14000
12000
10000
8000
6000
4000
2000
0
Saida
Bint Jbayl
Sour
El Metn
Batroun
Baabda
Aley
Kasrouane
Jubail
Jezzine
Minieh-Danieh_inn
Nabatiyeh
Bcharre
Chouf
Zgharta
Hermel
Hasbaya
Akkar
Marjaayoun
Rachiaya
Zahleh
West Bekaa
Baalbeck

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