ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
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UNDP

MED4EBM

Mediterranean Forum For Applied Ecosystem-Based Management

EB-ICZM Decision Support System in the Four MED4EBM Target Areas

Project Closure Event, Tunis September 21st, 2023

PROGES PROGETTI DI SVILUPPO

AMICI della TERRA

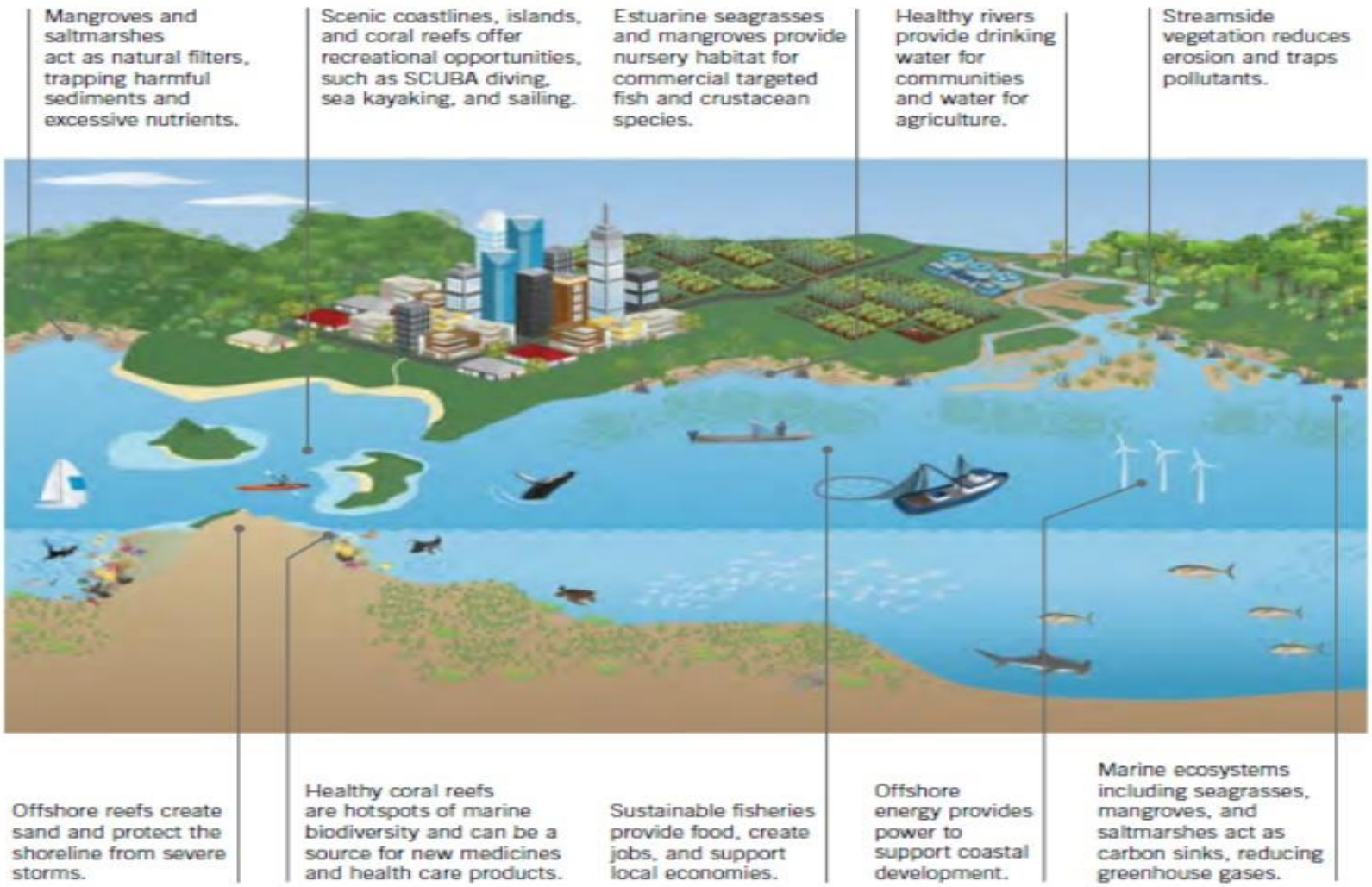
THE ROYAL MARINE CONSERVATION SOCIETY OF JORDAN
JREDS

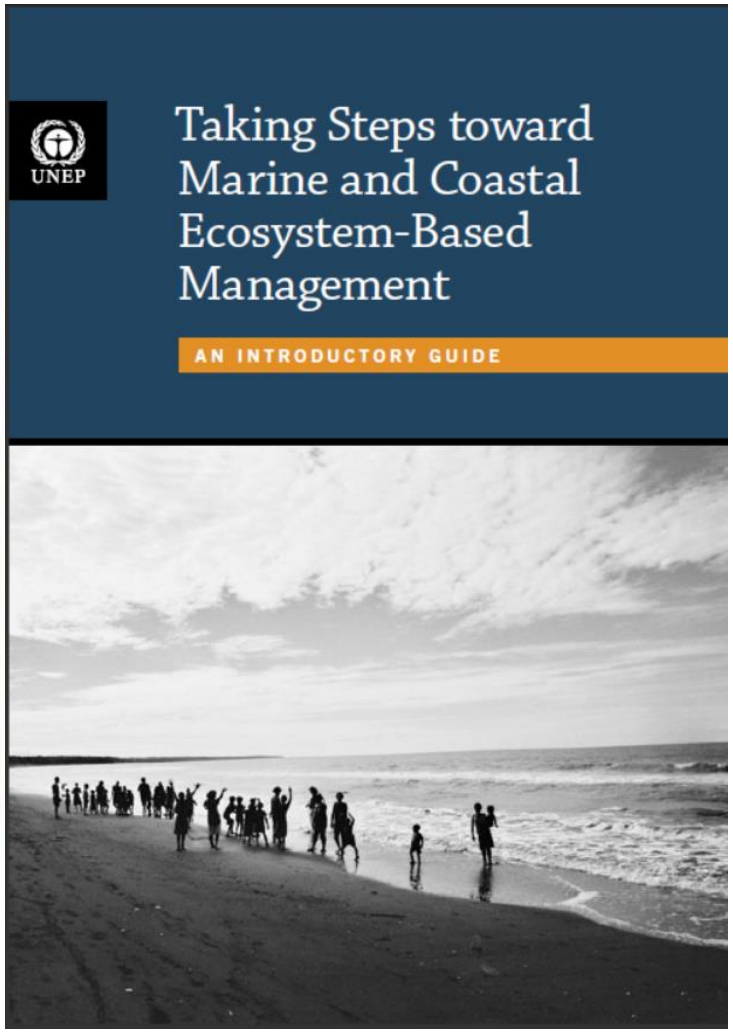
TYRE COAST NATURE RESERVE

INSTM

Ecosystem-Based Integrated Coastal Zone Management (EB-ICZM)

an approach that goes beyond examining single issues, species, or ecosystem functions in isolation. Instead it recognizes ecological systems for what they are: a rich mix of elements that interact with each other in important ways

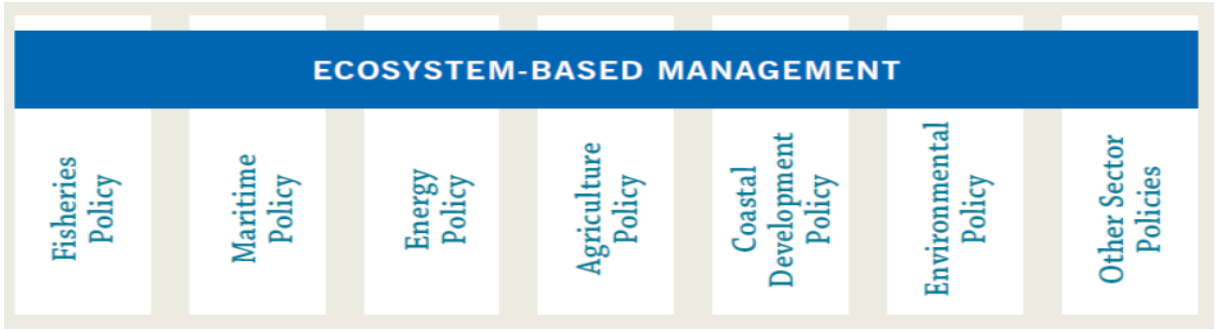




Ecosystem-Based Integrated Coastal Zone Management (EB-ICZM)

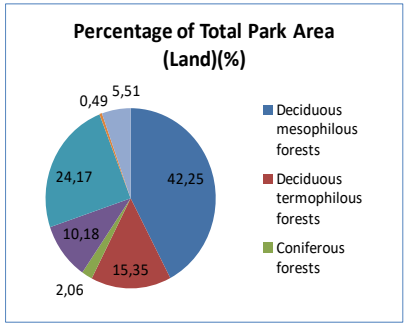
effectively applying EB-ICZM application can be highly demanding for the planning team:

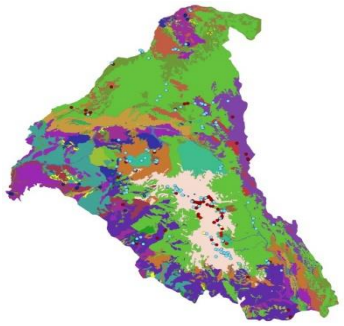
requires intense and continuous efforts to coordinate management actions across a wide array of sectors



harmonization of stakeholders' different viewpoints in multi-sector management planning processes may often bring conflicts

extensive data collection and the handling of large datasets can be a challenging task

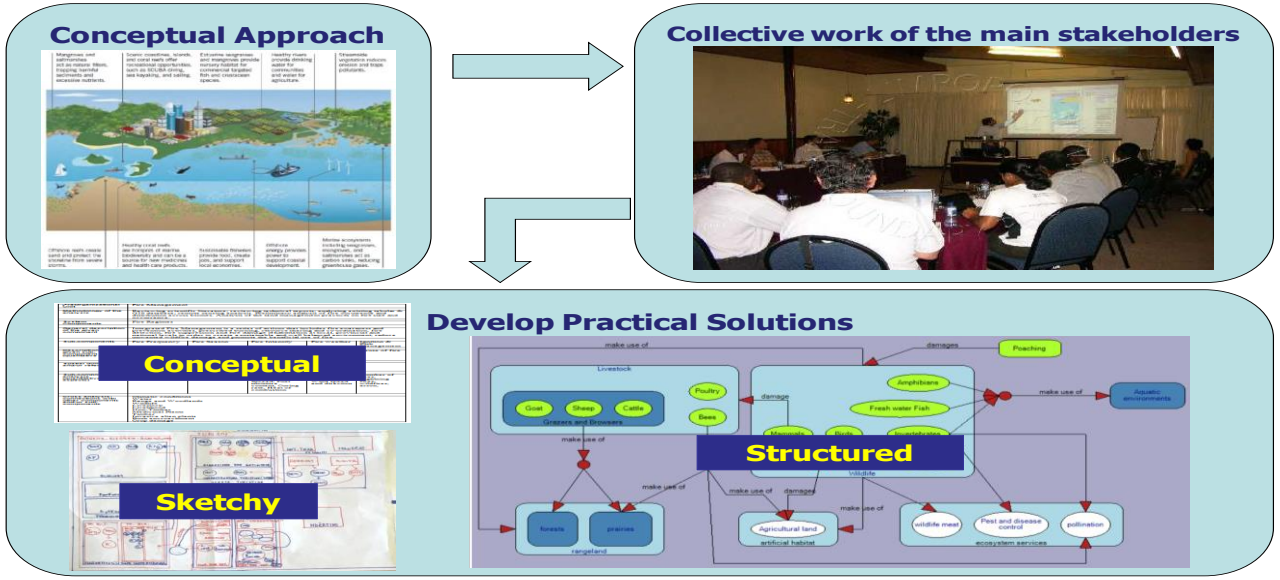


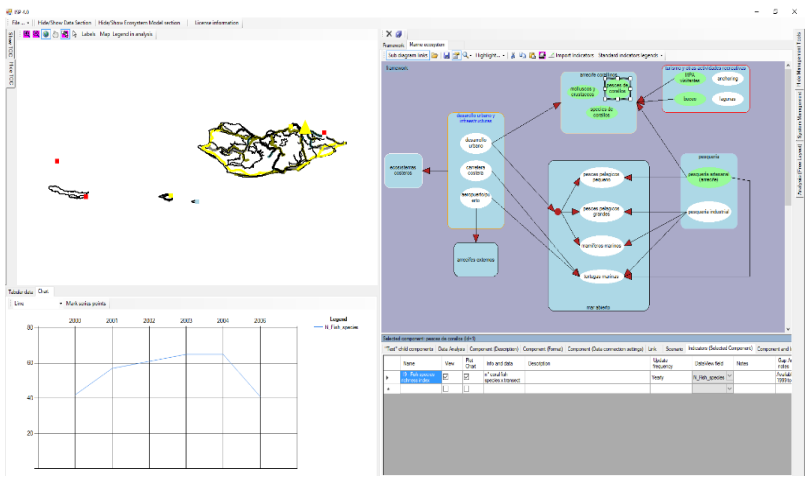


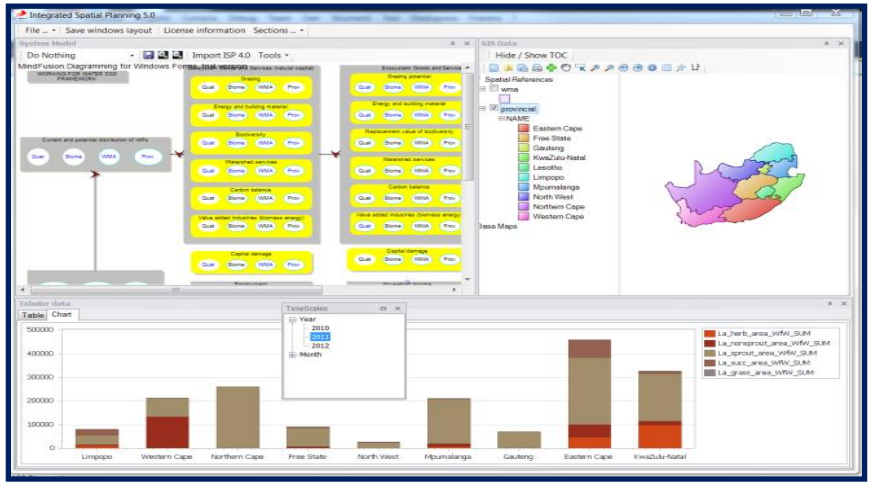
MED4EBM EB-ICZM-DSS: the PROGE-ISP

MED4EBM has therefore introduced innovative methods and tools to in four target areas in the Mediterranean and the Red Sea:

an operational protocol for the execution of multi-disciplinary ecosystem-based environmental assessments







a software package, linked to spatial and tabular databases, to support the analysis of relevant ecological data and the preparation of synoptic reports

PROGES-ISP: key methods and tools

Method: ***Ecosystem context analysis***

Synthesize scientific, institutional and civil society stakeholders' contribution to model ecosystem structure, functioning and services provision.

Tool: ***Context-specific data analysis***

Method: ***System cause effect analysis***

Handle, browse, and analyse a diverse array of large datasets in real time.

Stakeholders and planning team identify triggers and targets for action.

Tool: ***Quick report drafting***

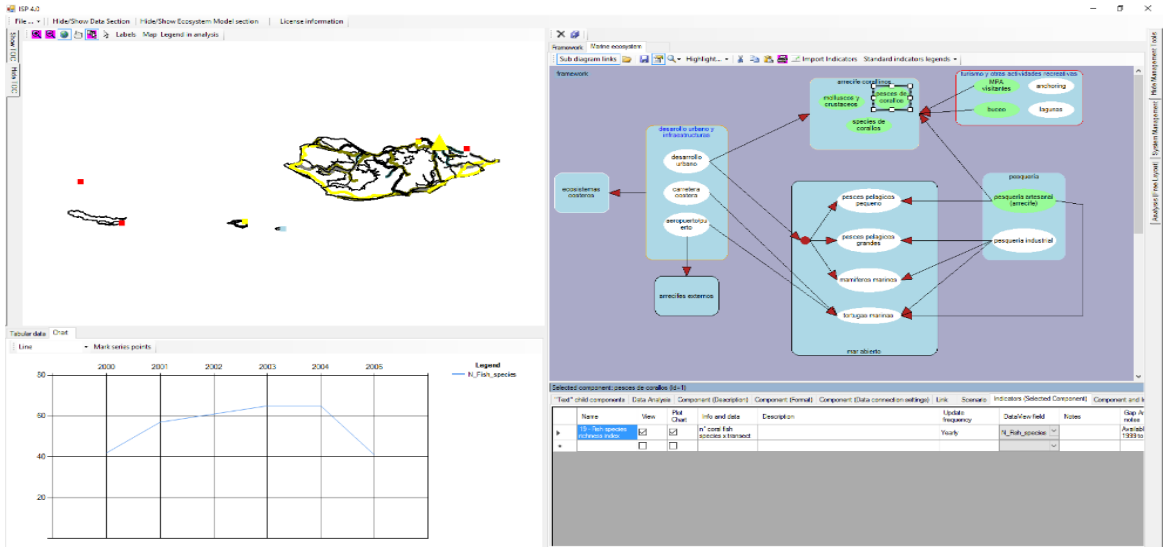
Monitor programs' performance in real time and draft simple but complete reporting material.

Ecosystem Context Analysis

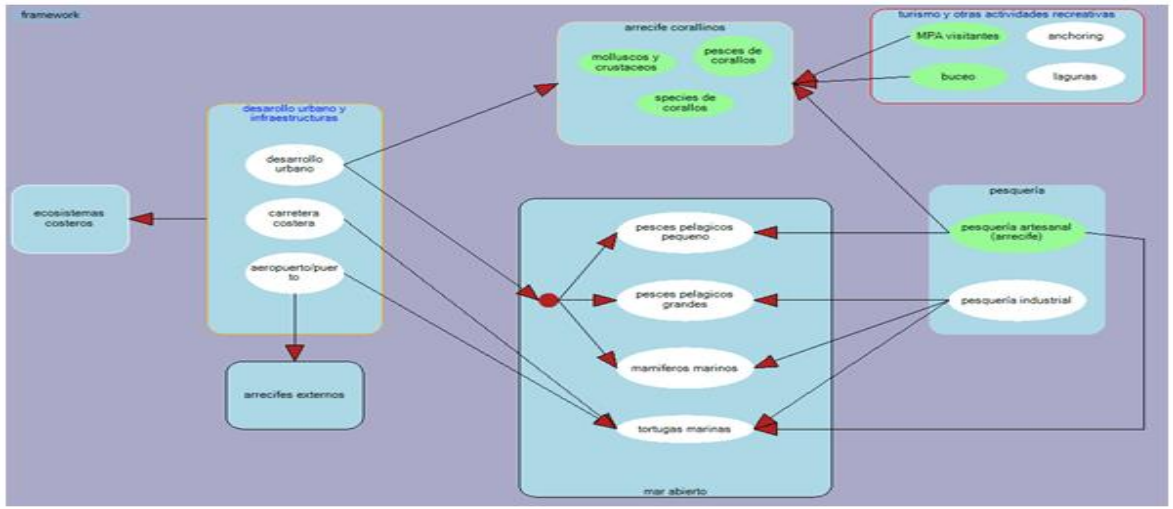
a sequential three stage analytical process

Matriz	Ecosistemas Marinos						
Methodologia de analisi	análisis de los principales hábitats marinos y de las especies de interés natural y económica						
Componentes	mar abierto			arrecifes externos	arrecifes corallinos		otros
Descripcion de los componentes (cualitativa y cuantitativa)				dos islas frente de la playa al oeste de la ciudad	arrecife coralino al oeste de la ciudad (256 km²)		-------
Sub-componentes	peces pelagicos y tiburones	mamiferos marinos	tortugas marinas	No hay	especies de corales	peces de corales	molluscos y crustáceos	-------
Descripción de los sub-componentes (cualitativa y cuantitativa)	Especies más pescadas: *S.commerson, makaira ssp., T.albacare, E.affinis, K.Pelamis*	7 especies de delfines, manaties	Se encuentran 4 de las 7 especies de tortuga marinas de este océano		253 especies de corales formadores de arrecife 30 especies de corales blandos	Comunidades principales: *C.flavaxilla* 20%, *C.weberi* 11%, *P.caeruleus* 10%, *D.marginatus* 9%, *S.versicolor* 8%, ...		-------
Relaciónes con otros componentes	pesquería industrial: la pesca sostenible proporciona alimento, genera empleo y contribuye a la economía local (ver Matriz: Actividades Económicas)			protegen el litoral da tormentas severas	actividades recreativas y turísticas como buceo y pesca deportiva (ver Matriz: Actividades Económicas) pesquería artesanal (ver Matriz: Actividades Económicas)			-------

conceptual: system matrixes



quantitative-structural: system-diagram & indicators

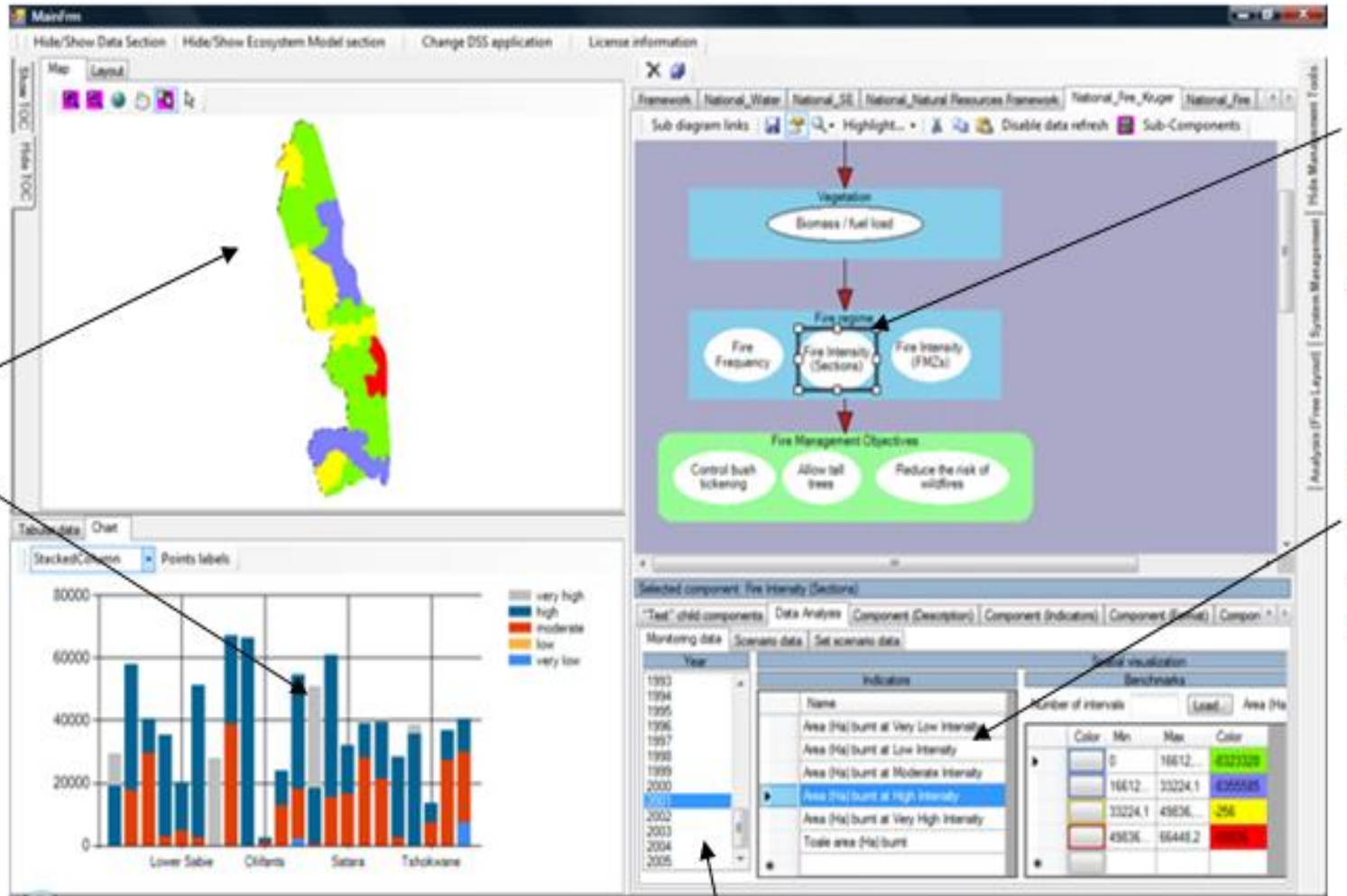


qualitative-structural: system diagram

Context-specific data analysis

Data defining the different components of the natural management system:

- spatial distribution,
- time trends.

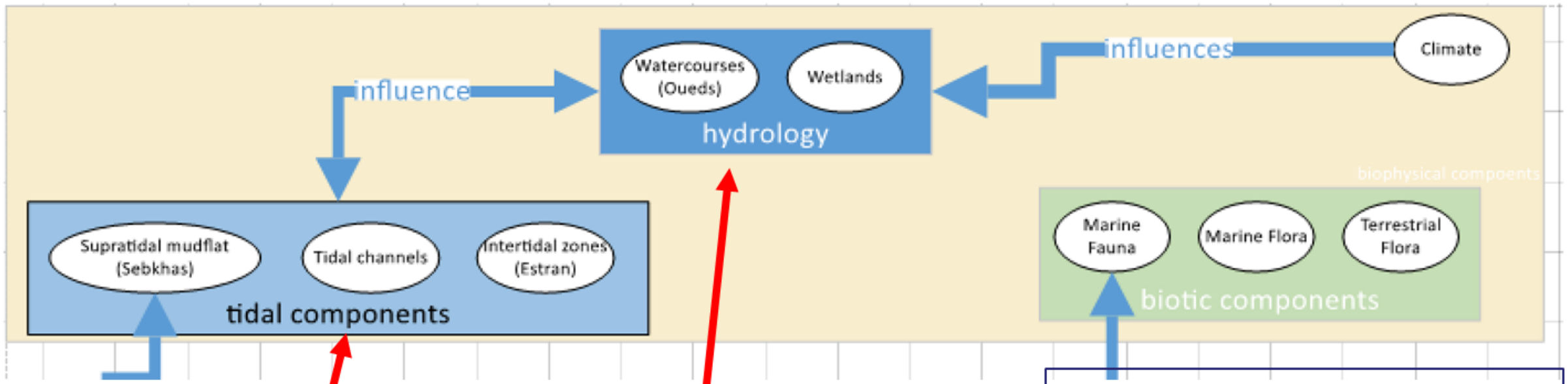


Logical framework defining structure and interactions between the different components of e.g. the natural resources management system.

Quantitative indicators to characterise each system components for the definition of management actions and the monitoring of related achievements.

Maps and charts are updated according to the chosen time frame

System cause effect analysis

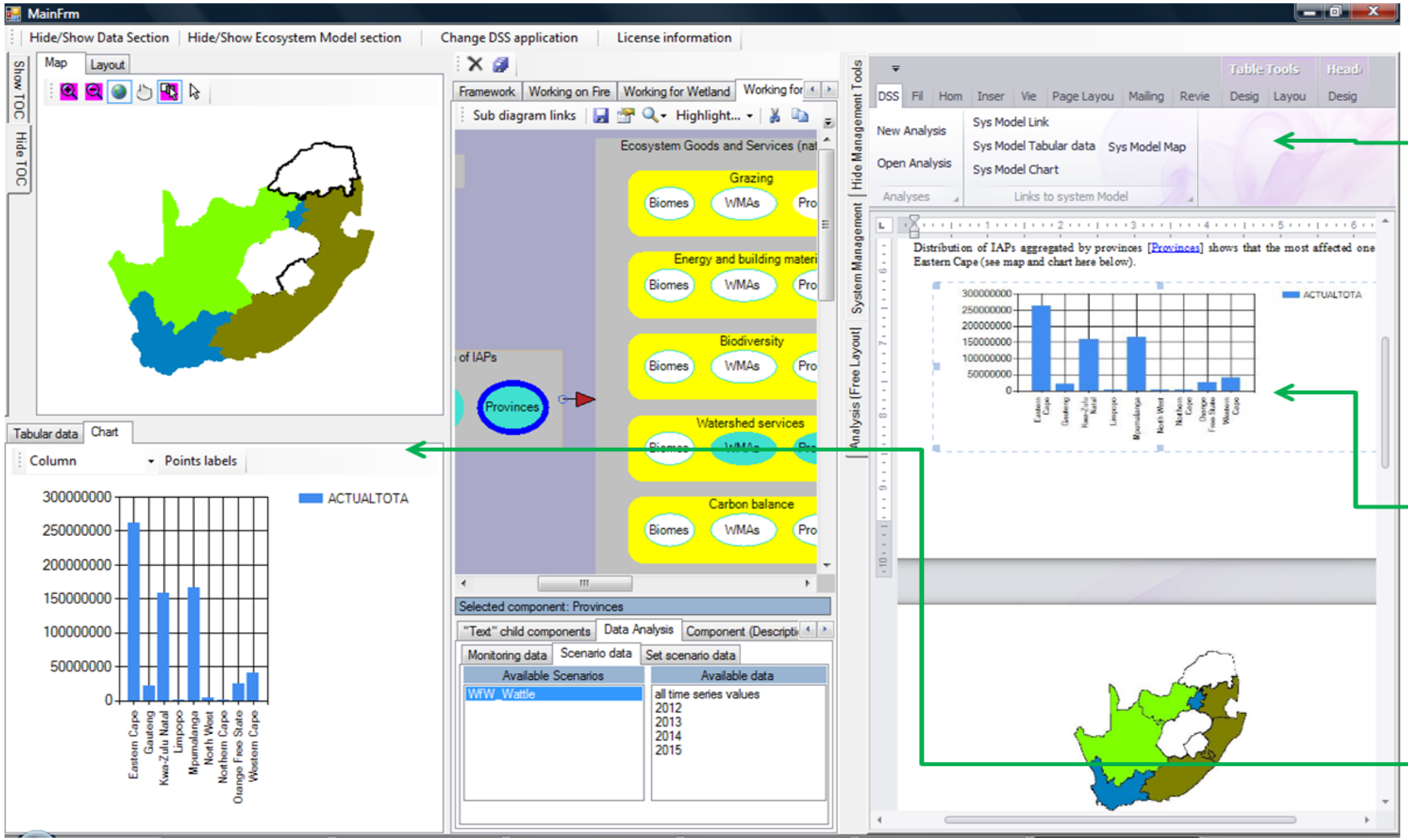


Assess status and dynamics of a given component.

Assess status and dynamics of related component(s).

Intersect the assessments: coordinate management (water management vs. coast erosion/flood) and define triggers and targets for action.

Quick report drafting



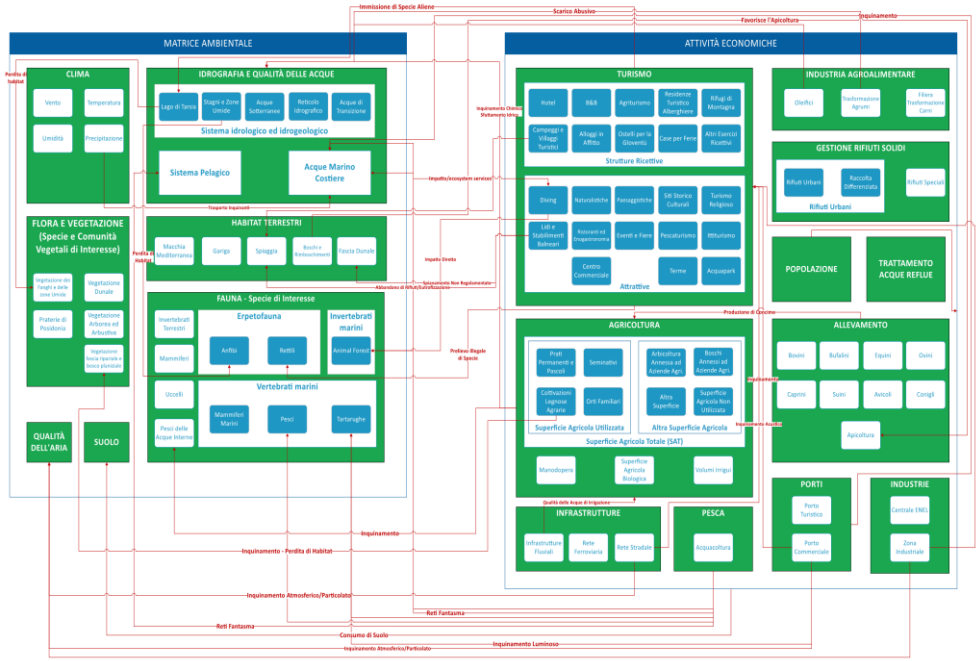
Reporting tool: toolbar for importing and/or linking maps, charts and tables.

Reporting tool: text Editor with Microsoft Word functionalities.

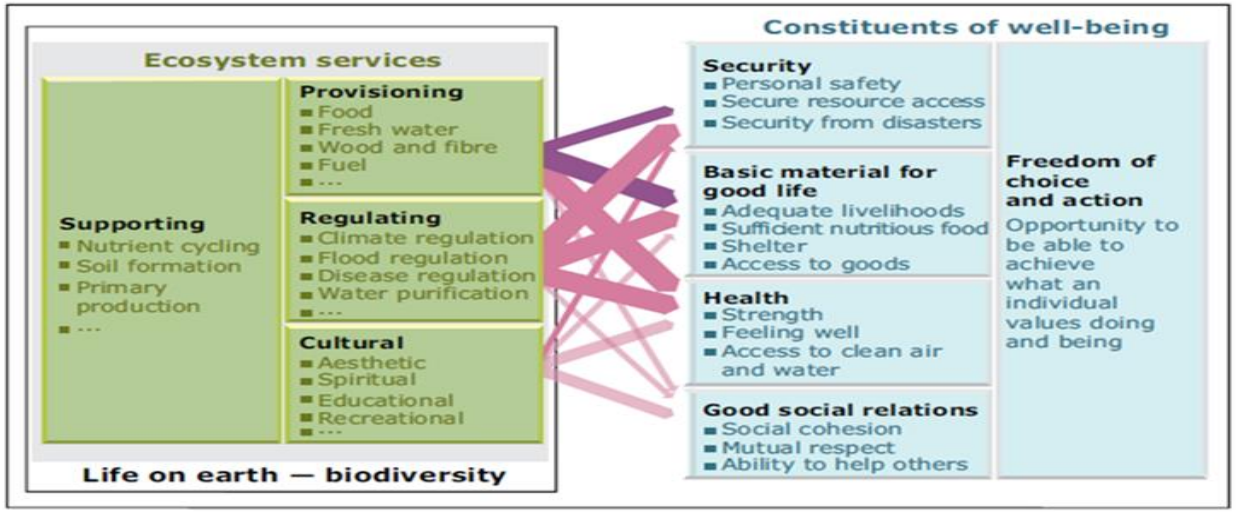
Real-time analysis of relevant data

MED4EBM induced changes

Output / Result: clear and shared EB-ICZM structural model (system diagram)

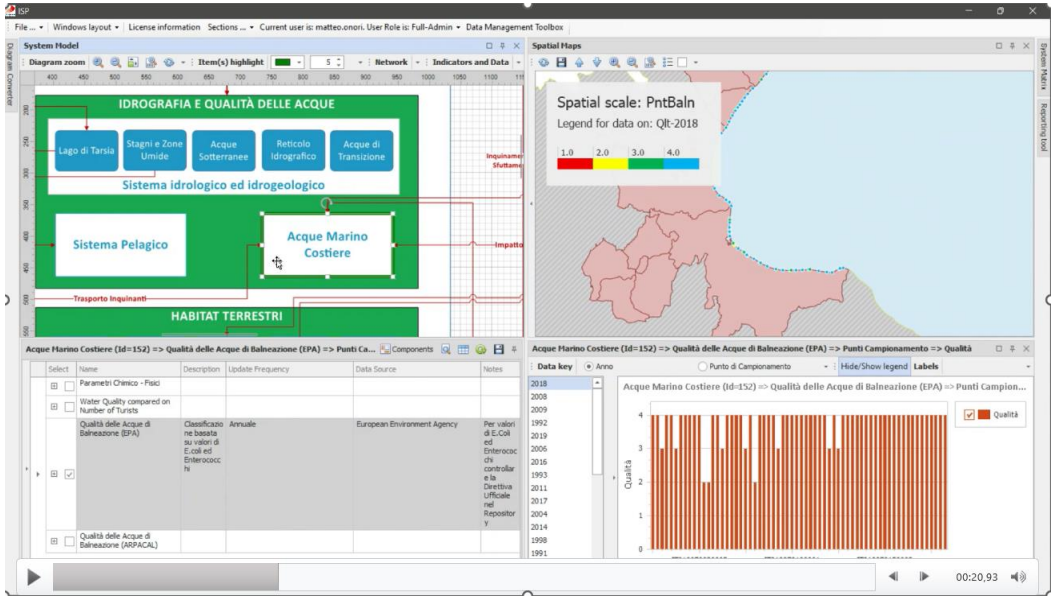


Outcome / Change: shared management vision; reduced potentials for conflicts

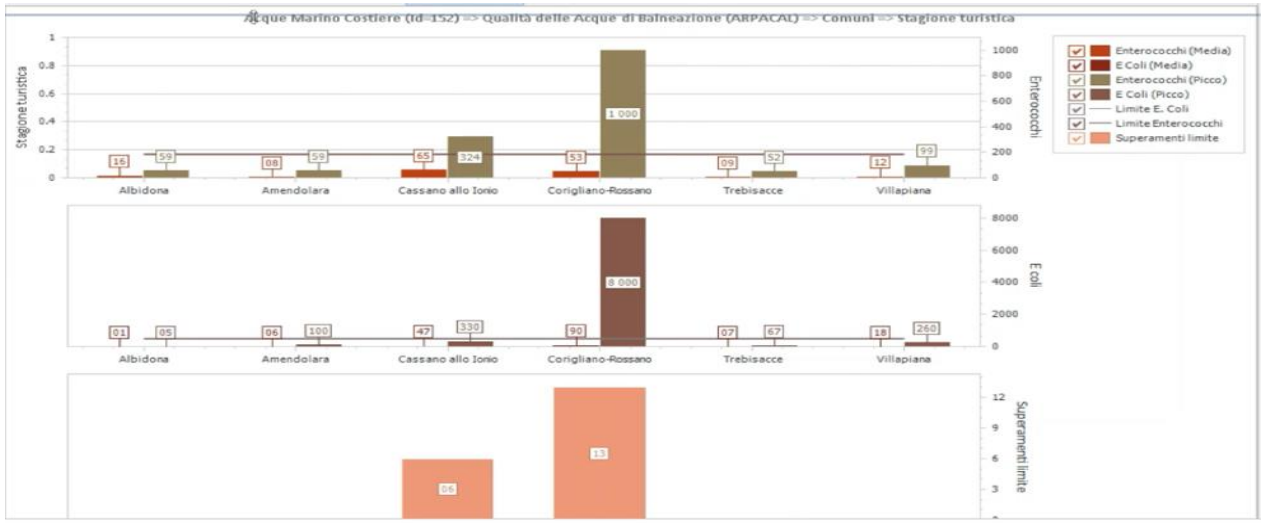


MED4EBM induced changes

Output / Result: EB-ICZM-DSS

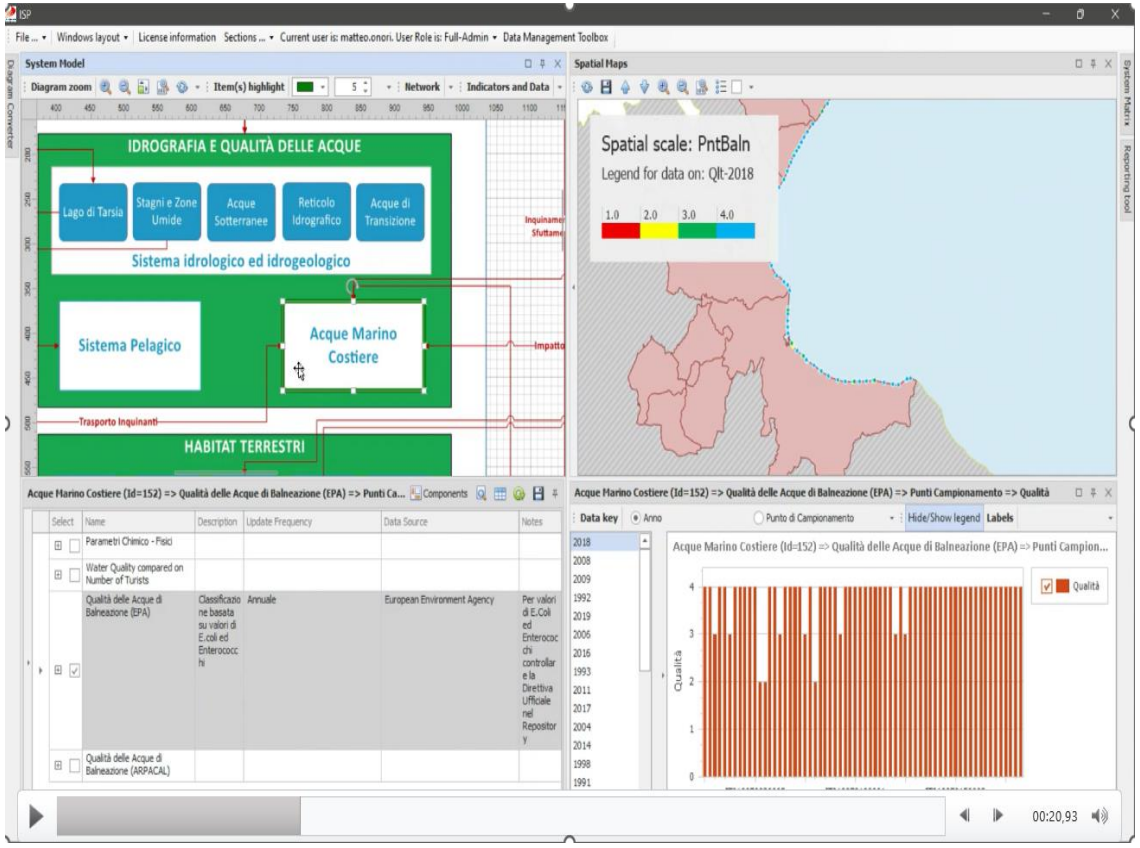


Outcome / Change: evidence-based analysis and decision making



MED4EBM induced changes

Output / Result: EB-ICZM-DSS



Outcome / Change: real-time analysis of diverse arrays of large datasets, effective stakeholders involvement in decision making

Next slide

MED4EBM induced changes

Output / Result: EB-ICZM Governance Protocols

N.	Component		Direct Interaction with other components		Management options/Governance Protocols
	Name	Quantitative analysis	Related Component	Component quantitative analysis Description of the interaction between components	
1	*[Olive groves (Id=122)]*	The indicator in the ISP is the production (tons/year), for each delegation. Fluctuations in terms of productions are linked with the rainfall regime and other factors, such as salinity of the natural water resources. Ghraiba has not system of irrigation, the olive groves are watered only by rains. Because the rainfall is not enough, they use water extracted from wells to irrigate the olive trees. They irrigate the olive groves with the well water, despite the fact that the quality of water is not good because the high salinity. This practice needs management because the wells are illegal. (….)	*[Rainfall (Id=224)]*	(…) The data (average mm rainfall per month) in the ISP are between 2000 and 2019. The rainfalls affect the olive production. Once all the available data are entered, it is necessary verifying if there is a direct correlation between the olive production and the rainfall for each year. Check water stress index for olive tree. Olive production depends on rainfall: If there are rains every year, with good maintenance of the olive trees and early harvesting, a good annual production can be achieved. However, farmers in this region are convinced that the olive tree produces once in two years.	1) Legalise and monitoring the wells 2) Desalination of well waters 3) Subsidies to provide equipment for the proper management of the wells and desalination water 4) Investigate if there are other options (see articles) 5) Subsidies for the renewal of old olive trees

Outcome / Change: actual and effective changes in land and sea sustainable development dynamics

In the longer run: due to delayed and ineffective fund disbursement by ENI CBC MED MED4EBM lost one year of time allocation toward mainstreaming governance protocols in the four target areas

MED4EBM Funding: PROGES

Amount (1st pre-financing)	Date (month/year)	Expenditure (as per the 1st interim report)	Total amount of expenses that were not judged as eligible	Funds (not belonging to the project budget) that you have used
EUR 132,215.38	06/2020	EUR 30,074.75	EUR 2,942.00	Funds advanced by PP1 to keep the project alive during the 1st Interim Reporting period (3 Oct. 2019 => 2 Oct. 2020) in addition to the 10% co-funding): EUR 11,741.99
Amount (2nd pre-financing)	Date (month/year)	Expenditure (as per the 2nd interim report)	Total amount of expenses that were not judged as eligible	Funds (not belonging to the project budget) that you have used
EUR 37,913.82	06/2021	EUR 153,400.37	EUR 55,487.74	Funds advanced by PP1 to keep the project alive during the 2nd Interim Reporting period (3 Oct. 2020=> 2 Jan. 2022) in addition to the 10% co-funding): EUR 0.00
Amount (3rd pre-financing)	Date (month/year)	Expenditure (as per the 3rd interim report)	Total amount of expenses that were not judged as eligible	Funds (not belonging to the project budget) that you have used
EUR 13,053.99 EUR 13,910.49 EUR 19,525.83 EUR 8,667,00	12/2021 02/2022 05/2022 06/2022	EUR 120,017.73	EUR 0.00	Funds advanced by PP1 to keep the project alive during the 3rd Interim Reporting period (3 Jan. 2022 => 2 Oct. 2022) in addition to the 10% co-funding): EUR 19,786.60
Amount (4th pre-financing)	Date (month/year)	Expenditure (as of Sep. 1st 2023)	Total amount of expenses that were not judged as eligible	Funds (not belonging to the project budget) that you have used
EUR 46,084.24	08/2023	EUR 56,890.51	n.a.	Funds advanced by PP1 to keep the project alive during the 4th and Final Reporting period (3 Oct. 2022 => 2 Oct. 2023) in addition to the 10% co-funding): EUR 46,350.21

MED4EBM application cases

the following presentations of this session will provide details on how these methods and tools have been applied to establish EB-ICZM decision support systems and governance protocols in the four MED4EBM target areas