

*Project name: MED4EBM - Mediterranean Forum For Applied Ecosystem-Based Management*  
*Application case: EB-ICZM for Tyre Coast Nature Reserve*  
*Report type: Indicators*  
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# Mediterranean Forum For Applied Ecosystem-Based Management



Component	Name	Description	Update Frequency	Data Source	Notes
Agriculture	Area (ha) of crops		Annual	TCNR (GIS expert)	
Agriculture	Typology of crops		Seasonal	TCNR (GIS expert). Winter, spring, permanent crops	
Agriculture	Economic value of each crop	Not available yet. Ag-Adviser as App, that gives product prices in all market in Lebanon.	Daily	(Check) App ag-Adviser	
Agriculture	Production (tons)	Not available data yet. Possibly assessment from interviews of the farmers		From farmers	
Agriculture	Use of synthetic agrochemical products	Quantity and type of synthetic agrochemicals	Occasional, two assessments. 1981 and 2014/15	Dr. Tala Darwish	
Agriculture	Greenhouses (surface)	Linked with the products used for sterilisation of the soil (possible assessment is needed)		Suggested to visit areas and request directly. Colleague of Nahed expert in agriculture. TCNR (GIS expert)	
Agriculture	Surface of conventional or organic farms	Verify the surfaces inside our target area			
Agriculture	Agriculture as% GDP		Occasional (Publication of IUCN, 2015)	IUCN report Annex 4.3.1	
Air B&B	N° of Customers during Summer				
Birds	National rarity	Rare species, included White-eyed Gull and possibly Hooded Wheatear. Possibly related with climate change (increase of Temperatures).	Depend on single birdwatchers. Once or more each week, opportunistic observations	E-Bird Forum	
Birds	Rarity		Depend on single birdwatchers. Once or more each week, opportunistic observations	E-Bird Forum	
Birds	Vulnerability		Depend on single birdwatchers. Once or more each week, opportunistic observations	E-Bird Forum	

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Birds	Occurence		Depend on single birdwatchers. Once or more each week, opportunistic observations	E-Bird Forum	
Fish	Richness (species/125 m2)	From report IUCN published 2015	First assessment 2013, published in 2015. Second assessment in 2017.	IUCN	
Fish	Total abundance (ind/125m2)	From report IUCN published 2015	First assessment 2013, published in 2015. Second assessment in 2017.	IUCN	
Fish	Total biomass (Kg/125m2)	From report IUCN published 2015	First assessment 2013, published in 2015. Second assessment in 2017.	IUCN	
Fish	Presence of invasive species	There is an App as well.	It depends. Verify.	Dr. Bariche and/IUCN Report of Mar Otero (IUCN) App	<a href="http://www.iucn-medmis.org/?c=Map/show">http://www.iucn-medmis.org/?c=Map/show</a>
Fisheries	Economic value (\$/125 m2) of local fish	For each fish species			
Fisheries	Catch (tons)				
Fisheries	Economic value (\$/Kg) of imported fish	For each species			
Hotels	N° of Customer during Summer				
Huts at TCNR	Number of huts	Number and period of huts along the beach			
Huts at TCNR	Workforce				
Marine biodiversity	Presence Seagrass Cymodocea nodosa	Presence/Absence. Good indicator for disturbance	Annual	SPA-RAC	
Marine biodiversity	Cover Seagrass C. nodosa	Cover (sq m) and size	Annual	SPA-RAC	
Marine Ecosystem	Algae bloom	Presence/Absence and extent. Linked with agrochemical products	Annual	NCMS (National Centre Marine Studies)	

Component	Name	Description	Update Frequency	Data Source	Notes
Sandy Beach	Litter presence transported by sea	Litter transported by the sea <a href="https://plasticbustersmpas.interreg-med.eu/">https://plasticbustersmpas.interreg-med.eu/</a> Kg Classification per each item  Based on manual Beach litter monitoring	Twice per year, in two different seasons		Marine litter on the surface, followed by the satellites. Universityof Siena
Sandy Beach	Presence of litter left by tourists	Collection of rubbish for 4 months, summer season. On the public beach, carried out by the owners of the huts and transported away by the municipality service. If recycled, like glass, the weight of glass information is available. NGO is starting another activity (check the availability of information)	Service twice per week.		
Terrestrial Species	Presence of <i>Heterotheca subaxillaris</i>	Presence and distribution. Estimation about the extension in surface of removed plants	Annual		Removed every year by hand
Terrestrial Species	Presence of <i>Astragalus beritheus</i>	Presence and distribution of the species	In the past years, occasional surveys.		
Terrestrial Species	Cover of <i>A. beritheus</i>	Surface (sq m)	Occasional		
Urban city and towns	Sewage network			Project coordinator of AQUACYCLE: Plakas Konstantinos <kplakas@certh.gr	
Urban city and towns	Quantity water in the network				
Urban city and towns	Waste water treatment			Project coordinator of AQUACYCLE: Plakas Konstantinos <kplakas@certh.gr	
Urban city and towns	Treatment plant			Project coordinator of AQUACYCLE: Plakas Konstantinos <kplakas@certh.gr	
Watershed	Residues of Nitrates	In Wells. Research carried out once.	Occasional	Dr. Talal	
Watershed	Salinity	In wells. Research carried out once.	Occasional	Dr. Talal	

Component	Name	Description	Update Frequency	Data Source	Notes
Watershed	Residues of pesticides	In wells. Research carried out once.	Occasional	Dr. Talal	