



# **Strategic Initiative on Climate Change Impacts, Adaptation, and Development in Mountain Regions**

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# Lebanon characteristics

**Surface: 10452 sk**

**Mountains: 73%**

**Different Climates and  
Presence of microclimates**

**Bioclimatic Levels (7)**

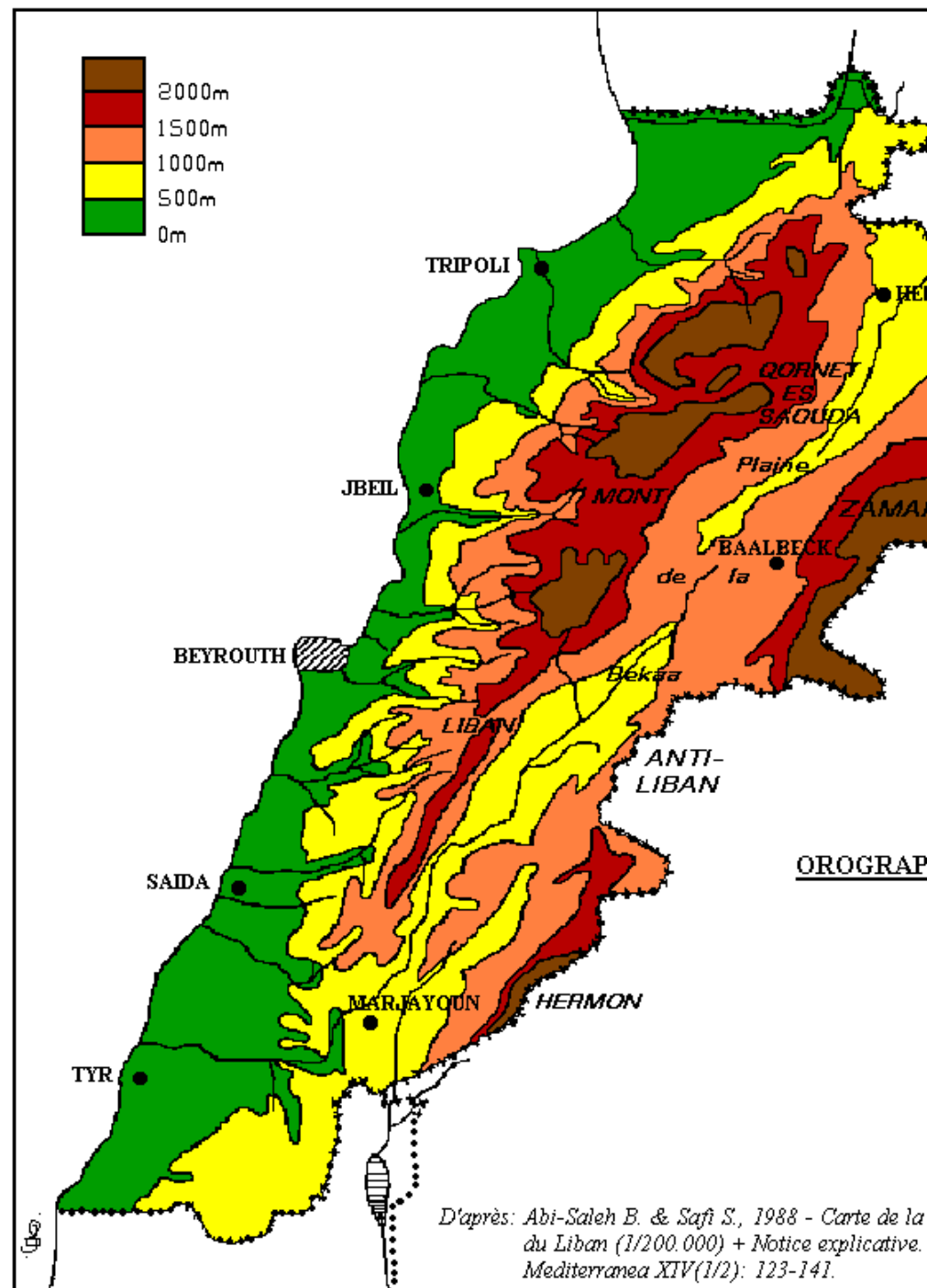
**Biodiversity**

...



# Geomorphology

- Coastal zone  
(shoreline, coastal plain, western chain foothills)
- Mount Lebanon  
(western mountain range)
- Beqaa plain
- Anti-Lebanon  
(eastern mountain range)



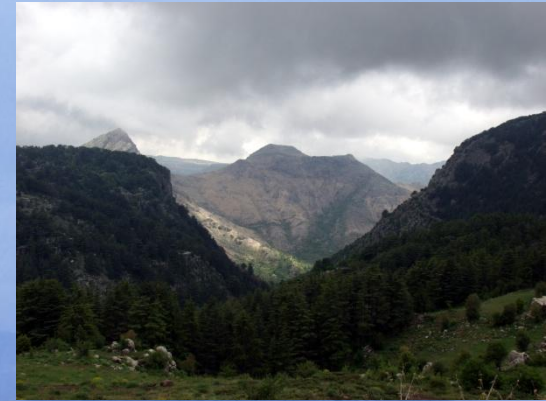
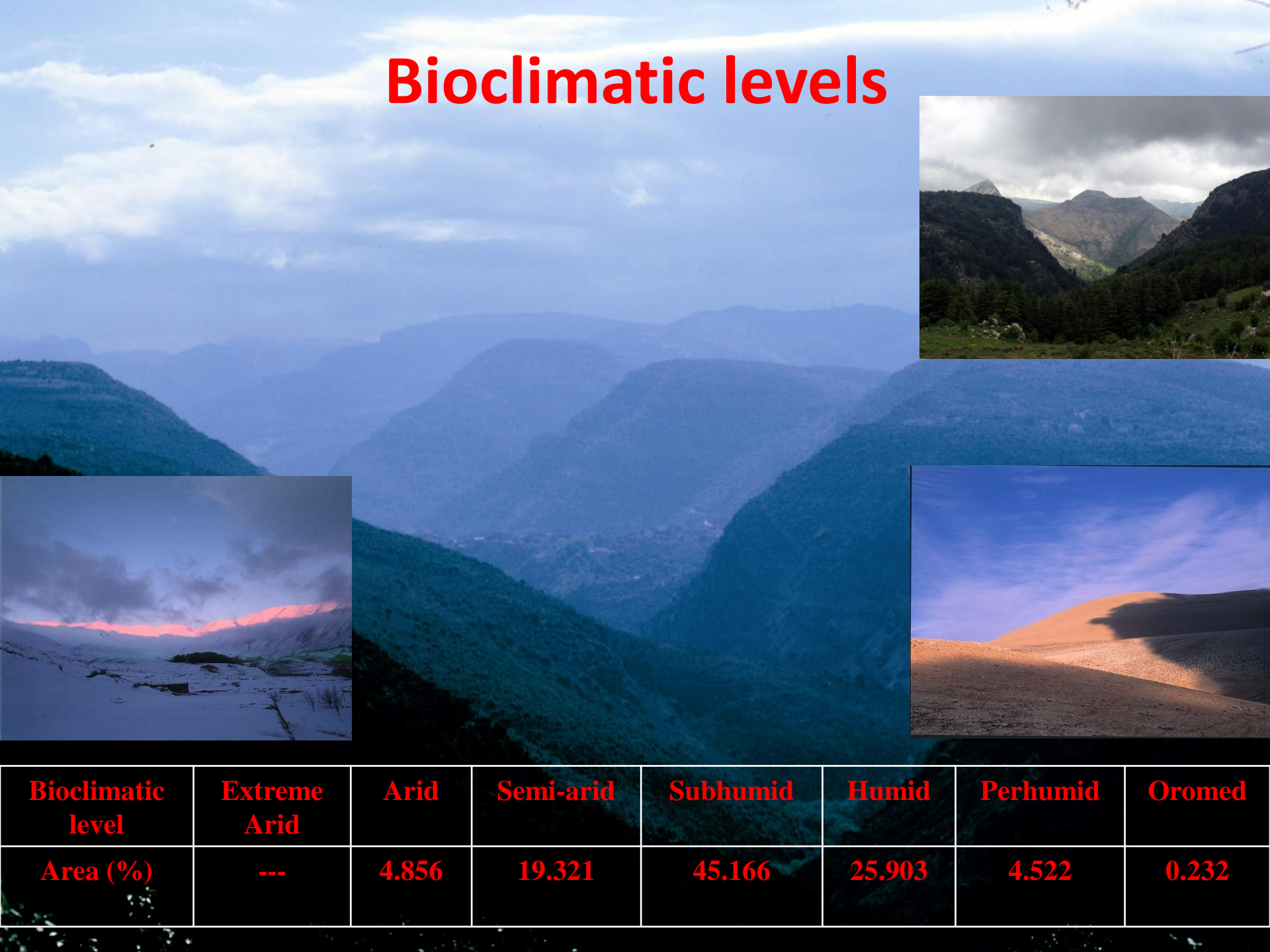


# Climate

- Mediterranean
- Seasons / Snow
- Average Precipitation: 700 to 1000 mm/yr  
(200 mm/yrs (north East & 1400 on high peaks)
- Temperature: (Beirut: 12d degree C)
- Wind: Western / Khamsin



# Bioclimatic levels



Bioclimatic level	Extreme Arid	Arid	Semi-arid	Subhumid	Humid	Perhumid	Oromed
Area (%)	---	4.856	19.321	45.166	25.903	4.522	0.232

# Importance of mountains:

- Biodiversity (about 9110 species)
- Endemic species





# Importance of mountains:

**Water  
conservation**





# Importance of mountains:

- Agriculture
- Grazing





# Importance of mountains:

- Natural Reserves
- Economic (ecotourism...)
- Natural Heritage and culture

...





# Climate observations

- Temperature: additional difference / higher spring temperature...
- Variation in the evapo transpiration
- Rain: Variation (number of days/quantity/period length and months...)
- Insect outbreaks on forest and agriculture (C. libani/Q. cerris/A. drupacea...)
- ...



# Climatic Change Scenario

Percentage area representing each of different bioclimatic levels in Lebanon

Bioclimatic level	Baseline scenario	Climate change scenario		
		Year 2020	Year 2050	Year 2080
Extreme arid	—	—	—	2.762
Arid	4.856	4.919	4.920	13.270
Semi-arid	19.321	23.838	23.871	15.223
Subhumid	45.166	49.575	50.652	60.757
Humid	25.903	19.728	19.442	7.470
Perhumid	4.522	1.765	1.115	0.518
Oromediterranean	0.232	0.175	—	—



# Mitigation / Adaptation



Hill Lakes and Dams,  
and development of  
new irrigation  
techniques



# Mitigation / Adaptation



- Forest and soil Conservation activities
- Reforestation / agroforestry and silvo-pastoral systems (use of local species...)



# Mitigation / Adaptation

- Sustainable agriculture and Good Agriculture practices
- Range land management





# Mitigation / Adaptation

- Enhancement of mountain tourism
- Flood management activities
- Additional restriction on the use of underground water
- Additional Infrastructure
- ...



# Problems

- Lack of research related on Mountains and Climatic change
- Lack of integrated projects in mountainous areas
- Lack of awareness on mountain and climatic change importance and values
- Miss coordination among stakeholders
- Shortage in national and international funds
- ...



A scenic landscape photograph of a mountain valley. In the foreground on the right, a large, mature evergreen tree with dense green needles stands prominently. The background features a deep valley with steep, forested slopes. The sky is bright blue with scattered white clouds. Overlaid on the lower center of the image is the text "Thank you for your attention" in a bold, red, sans-serif font.

**Thank you for your attention**