

CO-EVOLVE

Promoting the co-evolution of human activities
and natural systems for the development of
sustainable coastal and maritime tourism

Deliverable 3.17.2 – Evaluation of tourism sustainability in the Pilot Areas

WP3

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1. Introduction

The report builds on the conceptual model (Tourism Sustainability Toolkit) developed under *Deliverable 3.16 Tourism Sustainability* and focuses on the implementation of the tourism sustainability evaluation method developed in Task 3.17.1. The key objectives are a) to identify the needs and gaps for information and data based on an indicator system specifically customized for each pilot area in order to inform strategic planning and be used as a reference for future planning activities and b) to assess sustainability at pilot area level.

The report includes a comparative analysis among the seven pilot areas of the project and highlights the priorities identified in each pilot area. It also introduces the customized sustainability toolkits developed under the methodological framework presented in Task 3.17.1., in order to be used as a starting point for measuring and monitoring tourism sustainability at destination level.

Finally, the report issues a first attempt to assess sustainability at pilot area level and formulates suggestions for future evaluation and monitoring, based on the data provided by the Pilot Area Coordinators.

2. Cross-cutting analysis among the PAs

The three tier Sustainability Toolkit developed in Co-Evolve (Task 3.16) promotes the implementation of a **common methodology** and list of sustainability indicators that allows comparisons between coastal destinations and is yet flexible enough to highlight the different needs and priorities of each coastal area. As a starting point, the extensive list of indicators is limited to customized sets of highly prioritized indicators that express the key issues and policy objectives for tourism development in each destination. Figures 1 and 2 show the prioritized indicators in each Pilot Area that represent the current economic, social, environmental and governance factors as well as the future development goals.

Beach and maritime tourism is the dominant type of tourism developed among the PAs, especially in terms of current development patterns. Ecotourism, followed by cultural tourism, are also among the most commonly selected sets of indicators that are considered of high priority, and in most cases represent future policy goals in tourism development. Recreational tourism seems mostly a supplementary activity in most PAs whereas Cruising is solely developed in Valencia (PA 4).

Figure 1: High Priority Indicators per Pilot Area (Core and Pilot Area Specific)

Sets of indicators		REMTH		RER		PoDelta		VPF	Herault		RERA	DUNEA
Core indicators		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
C.A1.1.	% of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility					✓	✓	✓	✓	✓		
C.B1.1.	Number of tourist nights per month	✓	✓			✓	✓	✓	✓	✓	✓	
C.B2.1.	Average length of stay of tourists (nights)	✓	✓					✓	✓	✓	✓	
C.B3.1.	Direct tourism employment as % of total employment in the destination	✓	✓	✓	✓		✓	✓	✓	✓		✓
C.C1.1.	Number of tourists/visitors per 100 residents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
C.D1.4.	Average carbon footprint of tourists and same-day visitors travelling from home to the destination											
C.D3.1.	Waste production per tourist night compared to general population waste production per person (kg)		✓					✓		✓		
C.D5.1.	Water consumption per tourist night compared to general population water consumption per resident night							✓				
C.D5.2.	% of tourism enterprises taking actions to reduce water consumption								✓	✓		
C.D6.2.	% of tourism enterprises that take actions to reduce energy consumption									✓		
C.D6.3.	% of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year							✓				
C.D7.1.	% of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes		✓			✓	✓		✓	✓		✓
Added by PA C.D6.1.	Energy consumption per tourist night compared to general population energy consumption per resident night							✓				

Pilot area-specific indicators		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
P.A1.2.	% shoreline subjected to erosion	✓	✓	✓	✓	✓	✓		✓	✓		✓
P.A1.3.	Coastal area in degraded condition (low/medium/high)			✓	✓	✓	✓			✓		
P.A1.6.	Coastal flooding events per year(number)	✓	✓	✓	✓					✓		✓
P.A2.1.	Land occupied by artificial surfaces within the first 500m of coast (in %)					✓	✓			✓	✓	✓
P.A2.2.	% of area designated for tourism purposes					✓	✓		✓	✓	✓	✓
P.A3.1.	Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)			✓	✓	✓	✓	✓		✓	✓	
P.A3.3.	Water use (total volume in liters or m ³ consumed and liters per tourist per day)										✓	
P.A4.2.	Rate of loss of protected areas				✓	✓	✓					✓
P.A4.3.	Percentage of bathing sites with excellent water quality								✓	✓		
P.A5.1.	Total use of water by tourism sector (Tourism as a % of all users)										✓	
P.A5.2.	Energy use by tourism industry as % of total											
P.B1.1.	Existence of a coastal planning management system		✓			✓	✓		✓	✓		✓
P.B1.2.	Length of protected and defended coastline (km)	✓		✓	✓	✓	✓		✓	✓	✓	✓
P.B2.6.	Implementation of Natura 2000 management plans								✓	✓		
P.B4.8.	Volume (m ³) of sediments dredged per year			✓	✓	✓	✓					
P.C1.2.	% environmental, social, cultural actions recommended in plan which have been implemented			✓						✓		✓
P.C3.1.	Level of tourism sector involvement in public policy (advisory bodies, review panels etc)			✓				✓				
Added by PA	% of cruise actors/companies in the destination using a voluntary verified certification/labelling for environmental/quality and sustainability							✓				
Added by PA	Number of cruise passenger per month							✓				
Added by PA	Number of days with cruise call							✓				

Added by PA	Number of cruise passenger per day							✓				
Added by PA	Direct cruise tourism employment as % of total tourism employment in the destinatio							✓				
Added by PA	Number of cruise passengers visiting the destination, per 100 residents							✓				
Added by PA	MARPOL V waste (m3/year) from cruises / annual number of cruise passangers							✓				
Added by PA	Fresh water consumption per cruise passenger compared to general population water consumption per person day							✓				
Added by PA	Availability of shore-side electricity at the port; Share of cruise ship calls that receive shore-side electricity; Share of port facilities' electrification provided by renewable sources at the destination/ LNG facilities (YES/NO)							✓				
Added by PA	Share of transport modes in cruisers mobility (%)							✓				
Added by PA	Tourism fluxes between urban zone and natural area (complementary zones)								✓	✓		
Added by PA	Considering the important river, flooding risk (monitoring marine and river flooding risk) and population alarm process									✓		

Source: UTH elaboration

Figure 2: High Priority Indicators per Pilot Area (Destination Indicators)

Sets of indicators		REMTH		RER		PoDelta		VPF	Herault		RERA	DUNEA
Destination Indicators: Di.Beach/Maritime tourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Di.A4.	Number of second homes per 100 homes in coastal zones*	✓				✓	✓		✓	✓		
Di.B1.	% of tourist infrastructure (hotels, other) located in coastal zones*	✓		✓		✓	✓		✓	✓	✓	✓
Di.C2.	% of beaches awarded the Blue Flag	✓	✓	✓					✓	✓		
Di.C3.	Costs of erosion-protection measures (e.g. sea walls.)			✓		✓	✓		✓	✓		✓
Di.C4.	Beach nourishment: sand volume and extension of the restored beach (m3 and m2)			✓		✓	✓		✓	✓		
Di.D1.	Existence of up to date tourism plans and policies (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D2.	Existence of a land use or development plan (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Destination Indicators: Dii.Urban/Cultural tourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Dii.A3.	% of total tourists visiting in peak month and average for the year					✓			✓	✓	✓	✓
Dii.B1.	Total number of tourists per square Km in key sites (crowding/spatial distribution)					✓	✓					
Dii.C4.	% of sites under a management and monitoring system for protection of cultural sites								✓	✓		
Dii.D1.	Existence of up to date tourism plans and policies (YES/NO)					✓			✓	✓		✓
Dii.D2.	Existence of a land use or development plan(YES/NO)					✓			✓	✓		✓
Dii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)					✓			✓	✓		✓

Dii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)					✓			✓	✓		✓
Destination Indicators: Diii.Cruising		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Diii.A4.	Number of ship visits per year (by month)							✓				
Diii.A6.	Average duration of stay in port (in days)							✓				
Diii.A8.	Average spending per cruise ship visitor (€)							✓				
Diii.B1.	Volume of fresh water on-loaded at port (m ³)							✓				
Diii.B2.	Volume of waste accepted for disposal (solid, liquid) at port (m ³)							✓				
Diii.C1.	Maximum capacity of docking facilities (number)							✓				
Diii.D1.	Existence of up to date tourism plans and policies(YES/NO)							✓				
Diii.D2.	Existence of Master Plan(YES/NO)											
Diii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)							✓				
Diii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)											
<i>Added by PA Diii.A2</i>	<i>Total jobs directly attributable to cruise industry WTO (2004)</i>							✓				
<i>Added by PA Diii.A7</i>	<i>Total and average port fees and charges received per ship visit WTO (2004)</i>							✓				
<i>Added by PA Diii.C4</i>	<i>Access to public transportation systems(YES/NO) Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)</i>							✓				
<i>Added by PA Diii.C5.</i>	<i>% visitors taking organized shore tours Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)</i>							✓				
Destination Indicators: Div.Recreational boating (Yachting/Marinas)		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Div.A2.	Number of yachts per year (by month)			✓			✓		✓	✓	✓	
Div.A4.	Average duration of stay in port (in days)			✓								
Div.B1.	Volume of fresh water on-loaded at port(m ³)											
Div.B2.	Volume of waste accepted for disposal (solid, liquid) at										✓	

	port(m ³)											
Div.C1.	Number of berths and moorings for recreational boating											
Div.D1.	Existence of up to date tourism plans and policies(YES/NO)								✓	✓		
Div.D2.	Existence of a land use or development plan(YES/NO)								✓	✓		
Div.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)											
Div.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)			✓					✓	✓		
Destination Indicators: Dv.Nature/Ecotourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Dv.A3.	Total number of visitors to parks and to key sites		✓		✓	✓	✓			✓		✓
Dv.B1.	Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)		✓		✓	✓			✓	✓		✓
Dv.B5.	N° of visitors acceptable, according to the capacity of the equipment and facilities of the site (depends on capacity studies establishing limits)					✓						
Dv.C1.	% of site area occupied by rare or unique species		✓		✓	✓	✓					✓
Dv.C2.	% of endemic species at the site		✓		✓	✓	✓		✓	✓		✓
Dv.D1.	Existence of up to date tourism plans and policies(YES/NO)		✓		✓	✓			✓	✓		✓
Dv.D2.	Existence of environmental plan and management(YES/NO)		✓		✓	✓			✓	✓		✓
Dv.D10.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)				✓	✓						✓
Dv.D13.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)				✓	✓						✓

Source: UTH elaboration

Common needs, obstacles and goals among the PAs emerge during the prioritization process. Several indicators seem to be of key significance for the majority of the pilot areas and are more frequently selected and identified as of High Priority (Figures 3, 4 and 5).

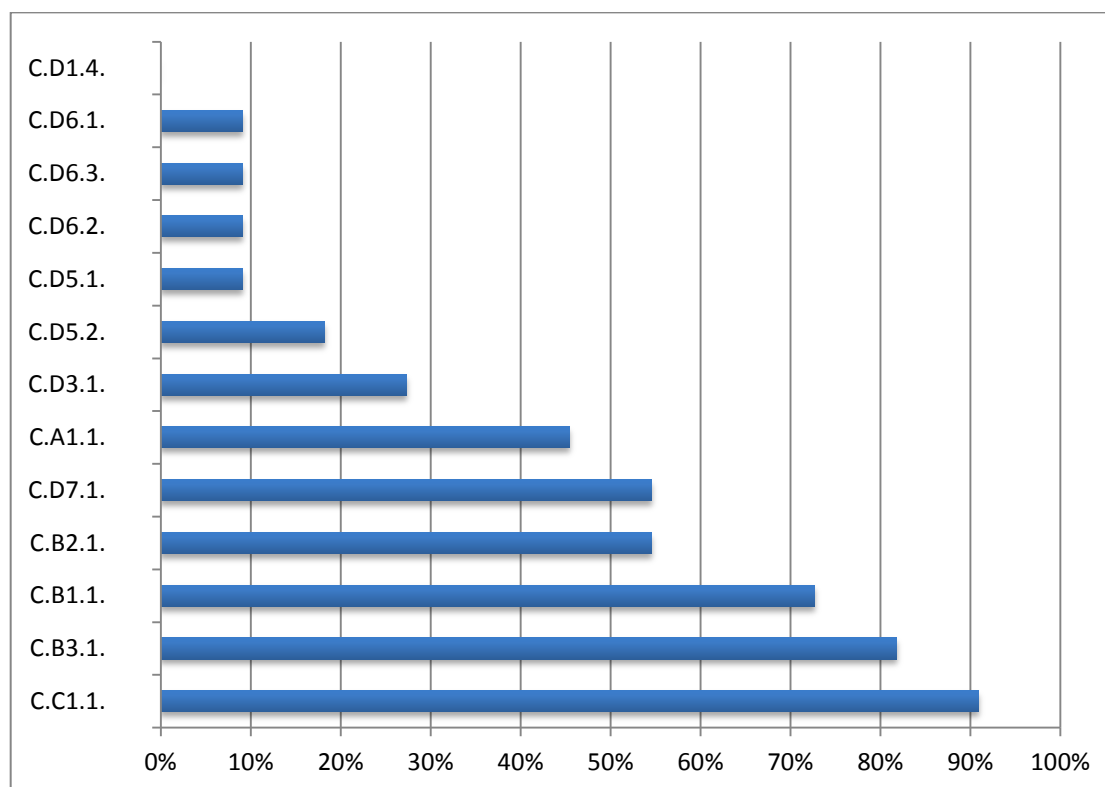
Core Indicators depicting tourism flows, the contribution to local economy and spatial concentration are most frequently (above the average) identified to be highly relevant and important to the pilot areas (Table 1). Environmental issues related to water and especially energy are considered less relevant at the selected destinations.

Table 1: Highly Prioritized Core indicators

Core indicators		Percentage	Selected	Total
C.C1.1.	Number of tourists/visitors per 100 residents	91%	10	11
C.B3.1.	Direct tourism employment as % of total employment in the destination	82%	9	11
C.B1.1.	Number of tourist nights per month	73%	8	11
C.B2.1.	Average length of stay of tourists (nights)	55%	6	11
C.D7.1.	% of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes	55%	6	11
C.A1.1.	% of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility	45%	5	11
C.D3.1.	Waste production per tourist night compared to general population waste production per person (kg)	27%	3	11
C.D5.2.	% of tourism enterprises taking actions to reduce water consumption	18%	2	11
C.D5.1.	Water consumption per tourist night compared to general population water consumption per resident night	9%	1	11
C.D6.2.	% of tourism enterprises that take actions to reduce energy consumption	9%	1	11
C.D6.3.	% of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year	9%	1	11
Added C.D6.1.	Energy consumption per tourist night compared to general population energy consumption per resident night	9%	1	11
C.D1.4.	Average carbon footprint of tourists and same-day visitors travelling from home to the destination	0%	0	11

Source: UTH elaboration

Figure 3: Highly Prioritized Core indicators



Source: UTH elaboration

In the same context, Pilot Area Specific indicators related to the environmental problems, use, protection and management of the coastal zone are most frequently identified as key indicators for the sustainability of the pilot areas (Table 2).

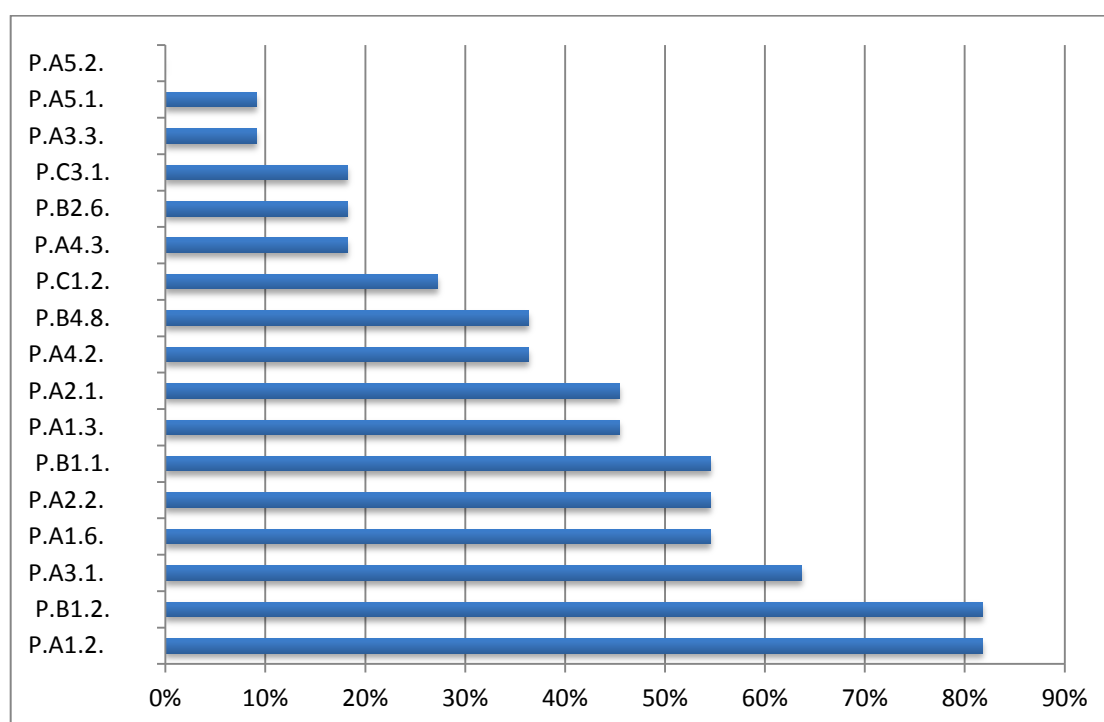
Table 2: Highly Prioritized Pilot Area Specific indicators

Pilot area-specific indicators		Percentage	Selected	Total
P.A1.2.	% shoreline subjected to erosion	81,82%	9	11
P.B1.2.	Length of protected and defended coastline (km)	81,82%	9	11
P.A3.1.	Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)	63,64%	7	11
P.A1.6.	Coastal flooding events per year(number)	54,55%	6	11
P.A2.2.	% of area designated for tourism purposes	54,55%	6	11
P.B1.1.	Existence of a coastal planning management system	54,55%	6	11
P.A1.3.	Coastal area in degraded condition (low/medium/high)	45,45%	5	11
P.A2.1.	Land occupied by artificial surfaces within the first 500m of coast (in %)	45,45%	5	11
P.A4.2.	Rate of loss of protected areas	36,36%	4	11
P.B4.8.	Volume (m ³) of sediments dredged per year	36,36%	4	11
P.C1.2.	% environmental, social, cultural actions recommended in plan which have been implemented	27,27%	3	11

P.A4.3.	Percentage of bathing sites with excellent water quality	18,18%	2	11
P.B2.6.	Implementation of Natura 2000 management plans	18,18%	2	11
P.C3.1.	Level of tourism sector involvement in public policy (advisory bodies, review panels etc)	18,18%	2	11
P.A3.3.	Water use (total volume in liters or m ³ consumed and liters per tourist per day)	9,09%	1	11
P.A5.1.	Total use of water by tourism sector (Tourism as a % of all users)	9,09%	1	11
P.A5.2.	Energy use by tourism industry as % of total	0,00%	0	11

Source: UTH elaboration

Figure 4: Highly Prioritized Pilot Area Specific indicators



Source: UTH elaboration

The identification of the most frequently selected Destination indicators depends highly on the number of pilot areas following the same tourism development patterns (e.g. Beach/maritime tourism is represented by nine PAs whereas Cruising in only one PA). The destination indicator sets Di.Beach/maritime tourism and Dv.Nature/ecotourism seem to be adopted in their entirety by all the pilot areas which are active in these types of tourism activities. Indicators related to tourism flows, management of key assets and policy implementation represent the most crucial/highly prioritized issues in all types of destinations.

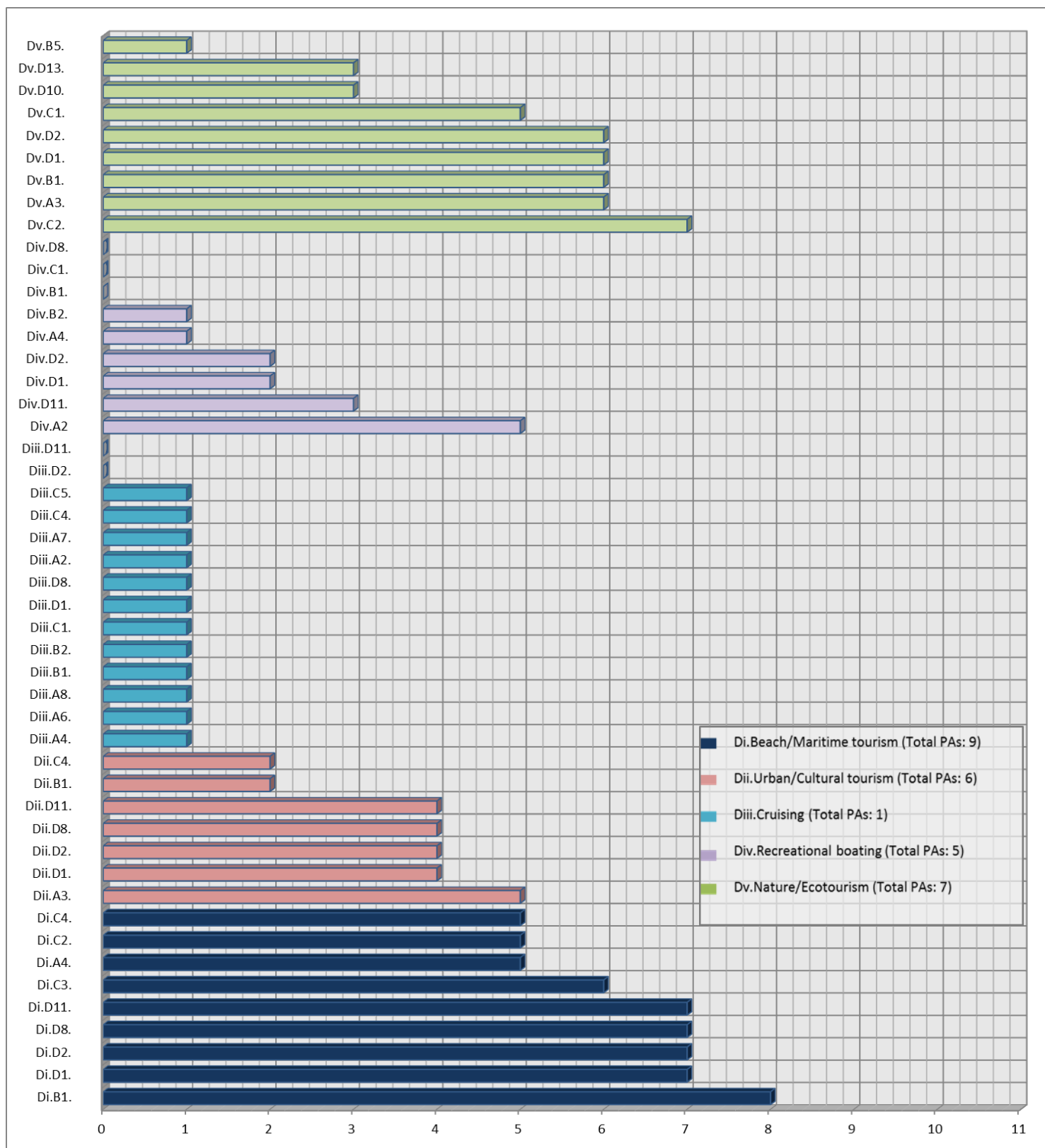
Table 3: Highly Prioritized Destination Indicators

Destination Indicators: Di.Beach/Maritime tourism		Percentage	Selected	Total
Di.B1.	% of tourist infrastructure (hotels, other) located in coastal zones*	89%	8	9
Di.D1.	Existence of up to date tourism plans and policies (YES/NO)	78%	7	9
Di.D2.	Existence of a land use or development plan (YES/NO)	78%	7	9
Di.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)	78%	7	9
Di.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)	78%	7	9
Di.C3.	Costs of erosion-protection measures (e.g. sea walls.)	67%	6	9
Di.A4.	Number of second homes per 100 homes in coastal zones*	56%	5	9
Di.C2.	% of beaches awarded the Blue Flag	56%	5	9
Di.C4.	Beach nourishment: sand volume and extension of the restored beach (m3 and m2)	56%	5	9
Destination Indicators: Dii.Urban/Cultural tourism		Percentage	Selected	Total
Dii.A3.	% of total tourists visiting in peak month and average for the year	83%	5	6
Dii.D1.	Existence of up to date tourism plans and policies (YES/NO)	67%	4	6
Dii.D2.	Existence of a land use or development plan(YES/NO)	67%	4	6
Dii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)	67%	4	6
Dii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)	67%	4	6
Dii.B1.	Total number of tourists per square Km in key sites (crowding/spatial distribution)	33%	2	6
Dii.C4.	% of sites under a management and monitoring system for protection of cultural sites	33%	2	6
Destination Indicators: Diii.Cruising		Percentage	Selected	Total
Diii.A4.	Number of ship visits per year (by month)	100%	1	1
Diii.A6.	Average duration of stay in port (in days)	100%	1	1
Diii.A8.	Average spending per cruise ship visitor (€)	100%	1	1
Diii.B1.	Volume of fresh water on-loaded at port (m ³)	100%	1	1
Diii.B2.	Volume of waste accepted for disposal (solid, liquid) at port (m ³)	100%	1	1
Diii.C1.	Maximum capacity of docking facilities (number)	100%	1	1
Diii.D1.	Existence of up to date tourism plans and policies(YES/NO)	100%	1	1
Diii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)	100%	1	1
Diii.A2.	<i>Total jobs directly attributable to cruise industry WTO (2004)</i>	100%	1	1
Diii.A7.	<i>Total and average port fees and charges received per ship visit WTO (2004)</i>	100%	1	1
Diii.C4.	<i>Access to public transportation systems(YES/NO) Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)</i>	100%	1	1
Diii.C5.	<i>% visitors taking organized shore tours Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)</i>	100%	1	1
Diii.D2.	Existence of Master Plan(YES/NO)	0%	0	1
Diii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)	0%	0	1

Destination Indicators: Div.Recreational boating (Yachting/Marinas)		Percentage	Selected	Total
Div.A2	Number of yachts per year (by month)	100%	5	5
Div.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)	60%	3	5
Div.D1.	Existence of up to date tourism plans and policies(YES/NO)	40%	2	5
Div.D2.	Existence of a land use or development plan(YES/NO)	40%	2	5
Div.A4.	Average duration of stay in port (in days)	20%	1	5
Div.B2.	Volume of waste accepted for disposal (solid, liquid) at port(m ³)	20%	1	5
Div.B1.	Volume of fresh water on-loaded at port(m ³)	0%	0	5
Div.C1.	Number of berths and moorings for recreational boating	0%	0	5
Div.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)	0%	0	5
Destination Indicators: Dv.Nature/Ecotourism		Percentage	Selected	Total
Dv.C2.	% of endemic species at the site	100%	7	7
Dv.A3.	Total number of visitors to parks and to key sites	86%	6	7
Dv.B1.	Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)	86%	6	7
Dv.D1.	Existence of up to date tourism plans and policies(YES/NO)	86%	6	7
Dv.D2.	Existence of environmental plan and management(YES/NO)	86%	6	7
Dv.C1.	% of site area occupied by rare or unique species	71%	5	7
Dv.D10.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO) → P.I.	43%	3	7
Dv.D13.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)	43%	3	7
Dv.B5.	N° of visitors acceptable, according to the capacity of the equipment and facilities of the site (depends on capacity studies establishing limits)	14%	1	7

Source: UTH elaboration

Figure 5: Highly Prioritized Destination Indicators



Source: UTH elaboration

3. Mapping Data Availability

The identification of major data gaps and limitations in data accessibility is critical for measuring sustainability in the pilot areas and constitutes a key step towards guiding future efforts in prioritizing, evaluating and monitoring the sustainability indicators. Moreover, special attention should be given to the quality of data, especially regarding spatial resolution, data sources and thresholds.

In the context of mapping and evaluating the available data received from the seven pilot areas, three dimensions are considered critical in order to assess sustainability at local scale:

- **Type of available data and related data sources**
 - Quantitative data from official statistical offices, research projects, tourism boards etc.
 - Estimations based on proxy or qualitative data from statistical calculations, research projects, tourism agencies etc.
- **Spatial resolution of available data**
 - Destination level
 - Different spatial scale such as municipality or NUTS3 unit
- **Definition of thresholds and trends evaluation**

Based on the above, the data received from the seven pilot areas are categorized in five different groups:

1. Data available at destination scale
2. Data available at different spatial scale
3. Partially available data: Estimations based on proxy and qualitative data at destination level
4. Partially available data: Estimations based on proxy and qualitative data at different spatial scale
5. No available data

Data availability for the high priority indicators already described in the previous section is depicted per pilot area and category in the following matrices (Figures 6 and 7).

Figure 6: Data Availability Matrix (Core and Pilot Area Specific Indicators)

Sets of indicators		REMTH		RER		PoDelta		VPF	Herault		RERA	DUNEA
Core indicators		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
C.A1.1.	% of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility					✓	✓	✓	✓	✓		
C.B1.1.	Number of tourist nights per month	✓	✓			✓	✓	✓	✓	✓	✓	
C.B2.1.	Average length of stay of tourists (nights)	✓	✓					✓	✓	✓	✓	
C.B3.1.	Direct tourism employment as % of total employment in the destination	✓	✓	✓	✓		✓	✓	✓	✓		✓
C.C1.1.	Number of tourists/visitors per 100 residents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
C.D1.4.	Average carbon footprint of tourists and same-day visitors travelling from home to the destination											
C.D3.1.	Waste production per tourist night compared to general population waste production per person (kg)		✓					✓		✓		
C.D5.1.	Water consumption per tourist night compared to general population water consumption per resident night							✓				
C.D5.2.	% of tourism enterprises taking actions to reduce water consumption								✓	✓		
C.D6.2.	% of tourism enterprises that take actions to reduce energy consumption									✓		
C.D6.3.	% of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year							✓				
C.D7.1.	% of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes		✓			✓	✓		✓	✓		✓
Added C.D6.1. by PA	Energy consumption per tourist night compared to general population energy consumption per resident night							✓				

Pilot area-specific indicators		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
P.A1.2.	% shoreline subjected to erosion	✓	✓	✓	✓	✓	✓		✓	✓		✓
P.A1.3.	Coastal area in degraded condition (low/medium/high)			✓	✓	✓	✓			✓		
P.A1.6.	Coastal flooding events per year(number)	✓	✓	✓	✓					✓		✓
P.A2.1.	Land occupied by artificial surfaces within the first 500m of coast (in %)					✓	✓			✓	✓	✓
P.A2.2.	% of area designated for tourism purposes					✓	✓		✓	✓	✓	✓
P.A3.1.	Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)			✓	✓	✓	✓	✓		✓	✓	
P.A3.3.	Water use (total volume in liters or m ³ consumed and liters per tourist per day)										✓	
P.A4.2.	Rate of loss of protected areas				✓	✓	✓					✓
P.A4.3.	Percentage of bathing sites with excellent water quality								✓	✓		
P.A5.1.	Total use of water by tourism sector (Tourism as a % of all users)										✓	
P.A5.2.	Energy use by tourism industry as % of total											
P.B1.1.	Existence of a coastal planning management system		✓			✓	✓		✓	✓		✓
P.B1.2.	Length of protected and defended coastline (km)	✓		✓	✓	✓	✓		✓	✓	✓	✓
P.B2.6.	Implementation of Natura 2000 management plans								✓	✓		
P.B4.8.	Volume (m ³) of sediments dredged per year			✓	✓	✓	✓					
P.C1.2.	% environmental, social, cultural actions recommended in plan which have been implemented			✓						✓		✓
P.C3.1.	Level of tourism sector involvement in public policy (advisory bodies, review panels etc)			✓				✓				
Added by PA	% of cruise actors/companies in the destination using a voluntary verified certification/labelling for environmental/quality and sustainability							✓				
Added by PA	Number of cruise passenger per month							✓				
Added by PA	Number of days with cruise call							✓				
Added by PA	Number of cruise passenger per day							✓				

Added by PA	Direct cruise tourism employment as % of total tourism employment in the destination							✓				
Added by PA	Number of cruise passengers visiting the destination, per 100 residents							✓				
Added by PA	MARPOL V waste (m3/year) from cruises / annual number of cruise passengers							✓				
Added by PA	Fresh water consumption per cruise passenger compared to general population water consumption per person day							✓				
Added by PA	Availability of shore-side electricity at the port; Share of cruise ship calls that receive shore-side electricity; Share of port facilities' electrification provided by renewable sources at the destination/ LNG facilities (YES/NO)							✓				
Added by PA	Share of transport modes in cruisers mobility (%)							✓				
Added by PA	Tourism fluxes between urban zone and natural area (complementary zones)								✓	✓		
Added by PA	Considering the important river, flooding risk (monitoring marine and river flooding risk) and population alarm process									✓		

- Data available at destination scale
- Data available at different spatial scale
- Partially available data: Estimations based on proxy and qualitative data at destination level
- Partially available data: Estimations based on proxy and qualitative data at different spatial scale
- No available data

Source: UTH elaboration

Figure 7: Data Availability Matrix (Destination Indicators)

Sets of indicators		REMTH		RER		PoDelta		VPF	Herault		RERA	DUNEA
Destination Indicators: Di.Beach/Maritime tourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Di.A4.	Number of second homes per 100 homes in coastal zones*	✓				✓	✓		✓	✓		
Di.B1.	% of tourist infrastructure (hotels, other) located in coastal zones*	✓		✓		✓	✓		✓	✓	✓	✓
Di.C2.	% of beaches awarded the Blue Flag	✓	✓	✓					✓	✓		
Di.C3.	Costs of erosion-protection measures (e.g. sea walls.)			✓		✓	✓		✓	✓		✓
Di.C4.	Beach nourishment: sand volume and extension of the restored beach (m3 and m2)			✓		✓	✓		✓	✓		
Di.D1.	Existence of up to date tourism plans and policies (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D2.	Existence of a land use or development plan (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)			✓		✓	✓		✓	✓	✓	✓
Di.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)			✓		✓	✓		✓	✓	✓	✓
Destination Indicators: Dii.Urban/Cultural tourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Dii.A3.	% of total tourists visiting in peak month and average for the year					✓			✓	✓	✓	✓
Dii.B1.	Total number of tourists per square Km in key sites (crowding/spatial distribution)					✓	✓					
Dii.C4.	% of sites under a management and monitoring system for protection of cultural sites								✓	✓		
Dii.D1.	Existence of up to date tourism plans and policies (YES/NO)					✓			✓	✓		✓
Dii.D2.	Existence of a land use or development plan(YES/NO)					✓			✓	✓		✓
Dii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)					✓			✓	✓		✓
Dii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)					✓			✓	✓		✓

Destination Indicators: Diii.Cruising		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Diii.A4.	Number of ship visits per year (by month)							✓				
Diii.A6.	Average duration of stay in port (in days)							✓				
Diii.A8.	Average spending per cruise ship visitor (€)							✓				
Diii.B1.	Volume of fresh water on-loaded at port (m ³)							✓				
Diii.B2.	Volume of waste accepted for disposal (solid, liquid) at port (m ³)							✓				
Diii.C1.	Maximum capacity of docking facilities (number)							✓				
Diii.D1.	Existence of up to date tourism plans and policies(YES/NO)							✓				
Diii.D2.	Existence of Master Plan(YES/NO)											
Diii.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)							✓				
Diii.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)											
Added by PA Diii.A2	Total jobs directly attributable to cruise industry WTO (2004)							✓				
Added by PA Diii.A7	Total and average port fees and charges received per ship visit WTO (2004)							✓				
Added by PA Diii.C4	Access to public transportation systems(YES/NO) Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)							✓				
Added by PA Diii.C5.	% visitors taking organized shore tours Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)							✓				
Destination Indicators: Div.Recreational boating (Yachting/Marinas)		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Div.A2.	Number of yachts per year (by month)			✓			✓		✓	✓	✓	
Div.A4.	Average duration of stay in port (in days)			✓								
Div.B1.	Volume of fresh water on-loaded at port(m ³)											
Div.B2.	Volume of waste accepted for disposal (solid, liquid) at port(m ³)										✓	
Div.C1.	Number of berths and moorings for recreational boating											
Div.D1.	Existence of up to date tourism plans and policies(YES/NO)								✓	✓		

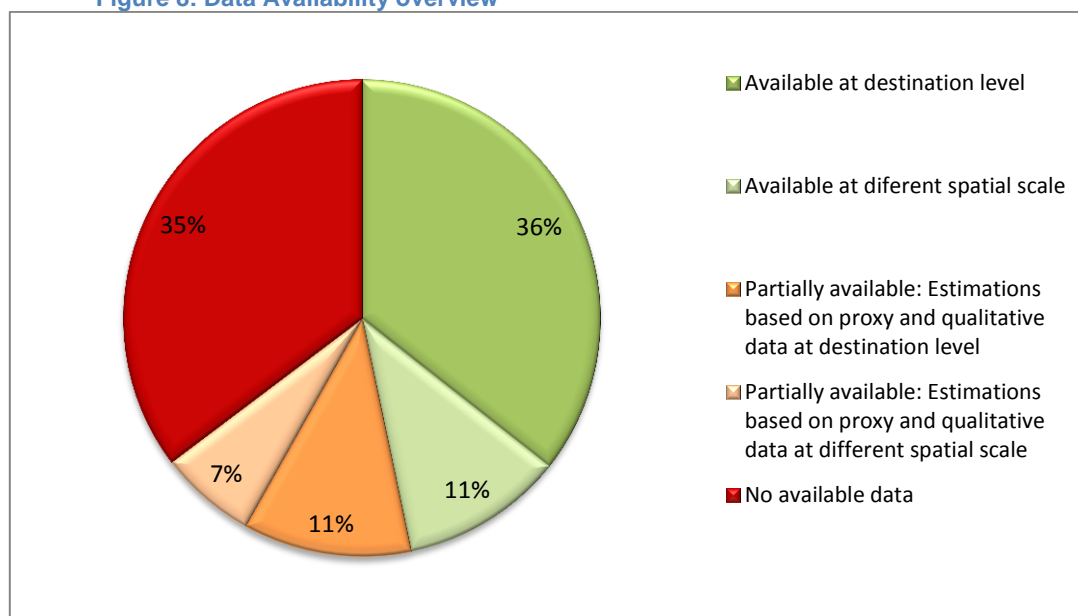
Div.D2.	Existence of a land use or development plan(YES/NO)								✓	✓		
Div.D8.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)											
Div.D11.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)			✓					✓	✓		
Destination Indicators: Dv.Nature/Ecotourism		1A	1B	2A	2B	3A	3B	4	5A	5B	6	7
Dv.A3.	Total number of visitors to parks and to key sites		✓		✓	✓	✓			✓		✓
Dv.B1.	Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)		✓		✓	✓			✓	✓		✓
Dv.B5.	N° of visitors acceptable, according to the capacity of the equipment and facilities of the site (depends on capacity studies establishing limits)					✓						
Dv.C1.	% of site area occupied by rare or unique species		✓		✓	✓	✓					✓
Dv.C2.	% of endemic species at the site		✓		✓	✓	✓		✓	✓		✓
Dv.D1.	Existence of up to date tourism plans and policies(YES/NO)		✓		✓	✓			✓	✓		✓
Dv.D2.	Existence of environmental plan and management(YES/NO)		✓		✓	✓			✓	✓		✓
Dv.D10.	Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)				✓	✓						✓
Dv.D13.	Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)				✓	✓						✓

Source: UTH elaboration

- Data available at destination scale
- Data available at different spatial scale
- Partially available data: Estimations based on proxy and qualitative data at destination level
- Partially available data: Estimations based on proxy and qualitative data at different spatial scale
- No available data

As it is clear from the Data availability Matrix, data at Co-Evolve pilot areas is not homogeneous and important data gaps are involved. As shown in Figure 8, only 36% of the required data is available at destination level at present whereas 35% is not available at all. Moreover, there are major inconsistencies in spatial resolution since 18% of the data is available at different spatial scale (municipality or even NUTS3 unit) from which 7% is built on estimations from proxy or qualitative data. This type of data requires special attention since they may lead to misleading results at destination level. Temporal inconsistencies also pose important barriers in cross-cutting analysis among the pilot areas, since most of the PAs refer to different time periods.

Figure 8: Data Availability overview



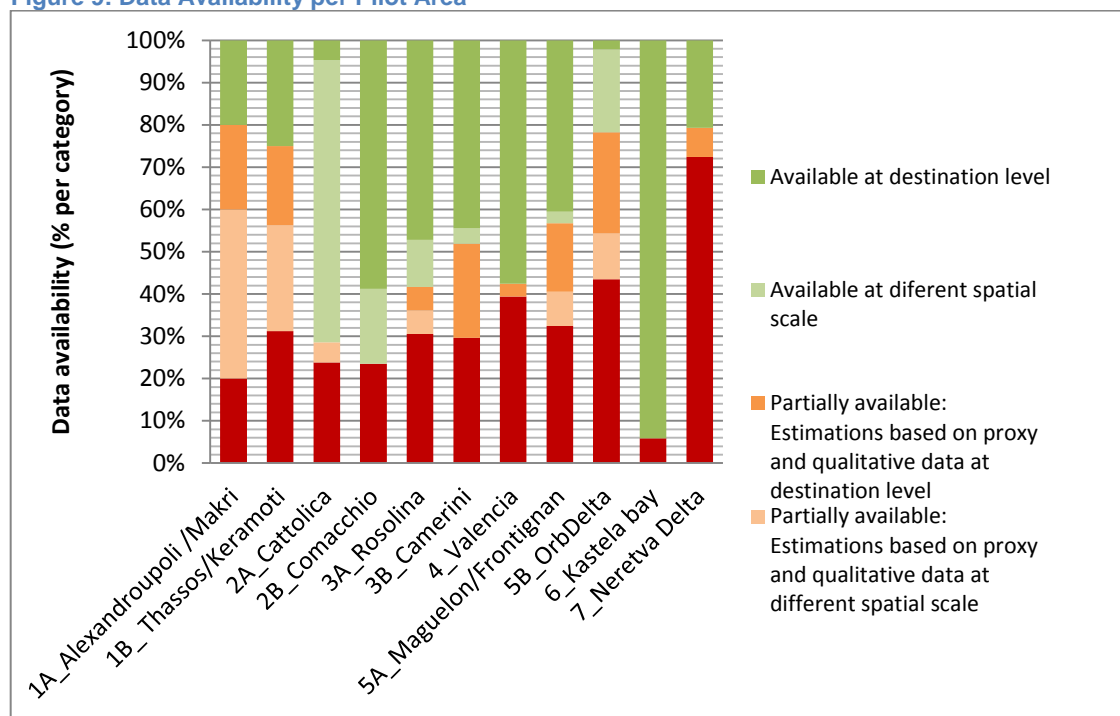
Source: UTH elaboration

The most extensive data gaps are recorded in Neretva River Delta (PA 7) where more than 70% of the data is not available (or at least not accessible), followed by Orb Delta (43%), Valencia (40%) and the rest of the pilot areas which range between 20% to 30% (Figure 9). The only exception is Kastela bay (PA 6) where only 6% of the data is currently not available at all.

Serious gaps are recorded in Aleksandroupoli/Makri and Thassos/Keramoti where most of the data (60% and 43% respectively) are estimations based on proxy or qualitative data with most of it available at different spatial scales.

Few of the pilot areas slightly exceed 50% availability at destination level with the exception of Kastela bay (PA 7) where more than 90% of the data is available at destination level.

Figure 9: Data Availability per Pilot Area



Source: UTH elaboration

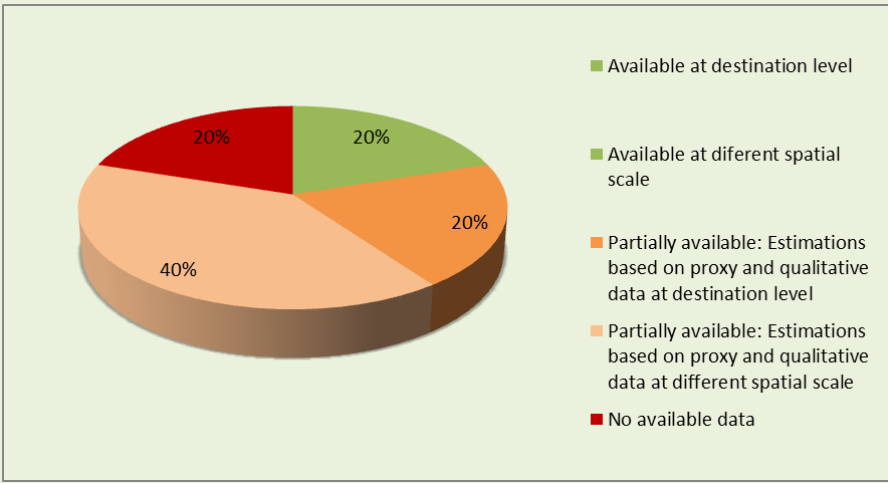
A first attempt to outline the thresholds for the sustainability indicators was made through a set of queries including satisfaction levels (in relation to the current value/state for each indicator) and trends evaluation. However, less than 10% of the respective queries were finally completed due to lack of data and essential information. Therefore, even in cases where data availability allows for accurate analysis, thresholds still need to be defined in order to assess sustainability at destinations. As highlighted by Acosta-Alba I. and Werf H. (2011) “*it is not the absolute values of the indicators that reveal whether the impact of a system is acceptable, but rather the distance between these values and some reference values*”. The definition of reference values is a complex process that needs to incorporate both scientific understanding and political judgments (Acosta-Alba I. and Werf H., 2011; Addison et al., 2015). Since thresholds inevitably involve a scientific and political dimension, special efforts should be given to actively involve stakeholders and experts in the process of determining the limits upon which to implement, evaluate and monitor future activities and tourism policies.

4. Sustainability analysis at PA level

The current chapter presents a first attempt for measuring and assessing sustainability at pilot area level. The customized sustainability toolkits developed within the Co-Evolve project according to the methodological framework presented in Task 3.17.1, constitute a starting point for measuring and monitoring tourism development in the pilot areas. They also constitute a basic guide for data collection and evaluation on key issues of tourism development. At a later stage, it is strongly suggested that each pilot area integrates the complete sets of Core and Destination Indicators presented in Co-Evolve's Priority Indicators List (see Task 3.16.2).

The customized sustainability toolkits are presented in the following tables per pilot area. The tables also include the key messages that derive from the evaluation of the available data and the additional information on trends and satisfaction levels provided by the Pilot Area Coordinators. A key step in order to fully and accurately assess sustainability at pilot area level is the definition of thresholds through participatory processes with local stakeholders and experts. The workshops and seminars foreseen in **Work Package 4: Testing** can act as a starting point towards the integration of stakeholders' perception in the evaluation process and their active participation in future planning processes.

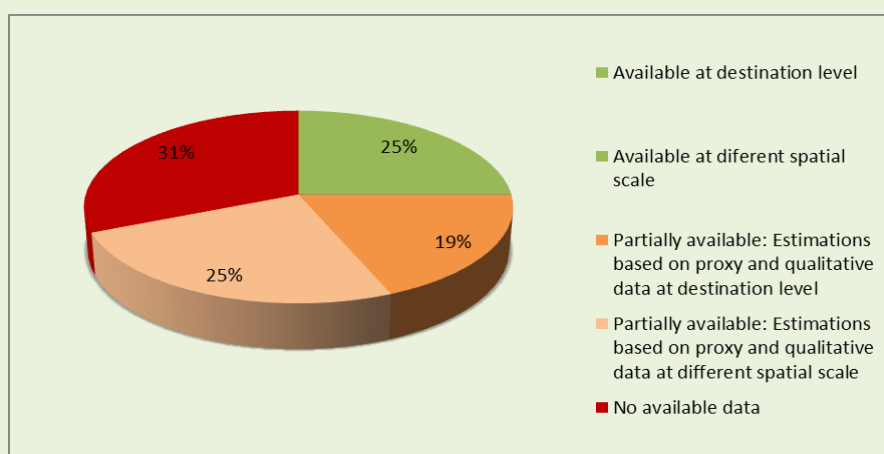
Pilot Area	1A. Alexandroupoli /Makri
Partner	Region of East Macedonia and Thrace
RESULTS	
Synopsis	The results show significant opportunities for tourism development, mostly in the field of beach and maritime tourism, constrained by important inconsistencies in the implementation and monitoring of tourism related policies and actions at destination level.
Customized Tourism Sustainability Toolkit	Core indicators
	C.B1.1. Number of tourist nights per month
	C.B2.1. Average length of stay of tourists (nights)
	C.B3.1. Direct tourism employment as % of total employment in the destination
	C.C1.1. Number of tourists/visitors per 100 residents
	C.D5.2. % of tourism enterprises taking actions to reduce water consumption
	C.D6.2. % of tourism enterprises that take actions to reduce energy consumption
	C.D6.3. % of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
	Destination Indicators: Di.Beach/Maritime tourism
	Di.A4. Number of second homes per 100 homes in coastal zones*
	Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*

	<p>Di.C2. % of beaches awarded the Blue Flag</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.6. Coastal flooding events per year(number)</p> <p>P.A5.1. Total use of water by tourism sector (Tourism as a % of all users)</p> <p>P.B1.1. Existence of a coastal planning management system</p> <p>P.B1.2. Length of protected and defended coastline (km)</p>
Data Availability Overview	 <p> ■ Available at destination level ■ Available at different spatial scale ■ Partially available: Estimations based on proxy and qualitative data at destination level ■ Partially available: Estimations based on proxy and qualitative data at different spatial scale ■ No available data </p>
Key messages from final measurement and data evaluation	<p>The data available is very limited for accurate interpretation and include many qualitative estimations and spatial inconsistencies. Data coming from official statistical sources is rarely available and in most cases at a municipal level. Data availability at destination level is limited to estimations from municipal authorities, showing important gaps in measuring and monitoring.</p> <p>Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years. Also, satisfaction levels on key issues are difficult to be defined at this stage. Even when estimated, they only represent the perspective of official municipal authorities instead of an overall perspective of official authorities, experts, public and private stakeholders involved in tourism sector.</p> <p>In a preliminary assessment, tourism in Alexandroupoli/Makri needs to increase in both tourism flows and related infrastructure. Tourism plans and policies seem to focus only on the development of beach and maritime tourism which is mainly attributed to the rich natural resources of the pilot area (e.g. all beaches are awarded with Blue Flag and have excellent water quality - although lacking infrastructure in some cases). Tourism and land use planning as well as coordinating mechanisms for MSP/ICZM exist but are not always implemented or functioning. The municipality is strongly focusing on increasing coastline protection measures, especially from erosion and coastal flooding, in order to support the co-evolution of tourism with the environment.</p>
Suggestions for future evaluation and monitoring	<p>Future efforts should focus on integrating indicators related to governance factors (currently not considered of high priority) and management and optimization of the pilot area's key assets, especially in the case of beach and maritime tourism.</p>

Source: UTH elaboration

Pilot Area	1B. Thassos/Keramoti
Partner	Region of East Macedonia and Thrace
RESULTS	
Synopsis	The results partly reveal significant opportunities for tourism development in the area, mainly in the field of nature/ecotourism, but the respective data is considerably limited in order to fully assess the dynamics of tourism development at the destination.
Customized Tourism Sustainability Toolkit	Core Indicators <ul style="list-style-type: none"> C.B1.1 Number of tourist nights per month C.B2.1. Average length of stay of tourists (nights) C.B .1. Direct tourism employment as % of total employment in the destination C.C1.1. Number of tourists/visitors per 100 residents C.D3.1. Waste production per tourist night compared to general population waste production per person (kg) C.D5.2. % of tourism enterprises taking actions to reduce water consumption C.D6.2. % of tourism enterprises that take actions to reduce energy consumption C.D6.3. % of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year C.D7.1. % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes
	Destination Indicators: Di.Beach/Maritime tourism <ul style="list-style-type: none"> Di.A4. Number of second homes per 100 homes in coastal zones* Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones* Di.C2. % of beaches awarded the Blue Flag Di.D1. Existence of up to date tourism plans and policies (YES/NO) Di.D2. Existence of a land use or development plan (YES/NO)
	Destination Indicators: Dv.Nature/Ecotourism <ul style="list-style-type: none"> Dv.A3. Total number of visitors to parks and to key sites Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area) Dv.C1. % of site area occupied by rare or unique species Dv.C2. % of endemic species at the site Dv.D1. Existence of up to date tourism plans and policies(YES/NO) Dv.D2. Existence of environmental plan and management(YES/NO)
	Pilot area-specific indicators <ul style="list-style-type: none"> P.A1.2. % shoreline subjected to erosion P.A1.6. Coastal flooding events per year(number) P.A5.1. Total use of water by tourism sector (Tourism as a % of all users) P.B1.1. Existence of a coastal planning management system P.B1.2. Length of protected and defended coastline (km)

Data Availability Overview



Key message from final measurement and data evaluation

The data available is very limited for accurate interpretation and include important spatial inconsistencies. Data coming from official statistical sources is rarely available and in most cases at a municipal level. Data availability at destination level is limited to estimations from municipal authorities or existing academic studies, thus showing **important gaps in measuring and monitoring**.

Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years while thresholds based on satisfaction levels could not be defined at this stage.

In a preliminary assessment, the pilot area of Thassos/Keramoti needs and aims to attract more quality tourism (in terms of spending per capita) as well as to limit seasonality and expand its tourism period.

Tourism plans and policies seem to focus mainly on the development of nature and ecotourism and far less on beach and maritime tourism. This is mainly attributed to the fact that Keramoti is a settlement within a protected area with important natural resources to support the development of ecotourism activities. However, considerable lack of data is observed in recording and monitoring both sites and species (e.g. state, number and conservation status) within the limits of the protected area in order to fully assess the dynamics of tourism development at the destination. Since most infrastructure activities are restricted by the protection framework of the area, Thassos/Keramoti is mostly focusing on increasing coastline protection measures to prevent erosion and coastal flooding.

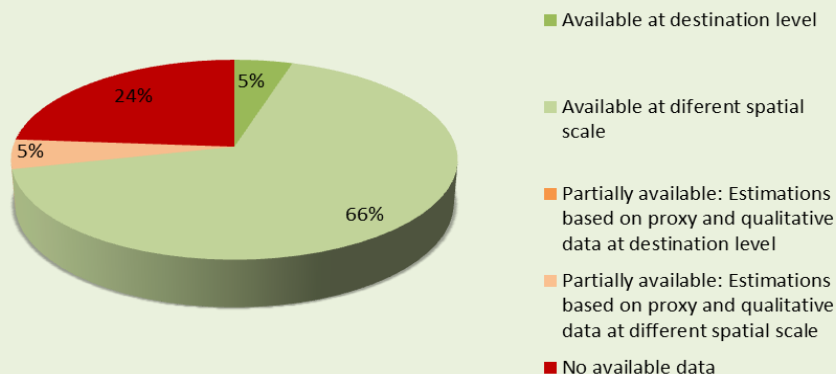
Suggestions for future evaluation and monitoring

Special attention should be given in **recording and monitoring the key assets for the development of ecotourism in the area (threatened sites, endangered and endemic species) as well as monitoring the actual implementation of tourism and environmental plans and policies**.

Source: UTH elaboration

Pilot Area	2A. Cattolica
Partner	Emilia-Romagna Region
RESULTS	
Synopsis	<p>The results clearly reveal significant but declining tourism flows at the pilot area as well as a strong effort to limit littoralization in the area and re-direct tourism activities to more sustainable practices. The data available, especially in the fields of beach/maritime tourism and recreational boating that represent the key areas of interest at the destination, is very limited in order to fully assess the dynamics and future prospects of tourism development at the pilot area.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.B3.1 Direct tourism employment as % of total employment in the destination</p> <p>C.C1.1. Number of tourists/visits per 100 residents</p> <p>Destination Indicators: Di.Beach/Maritime tourism</p> <p>Di.B1. number of tourist infrastructure (hotels, other) located in coastal zones*</p> <p>Di.C2. % of beaches awarded the Blue Flag (2017)</p> <p>Di.C3. Costs of erosion-protection measures (e.g. sea walls.)</p> <p>Di.C4. Beach nourishment: sand volume and extension of the restored beach (m3 and m2)</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Div.Recreational boating (Yachting/Marinas)</p> <p>Div.A2. Number of yachts per year (by month)</p> <p>Div.A4. Average duration of stay in port (in days)</p> <p>Div.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.3. Coastal area in degraded condition (low/medium/high)</p> <p>P.A1.6. Coastal flooding events per year(number)</p> <p>P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.B4.8. Volume (m³) of sediments dredged per year</p> <p>P.C1.2. % environmental, social, cultural actions recommended in plan which have been implemented</p> <p>P.C3.1. Level of tourism sector involvement in public policy (advisory bodies, review panels etc)</p>

Data Availability Overview



Key message from final measurement and data evaluation

The data available is very limited for accurate interpretation and include important spatial inconsistencies (e.g. data available only at NUTS3 unit). However, there is important data input from official statistical agencies and documents, showing a clear trend in measuring and monitoring, which could be used as a starting basis to extract conclusions at destination scale through participatory workshops with local stakeholders.

Moreover, limited information is currently available regarding the trends of highly prioritized indicators over the past years while thresholds based on satisfaction levels could not be defined at this stage.

Although the ratio between tourists and residents at a regional level seems to be increasing, the number of tourist infrastructure (hotels, other) located in coastal zones is decreasing. In connection to the tourism development patterns (mainly beach/maritime tourism and recreational boating) and the strong focus on coastal protection measures (Costs of erosion-protection measures, Beach nourishment, Length of protected and defended coastline etc), the results indicate the need and **effort of the pilot area to limit littoralization** and re-direct tourism activities to more sustainable practices. Although the development of beach and maritime tourism is clearly supported by tourism and land use plans and policies, spatial inconsistencies do not allow an accurate assessment of the dynamics of tourism development at the destination at this point (as well as in the case of recreational boating).

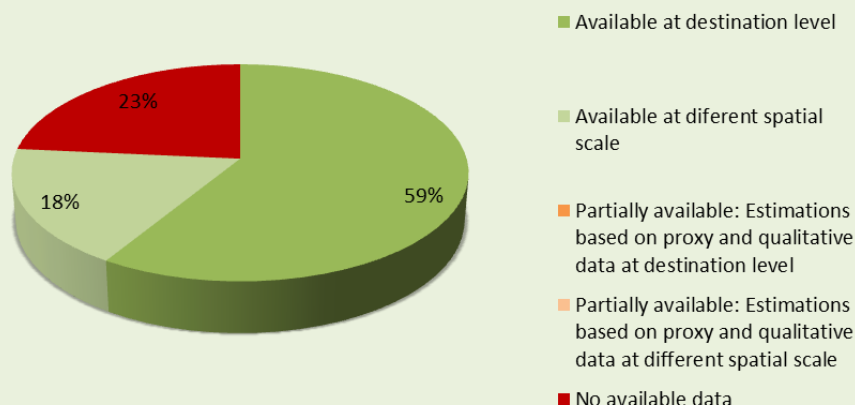
Suggestions for future evaluation and monitoring

Special attention should be given in **measuring and monitoring environmental indicators related to the changes and the protection of the coastal zone as well as measuring and monitoring recreational boating activities in the pilot area.**

Source: UTH elaboration

Pilot Area	2B. Comacchio
Partner	Emilia-Romagna Region
RESULTS	
Synopsis	<p>The results show declining environmental conditions in terms of biodiversity and habitat loss which are highly correlated to the development of ecotourism activities. The area needs to make important efforts in order to reach sustainable development levels and define the boundaries/thresholds on which to build future plans and policies.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.B3.1. Direct tourism employment as % of total employment in the destination</p> <p>C.C1.1. Number of tourists/visitors per 100 residents</p> <p>Destination Indicators: Dv.Nature/Ecotourism</p> <p>Dv.A3. Total number of visitors to parks and to key sites</p> <p>Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)</p> <p>Dv.B5. N° of visitors acceptable, according to the capacity of the equipment and facilities of the site (depends on capacity studies establishing limits)</p> <p>Dv.C1. % of site area occupied by rare or unique species</p> <p>Dv.C2. % of endemic species at the site</p> <p>Dv.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Dv.D2. Existence of environmental plan and management(YES/NO)</p> <p>Dv.D10. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Dv.D13. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.3. Coastal area in degraded condition (low/medium/high)</p> <p>P.A1.6. Coastal flooding events per year(number)</p> <p>P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %)</p> <p>P.A2.2. % of area designated for tourism purposes</p> <p>P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)</p> <p>P.A3.3. Water use (total volume in liters or m³ consumed and liters per tourist per day)</p> <p>P.A4.2. Rate of loss of protected areas</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.B4.8. Volume (m³) of sediments dredged per year</p> <p>P.C3.1. Level of tourism sector involvement in public policy (advisory bodies, review panels etc)</p>

Data Availability Overview



Key message from final measurement and data evaluation

Spatial inconsistencies are clearly limited in the case of Comacchio. However, the availability of data related to tourism flows at NUTS3 level and the complete lack of data related to the main tourism activity of the area (nature/ecotourism) do not allow for an accurate assessment of the dynamics of tourism development at this stage. More specifically, there seems to be **important gaps in measuring** socio-economic aspects and key assets for tourism development at the destination.

There is also significant information regarding the trends of highly prioritized indicators over the past years whereas thresholds based on satisfaction levels could not be defined at this stage.

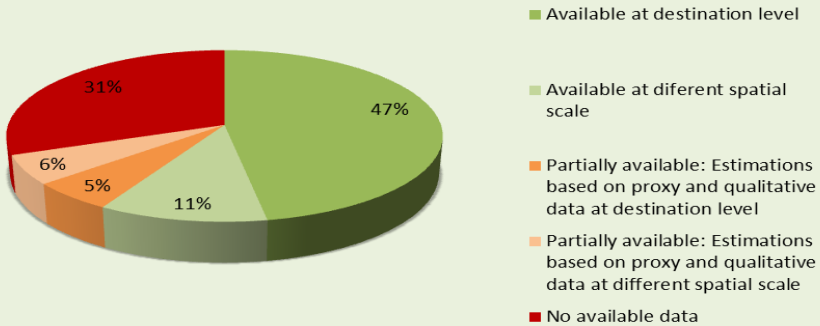
Tourism plans and policies seem to focus mainly on the development of nature and ecotourism, which can be attributed to the protected dune area within Comacchio municipality (Po Delta Park). However, given the increasing trends in damaged/threatened ecosystems, degraded coastal areas, erosion levels as well as the decreasing presence of endemic species at the site, the pilot area needs to overcome important barriers in order to reach sustainable development levels.

Suggestions for future evaluation and monitoring

Special attention should be given in **recording and monitoring the key assets for the development of ecotourism in the area (threatened sites, endangered and endemic species), socio-economic indicators related to tourism flows and spatial concentration as well as monitoring the actual implementation of tourism and environmental plans and policies.**

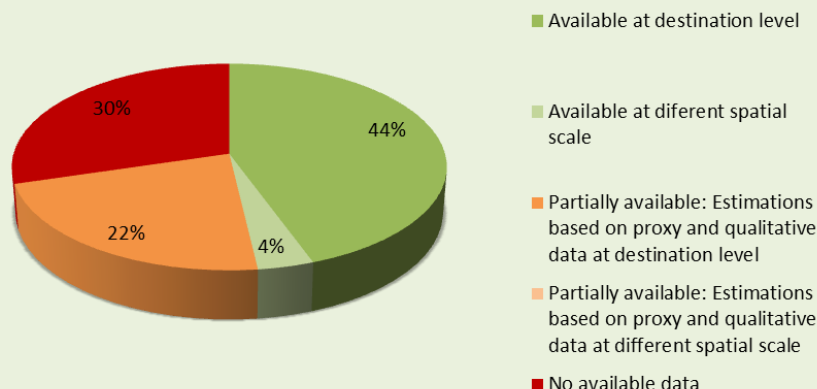
Source: UTH elaboration

Pilot Area	3A. Rosolina
Partner	Po Delta Park Veneto Region Authority
RESULTS	
Synopsis	<p>The results clearly show high tourism flows and spatial concentration in the pilot area as well as critical environmental issues related to littoralization and coastal erosion. The area needs to make important efforts in order to define the boundaries/thresholds on which to build and evaluate future plans and policies.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.A1.1. % of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and / r Corporate Soc al Responsibility</p> <p>C.B1.1. Number of tourist nights per month</p> <p>C.C1.1. Number of tourists/visitors per 100 residents</p> <p>C.D7.1. % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes</p> <p>Destination Indicators: Di.Beach/Maritime tourism</p> <p>Di.A4. Number of second homes per 100 homes in coastal zones*</p> <p>Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*</p> <p>Di.C3. Costs of erosion-protection measures (e.g. sea walls.)</p> <p>Di.C4. Beach nourishment: sand volume and extension of the restored beach (m3 and m2)</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Dii.Urban/Cultural tourism</p> <p>Dii.A3. % of total tourists visiting in peak month and average for the year</p> <p>Dii.B1. Total number of tourists per square Km in key sites (crowding/spatial distribution)</p> <p>Dii.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Dii.D2. Existence of a land use or development plan(YES/NO)</p> <p>Dii.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Dii.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Dv.Nature/Ecotourism</p> <p>Dv.A3. Total number of visitors to parks and to key sites</p> <p>Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)</p> <p>Dv.B5. N° of visitors acceptable, according to the capacity of the equipment and facilities of the site (depends on capacity studies establishing limits)</p> <p>Dv.C1. % of site area occupied by rare or unique species</p> <p>Dv.C2. % of endemic species at the site</p> <p>Dv.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Dv.D2. Existence of environmental plan and management(YES/NO)</p> <p>Dv.D10. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO) à P.I.</p> <p>Dv.D13. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.3. Coastal area in degraded condition (low/medium/high)</p>

	<p>P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %)</p> <p>P.A2.2. % of area designated for tourism purposes</p> <p>P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)</p> <p>P.A4.2. Rate of loss of protected areas</p> <p>P.B1.1. Existence of a coastal planning management system</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.B4.8. Volume (m³) of sediments dredged per year</p>
Data Availability Overview	 <p> ■ Available at destination level ■ Available at different spatial scale ■ Partially available: Estimations based on proxy and qualitative data at destination level ■ Partially available: Estimations based on proxy and qualitative data at different spatial scale ■ No available data </p>
Key message from final measurement and data evaluation	<p>The data available includes several estimations, proxy calculations and spatial inconsistencies. However, there is important data input from official statistical agencies and documents, showing a clear trend in measuring and monitoring, which could be used as a starting basis to extract conclusions at destination scale through participatory workshops with local stakeholders.</p> <p>Data regarding tourism flows are mostly available at the municipal level whereas there are important data gaps in measuring and monitoring key aspects of sustainability in the main fields of tourism activity in the area (Beach/Maritime, Urban/Cultural tourism, Nature/Ecotourism).</p> <p>Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years. Also, thresholds based on satisfaction levels could not be defined at this stage.</p> <p>Although the available data does not allow for an accurate assessment of the dynamics of tourism development at this stage, tourism in Rosolina shows important growth rates with high seasonality regarding tourism arrivals during the year (peak values during summer months). The ratio between visitors and residents as well as the number of tourists per square Km in key sites indicates critical spatial concentration levels (especially during summer season). The percentage of the area designated for tourism purposes exceeds 40% of the pilot area while approximately 3% within the first 500m. of coast is occupied by artificial surfaces. In correlation to the total of 41% of tourist infrastructure located in the coastal zone at the municipal level, there is a clear trend of high littoralization degree in the pilot area. In association with the degree of the coastal area in degraded condition as well as the overwhelming percentage of shoreline erosion (93%), Rosolina faces important risks regarding the sustainable co-evolution of tourism and environment.</p> <p>Although tourism development plans and land use management mechanism exist, there is no monitoring system to evaluate existing plans and policies.</p>
Suggestions for future evaluation and monitoring	<p>Special attention should be given in recording and monitoring environmental factors (especially regarding littoralization and coastal erosion), management of key assets for the development of tourism activities in the area, socio-economic indicators related to tourism flows and spatial concentration as well as monitoring and evaluating existing and future plans and policies.</p>

Pilot Area	3B. Camerini
Partner	Po Delta Park Veneto Region Authority
RESULTS	
Synopsis	<p>The results show high potential for sustainable tourism development while special attention is required for managing and monitoring tourism flows in order not to exceed the carrying capacity of the area. The definition of boundaries/thresholds is vital towards this goal in order to be used as guidance for future plans and policies.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.A1.1. % of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility</p> <p>C.B1.1. Number of tourist nights per month</p> <p>C.B3.1. Direct tourism employment as % of total employment in the destination</p> <p>C.C1.1. Number of tourists/visitors per 100 residents</p> <p>C.D7.1. % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes</p> <p>Destination Indicators: Di.Beach/Maritime tourism</p> <p>Di.A4. Number of second homes per 100 homes in coastal zones*</p> <p>Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*</p> <p>Di.C3. Costs of erosion-protection measures (e.g. sea walls.)</p> <p>Di.C4. Beach nourishment: sand volume and extension of the restored beach (m3 and m2)</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Dii.Urban/Cultural tourism</p> <p>Dii.B1. Total number of tourists per square Km in key sites (crowding/spatial distribution)</p> <p>Destination Indicators: Div.Recreational boating (Yachting/Marinas)</p> <p>Div.A2. Number of yachts per year (by month)</p> <p>Destination Indicators: Dv.Nature/Ecotourism</p> <p>Dv.A3. Total number of visitors to parks and to key sites</p> <p>Dv.C1. % of site area occupied by rare or unique species</p> <p>Dv.C2. % of endemic species at the site</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.3. Coastal area in degraded condition (low/medium/high)</p> <p>P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %)</p> <p>P.A2.2. % of area designated for tourism purposes</p> <p>P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)</p> <p>P.A4.2. Rate of loss of protected areas</p> <p>P.B1.1. Existence of a coastal planning management system</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.B4.8. Volume (m³) of sediments dredged per year</p>

Data Availability Overview



Key message from final measurement and data evaluation

The data available includes several estimations and proxy calculations while no information is currently available regarding the trends of highly prioritized indicators over the past years. Also, thresholds based on satisfaction levels could not be defined at this stage.

However, there is important data input from official statistical agencies and documents, showing a clear trend in measuring and monitoring, which could be used as a starting basis to extract conclusions at destination scale through participatory workshops with local stakeholders.

The pilot area of Camerini shows **high potential for increasing its market share** with main focus on beach and maritime tourism as well as ecotourism activities. Based on municipality's data, the area is characterized by high seasonality and increased tourism arrivals during summer months, with peak arrivals observed in August. The ratio between visitors and residents as well as the number of tourists per square Km in key sites requires **monitoring and evaluation in order not to exceed the carrying capacity of the area**. The percentage of the area designated for tourism purposes does not exceed 2% of the pilot area while approximately 2% within the first 500m. of coast is occupied by artificial surfaces. The length of the protected coastline is 17km, while shoreline erosion reaches 36%. Based on the data provided, the pilot area of Camerini currently does not face important littoralization issues or coastal degradation risks.

Suggestions for future evaluation and monitoring

Special attention should be given in **measuring and monitoring socio-economic indicators related to tourism flows and spatial concentration as well as managing the key assets related to the key types of tourism activities developed in the area**.

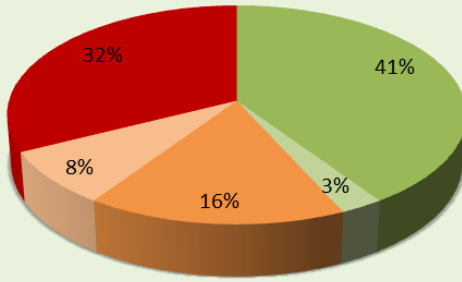
Source: UTH elaboration

Pilot Area	4. Valencia
Partner	FUNDACIÓN INSTITUTO PORTUARIO DE ESTUDIOS Y COOPERACIÓN DE LA COMUNIDAD VALENCIANA
RESULTS	
Synopsis	The results show high tourism growth rates and significant potential for sustainable tourism development, mainly in the field of the cruise sector. Special attention is required in managing and monitoring tourism flows in order not to exceed the carrying capacity of the area while boundaries/thresholds need to be defined in order to be used as guidance for future plans and policies.
Customized Tourism Sustainability Toolkit	Core indicators
	C.A1.1. % of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility
	C.B1.1. Number of tourist nights per month
	C.B2.1. Average length of stay of tourists (nights)
	C.B3.1. Direct tourism employment as % of total employment in the destination
	C.C1.1. Number of tourists/visitors per 100 residents
	C.D3.1. Waste production per tourist night compared to general population waste production per person (kg)
	C.D5.1. Water consumption per tourist night compared to general population water consumption per resident night
	C.D6.1. Energy consumption per tourist night compared to general population energy consumption per resident night
	C.D6.3. % of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
	Destination Indicators: Diii.Cruising
	Diii.A2 Total jobs directly attributable to cruise industry WTO (2004)
	Diii.A4. Number of ship visits per year (by month)
	Diii.A6. Average duration of stay in port (in days)
	Diii.A7 Total and average port fees and charges received per ship visit WTO (2004)
	Diii.A8. Average spending per cruise ship visitor (€)
	Diii.B1. Volume of fresh water on-loaded at port (m ³)
	Diii.B2. Volume of waste accepted for disposal (solid, liquid) at port (m ³)
	Diii.C1. Maximum capacity of docking facilities (number)
	Diii.C4 Access to public transportation systems(YES/NO) Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)
	Diii.C5. % visitors taking organized shore tours Plan Bleu (2011), WTO (2004), WTO and APTEC (2016)
	Diii.D1. Existence of up to date tourism plans and policies(YES/NO)
	Diii.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)
	Pilot area-specific indicators
	P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)
	P.C3.1. Level of tourism sector involvement in public policy (advisory bodies, review panels etc.)
	Added by PA % of cruise actors/companies in the destination using a voluntary verified certification/labelling for environmental/quality and sustainability
	Added by PA Number of cruise passenger per day/month
	Added by PA Direct cruise tourism employment as % of total tourism employment in the destination
	Added by PA Number of cruise passengers visiting the destination, per 100 residents
	Added by PA MARPOL V waste (m3/year) from cruises/ annual number of cruise passengers

	<p>Added by PA Fresh water consumption per cruise passenger compared to general population water consumption per person day</p> <p>Added by PA Energy consumption per cruise passenger compared to general population energy consumption per resident night</p> <p>Added by PA Share of port facilities' electrification provided by renewable sources at the destination</p> <p>Added by PA Availability of shore-side electricity at the port; Share of cruise ship calls that receive shore-side electricity; Share of port facilities' electrification provided by renewable sources at the destination/ LNG facilities (YES/NO)</p> <p>Added by PA Share of transport modes in cruisers mobility (%)</p>
Data Availability Overview	 <ul style="list-style-type: none"> Available at destination level Available at different spatial scale Partially available: Estimations based on proxy and qualitative data at destination level Partially available: Estimations based on proxy and qualitative data at different spatial scale No available data
Key message from final measurement and data evaluation	<p>Spatial inconsistencies and estimations are considerably limited in the case of Valencia while most of the available data is retrieved from official statistical offices and organizations, showing a solid basis in measuring and monitoring sustainability. A significant part of the data not yet available is planned to be measured in future activities at pilot area scale.</p> <p>Moreover, there is significant input regarding the trends of highly prioritized indicators over the past years. However, satisfaction levels on key issues are difficult to be defined at this stage and even when estimated, they still do not represent the overall perspective of official authorities, experts, public and private stakeholders involved in tourism.</p> <p>Taking into account socio-economic data, Valencia shows significant growth rates and high potential for increasing its share in the tourism market, with the main focus on cruising activities. Both number of tourists and overnight stays show increasing trends over the past decade while specifically for the cruise sector, the number of ship calls has increased almost 120% during the past years. Although the average spending per cruise visitor seems to be declining, the total and average port fees and charges received per ship call have increased over the past decade (on average 1360€ per ship call). Based on the satisfaction levels defined at this point, there seems to be important room for further development in the cruising sector on the issues described above and especially on the number of cruise passenger per month and the number of cruise passenger per day. Special attention should be given in future plans and policies in order not to exceed the carrying capacity of the area, especially since the maximum capacity of docking facilities and the ratio between visitors (and cruisers) and residents seems to reach the capacity and satisfaction levels.</p> <p>Although data on accessibility issues is measured and monitored, there is important lack of data regarding very important environmental issues related to the cruise industry (such as water consumption, waste disposal, energy use etc.) in order to fully assess the sustainability of tourism activities at the area.</p>
Suggestions for future evaluation and monitoring	<p>Special attention should be given in measuring and monitoring socio-economic indicators related to tourism flows and spatial concentration as well as measuring and monitoring environmental aspects and impact from cruising activities.</p>

Source: UTH elaboration

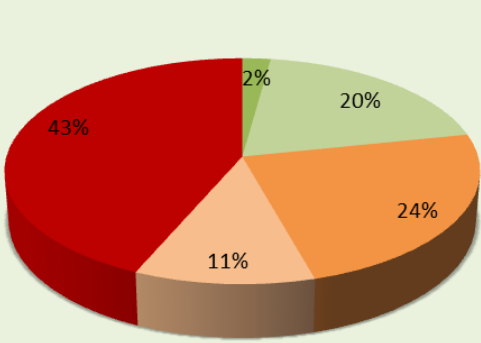
Pilot Area	5A. Maguelon/Frontignan
Partner	Department of Herault
RESULTS	
Synopsis	<p>The results show a clear trend towards diversifying the tourism product and enhancing environmental actions, especially regarding the coastal zone. Special attention should be given to tourism flows, both in measuring and monitoring, at the destination level in order to fully assess the dynamics and future prospects for tourism development. The establishment of coordinating mechanisms and thresholds for tourism development is considered crucial towards this goal.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.A1.1. % of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility</p> <p>C.B1.1. Number of tourist nights per month</p> <p>C.B2.1. Average length of stay of tourists (nights)</p> <p>C.B3.1. Direct tourism employment as % of total employment in the destination</p> <p>C.C1.1. Number of tourists/visitors per 100 residents</p> <p>C.D5.2. % of tourism enterprises taking actions to reduce water consumption (Campground enterprises)</p> <p>C.D7.1. % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes</p>
	<p>Destination Indicators: Di.Beach/Maritime tourism</p> <p>Di.A4. Number of second homes per 100 homes in coastal zones*</p> <p>Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*</p> <p>Di.C2. % of beaches awarded the Blue Flag</p> <p>Di.C3. Costs of erosion-protection measures (e.g. sea walls.)</p> <p>Di.C4. Beach nourishment: sand volume and extension of the restored beach (m3 and m2)</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p>
	<p>Destination Indicators: Dii.Urban/Cultural tourism</p> <p>Dii.A3. % of total tourists visiting in peak month and average for the year</p> <p>Dii.C4. % of sites under a management and monitoring system for protection of cultural sites</p> <p>Dii.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Dii.D2. Existence of a land use or development plan(YES/NO)</p>

	<p>Dii.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Dii.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Div.Recreational boating (Yachting/Marinas)</p> <p>Div.A2. Number of yachts per year (by month)</p> <p>Div.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Div.D2. Existence of a land use or development plan(YES/NO)</p> <p>Div.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Dv.Nature/Ecotourism</p> <p>Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)</p> <p>Dv.C2. % of endemic species at the site</p> <p>Dv.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Dv.D2. Existence of environmental plan and management(YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A2.2. % of area designated for tourism purposes</p> <p>P.B1.1. Existence of a coastal planning management system</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.A4.3. Percentage of bathing sites with excellent water quality</p> <p>P.B2.6. Implementation of Natura 2000 management plans</p> <p>Added by PA Tourism fluxes between urban zone and natural area (complementary zones)</p>
Data Availability Overview	 <ul style="list-style-type: none"> Available at destination level Available at different spatial scale Partially available: Estimations based on proxy and qualitative data at destination level Partially available: Estimations based on proxy and qualitative data at different spatial scale No available data
Key message from final measurement and data evaluation	<p>The data available is very limited for accurate interpretation and includes important spatial inconsistencies and approximations (e.g. data available only at NUTS3 unit). However, there is important data input from official statistical agencies, tourism boards and studies, showing a clear trend in measuring and monitoring, which could be used as a starting basis to extract conclusions at</p>

	<p>destination scale through participatory workshops with local stakeholders.</p> <p>Satisfaction levels on key issues are difficult to be defined at this stage. Even when estimated, they only represent the perspective of official municipal authorities instead of an overall perspective of official authorities, experts, public and private stakeholders involved in tourism sector.</p> <p>The pilot area shows a clear intent to diversify its tourism product by investing in several types of tourism activities such as maritime and cultural tourism, ecotourism and recreational boating and, at the same time, increase actions towards environmental sustainability (e.g. ecolabelling and reduced water consumption). It also seems to undertake actions towards the protection of the coastal zone from tourism expansion and erosion and thus stabilize its littoralization degree. Existing tourism plans and policies, land use and environmental plans also contribute to this direction. However, there seems to be a significant lack of evaluation and monitoring mechanisms in order to assess the efficacy of such plans and actions. Finally, there is limited data input regarding tourism flows and spatial concentration (in terms of both visitors and infrastructure) at destination scale in order to accurately estimate current impacts and future trends.</p>
<p>Suggestions for future evaluation and monitoring</p>	<p>Future efforts should emphasize in establishing evaluation and monitoring mechanisms as well as in measuring and monitoring socio-economic indicators related to tourism flows and spatial concentration.</p>

Source: UTH elaboration

Pilot Area	5B. Vias/Vendre Orb Delta
Partner	Department of Herault
RESULTS	
Synopsis	<p>The results indicate a differentiation from the standard sun and beach tourism model and a clear intent to develop alternative types of tourism activities. However, the respective data on the pilot area's key assets is considerably limited in order to fully assess the dynamics of tourism development at the destination. The establishment of measuring and monitoring mechanisms as well as the definition of thresholds for tourism development is considered crucial towards the sustainable development of the pilot area.</p>
Customized Tourism Sustainability Toolkit	<p>Core indicators</p> <p>C.A1.1. % of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility</p> <p>C.B1.1. Number of tourist nights per month</p> <p>C.B2.1. Average length of stay of tourists (nights)</p> <p>C.B3.1. Direct tourism employment as % of total employment in the destination</p> <p>C.C1.1. Number of tourists/visitors per 100 residents (peak period)</p> <p>C.D3.1. Waste production per tourist night compared to general population waste production per person (kg)</p> <p>C.D5.2. % of tourism enterprises taking actions to reduce water consumption</p> <p>C.D6.2. % of tourism enterprises that take actions to reduce energy consumption</p> <p>C.D7.1. % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes</p>
	<p>Destination Indicators: Di.Beach/Maritime tourism</p> <p>Di.A4. Number of second homes per 100 homes in coastal zones*</p> <p>Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*</p> <p>Di.C2. % of beaches awarded the Blue Flag</p> <p>Di.C3. Costs of erosion-protection measures (e.g. sea walls.)</p> <p>Di.C4. Beach nourishment: sand volume and extension of the restored beach (m3 and m2)</p> <p>Di.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Di.D2. Existence of a land use or development plan (YES/NO)</p> <p>Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p> <p>Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p>
	<p>Destination Indicators: Dii.Urban/Cultural tourism</p> <p>Dii.A3. % of total tourists visiting in peak month and average for the year</p> <p>Dii.C4. % of sites under a management and monitoring system for protection of cultural sites</p> <p>Dii.D1. Existence of up to date tourism plans and policies (YES/NO)</p> <p>Dii.D2. Existence of a land use or development plan(YES/NO)</p> <p>Dii.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)</p>

	<p>Dii.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Div.Recreational boating (Yachting/Marinas)</p> <p>Div.A2. Number of yachts per year (by month)</p> <p>Div.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Div.D2. Existence of a land use or development plan(YES/NO)</p> <p>Div.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)</p> <p>Destination Indicators: Dv.Nature/Ecotourism</p> <p>Dv.A3. Total number of visitors to parks and to key sites</p> <p>Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area)</p> <p>Dv.C2. % of endemic species at the site</p> <p>Dv.D1. Existence of up to date tourism plans and policies(YES/NO)</p> <p>Dv.D2. Existence of environmental plan and management(YES/NO)</p> <p>Pilot area-specific indicators</p> <p>P.A1.2. % shoreline subjected to erosion</p> <p>P.A1.3. Coastal area in degraded condition (low/medium/high)</p> <p>P.A1.6. Coastal flooding events per year(number)</p> <p>P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %)</p> <p>P.A2.2. % of area designated for tourism purposes</p> <p>P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)</p> <p>P.B1.1. Existence of a coastal planning management system</p> <p>P.B1.2. Length of protected and defended coastline (km)</p> <p>P.C1.2. % environmental, social, cultural actions recommended in plan which have been implemented</p> <p>P.A4.3. Percentage of bathing sites with excellent water quality</p> <p>P.B2.6. Implementation of Natura 2000 management plans</p> <p>Added by PA Tourism fluxes between urban zone, campgrounds zone and natural area (complementary zones)</p> <p>Added by PA Considering the important river, flooding risk (monitoring marine and river flooding risk) and population alarm process</p>
<p>Data Availability Overview</p>	 <p> ■ Available at destination level ■ Available at different spatial scale ■ Partially available: Estimations based on proxy and qualitative data at destination level ■ Partially available: Estimations based on proxy and qualitative data at different spatial scale ■ No available data </p>

**Key message
 from final
 measurement
 and data
 evaluation**

The data available includes several estimations, proxy calculations and spatial inconsistencies (e.g. data available only at NUTS3 or municipal level). However, there is important data input from official statistical agencies, tourism boards and studies, showing a clear trend in measuring and monitoring, which could be used as a starting basis to extract conclusions at destination scale through participatory workshops with local stakeholders.

There is also significant input regarding satisfaction levels and trends which, however, should be verified and updated in order to integrate the perspective of official authorities, experts, public and private stakeholders involved in the tourism sector.

The pilot area ***invests in several types of tourism activities and differentiates from the standard sun and beach tourism model*** developed in most Mediterranean destinations. However, there is significant ***lack of data regarding tourism flows and key assets for the development of tourism activities*** at the destination (especially in terms of cultural and ecotourism activities) in order to fully assess its dynamics and future prospects.

Significant effort is made in the field of environmental protection, especially regarding water consumption and coastal erosion, through the implementation of tourism plans and strategies and land use management policies. Tourism businesses also seem to be actively and increasingly involved in environmental actions to reduce the impacts of tourism activities at the destination. Special attention should be given in ***monitoring littoralization trends*** since almost 80% of tourism infrastructure is located in the coastal zone and 45% of the land within the 500m. of coast is occupied by artificial surfaces.

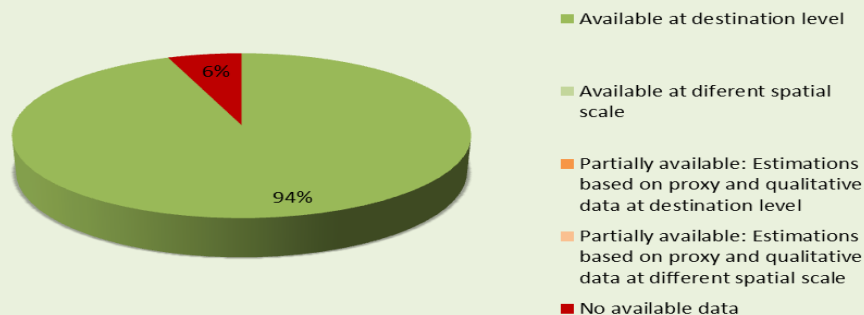
**Suggestions
 for future
 evaluation
 and
 monitoring**

Future efforts should focus on ***measuring and monitoring tourism flows and littoralization trends at the destination as well as on recording and monitoring its key assets, in order to support the development of alternative types of tourism activities (especially cultural tourism and ecotourism).***

Source: UTH elaboration

Pilot Area	6. Kastela
Partner	Public Institution RERA S.D. for Coordination and Development of Split Dalmatia County
RESULTS	
Synopsis	<p>The results show increasing potential in tourism development of the pilot area, which is characterized by a remarkably high littoralization degree and almost complete absence of existing tourism development plans and coordinating mechanisms. In this context, the definition or re-evaluation of sustainability thresholds is crucial for the revision of existing coastal development patterns and the formulation of future plans and policies.</p>
Customized Tourism Sustainability Toolkit	Core indicators
	C.B1.1. Number of tourist nights per month
	C.B2.1. Average length of stay of tourists (nights)
	C.C1.1. Number of tourists/visitors per 100 residents
	Destination Indicators: Di.Beach/Maritime tourism
	Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*
	Di.D1. Existence of up to date tourism plans and policies (YES/NO)
	Di.D2. Existence of a land use or development plan (YES/NO)
	Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO)
	Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO)
	Destination Indicators: Dii.Urban/Cultural tourism
	Dii.A3. % of total tourists visiting in peak month and average for the year
	Destination Indicators: Div.Recreational boating (Yachting/Marinas)
	Div.A2. Number of yachts per year (by month)
	Div.B2. Volume of waste accepted for disposal (solid, liquid) at port(m ³)
	Pilot area-specific indicators
	P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %)
	P.A2.2. % of area designated for tourism purposes
	P.A3.1. Total tourist numbers (mean, monthly, peak) (categorized by their type of activity)
	P.A3.3. Water use (total volume in liters or m ³ consumed and liters per tourist per day)
	P.A5.1. Total use of water by tourism sector (Tourism as a % of all users)
	P.B1.2. Length of protected and defended coastline (km)

Data Availability Overview



Key message from final measurement and data evaluation

No spatial inconsistencies and estimations are recorded in the case of Kastela while the available data is in most cases retrieved from official tourism boards and tourism related organizations, showing a ***solid basis in measuring and monitoring sustainability***. Moreover, there is significant input regarding satisfaction levels on key issues for tourism sustainability, although there is still need for re-assessment in order to fully incorporate the perspective of official authorities, experts, public and private stakeholders involved in the tourism sector.

In spite of the low share in tourism market, the pilot area shows increasing trends in important socio-economic aspects of tourism development and is characterized by high seasonality (concentrated during summer months) and prolonged average length of stay of tourists (5,5 nights). The area is mostly focusing on beach/maritime and recreational boating activities, showing satisfactory levels in resource management (water production and waste production).

Significant gaps exist regarding the existence of up to date tourism plans and policies, land use management and coordinating mechanisms for coastal area management. These gaps are mirrored in the remarkably ***high littoralization degree*** of the area and the limited measures for the protection of the coastal zone. Approximately 70% of tourist infrastructure is located in the coastal zone and 80% of the land within the first 500m of coast is occupied by artificial surfaces. Additionally, 70% of the shoreline is subjected to erosion while the limited (not satisfactory) costs for erosion-protection measures and beach nourishment further contribute to the degradation of the coast. ***Special attention should be given in re-defining development patterns and thresholds for tourism development in the area, especially in reviewing the existing linear coastal development model through the formulation and implementation of plans and policies.***

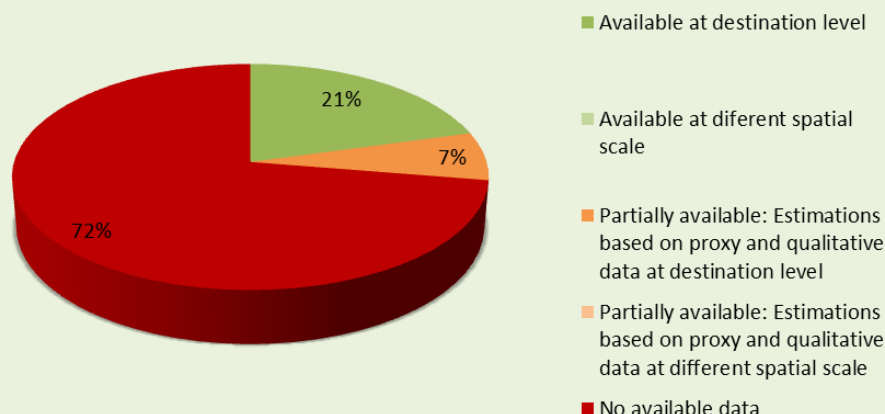
Suggestions for future evaluation and monitoring

Special attention should be given in ***measuring and monitoring socioeconomic and environmental factors related to littoralization and respective coastal protection measures as well as to governance factors that directly affect tourism growth and development patterns in the area.***

Source: UTH elaboration

Pilot Area	7. Neretva River Delta area
Partner	Dubrovnik Neretva Regional Development Agency DUNEA
RESULTS	
Synopsis	Tourism in the area is currently underdeveloped and further constrained by major gaps in data availability. The results partly show a trend to change the current development patterns and redirect tourism development to the hinterland.
Customized Tourism Sustainability Toolkit	Core indicators C.B3.1. Direct tourism employment as % of total employment in the destination C.D7.1 % of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes
	Destination Indicators: Di.Beach/Maritime tourism Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones* Di.C3. Costs of erosion-protection measures (e.g. sea walls.) Di.D1. Existence of up to date tourism plans and policies (YES/NO) Di.D2. Existence of a land use or development plan (YES/NO) Di.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO) Di.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO) Destination Indicators: Dii.Urban/Cultural tourism Dii.A3. % of total tourists visiting in peak month and average for the year Dii.D1. Existence of up to date tourism plans and policies (YES/NO) Dii.D2. Existence of a land use or development plan(YES/NO) Dii.D8. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO) Dii.D11. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO) Destination Indicators: Dv.Nature/Ecotourism Dv.A3. Total number of visitors to parks and to key sites Dv.B1. Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area) Dv.C1. % of site area occupied by rare or unique species Dv.C2. % of endemic species at the site Dv.D1. Existence of up to date tourism plans and policies(YES/NO) Dv.D2. Existence of environmental plan and management(YES/NO) Dv.D10. Existence of performance indicators designated for evaluating the plan developed and used(YES/NO) à P.I. Dv.D13. Existence and functioning of a representative coordinating mechanism for MSP/ICZM (YES/NO) Pilot area-specific indicators P.A1.2. % shoreline subjected to erosion P.A1.6. Coastal flooding events per year(number) P.A2.1. Land occupied by artificial surfaces within the first 500m of coast (in %) P.A2.2. % of area designated for tourism purposes P.A4.2. Rate of loss of protected areas P.B1.1. Existence of a coastal planning management system P.B1.2. Length of protected and defended coastline (km) P.C1.2. % environmental, social, cultural actions recommended in plan which have been implemented

Data Availability Overview



Key message from final measurement and data evaluation

The data available is clearly inadequate for accurate interpretation and include several estimations and proxy calculations. Data coming from official statistical sources is either not available or not accessible, showing **major gaps in measuring and monitoring sustainability**.

Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years. Also, satisfaction levels on key issues could not be defined at this stage.

Tourism in Neretva River Delta area is currently underdeveloped and spatially concentrated in limited parts of the pilot area. Tourism needs to increase in terms of both **tourism flows** and related **infrastructure**. Existing and future plans and policies seem to focus on the development of combined cultural and ecotourism activities, in order to fully exploit the natural and cultural resources of the hinterland. However, the almost complete lack of data regarding the key assets for the development of tourism activities in the area does not allow for a preliminary assessment of the dynamics of the pilot area at this stage.

Suggestions for future evaluation and monitoring

Special attention should be given **in measuring and monitoring socioeconomic aspects and key assets for the development of cultural and ecotourism activities at pilot area level as well as to mechanisms regarding the evaluation and monitoring of future plans and policies**.

Source: UTH elaboration

5. References

- Acosta-Alba I. and Werf H. (2011). The Use of Reference Values in Indicator-Based Methods for the Environmental Assessment of Agricultural Systems. *Sustainability*, 3, pp. 424-442.
- Addison P.F.E., Bie K. and Rumpff L. (2015). Setting conservation management thresholds using a novel participatory modeling approach. *Conservation Biology*, 29(5), pp. 1411-1422.