



NOSTRA Project – Baseline Study

Strait of Sicily



Source: NOSTRA project website



March 2014

Disclaimer:

The views expressed in this report are purely those of the authors and may not necessarily reflect the views or policies of the partners of the NOSTRA network. The methodological approach that was applied during the baseline study is presented in the final report of the study. The analysis that is provided in this report is based on the data collected and reported by the Nostra partners, a complementary literature review conducted by the consultants, and the results provided by the methodological toolkit developed in the framework of the baseline study.

Acknowledgement:

This report has received support from the Province of Trapani. The authors would like to thank the Province for providing information requested for completing this study.

Limitations of the analysis:

The consultants faced a limited amount of data. In general, involved partners are facing difficulties in collecting socio-economic and biodiversity related data.

Table of contents

1	GENERAL PRESENTATION OF THE STRAIT	5
1.1	Geographical area	5
1.2	Level of urbanisation	5
1.2.1	Cities	5
1.2.2	Infrastructure	6
1.3	Socio-economic background	6
1.3.1	Social context (including population)	6
1.3.2	Main economic activities	7
2	SIGNIFICANCE AND SENSITIVITY OF BIODIVERSITY AND NATURAL ENVIRONMENT IN THE STRAIT	8
2.1	Remarkable landscapes	8
2.2	Type of Biodiversity in the strait	8
2.2.1	Rare and threatened species	8
2.2.2	Protected areas	8
2.3	Significance of ecosystem services to the local livelihood	9
2.3.1	Significance to the local economy	9
2.3.2	Cultural significance	9
2.4	Main biodiversity pressures and related impacts	9
2.4.1	Drivers of pressures on biodiversity	9
2.4.2	Human activities	9
3	RESPONSES TO PRESSURES AND IMPACTS	10
3.1	Initiatives and actions	10
3.1.1	Cross border research projects	10
4	GOVERNANCE	11
4.1	Actors mapping	11
4.2	Level of cross-border cooperation	11
5	CONCLUSIONS OF THE ANALYSIS	13

5.1	Analysis of the situation at the strait level	13
5.2	How responses have addressed key pressures on biodiversity and natural environment	13
6	RECOMMENDATIONS	15
6.1	Towards the implementation of good practices developed by other NOSTRA partners	15

1 General presentation of the strait



1.1 Geographical area

The Strait of Sicily is the strait between Sicily and Tunisia. It is about 145 kilometres wide and divides the Tyrrhenian Sea and the western Mediterranean Sea from the eastern Mediterranean. Its maximum depth is 316 m. Deep currents in the strait flow from east to west, and the current closer to the surface travels in the opposite direction. The unusual water flow is of interest to oceanographers. The island of Pantelleria lies in the middle of the strait. The data presented in this factsheet are only relevant for the Sicilian side of the strait.

Table 1: Key geographical data

Key geographical data	Unit	City 1, Country 1
Landscape area	ha	<i>Missing from toolkit</i>
Seascape area	ha	<i>Missing from toolkit</i>
Length of coastline	km	<i>Missing from toolkit</i>
Maximal depth of the strait	m	316
Width of the strait	km	145
Urbanized areas	km ²	<i>Missing from toolkit</i>

Source: data from NOSTRA website

1.2 Level of urbanisation

1.2.1 Cities

- Trapani : 68.769 inhab.
- Paceco: 11.427 inhab.
- San Vito Lo Capo: 4.457 inhab.
- Marsala: 80.587 inhab.

1.2.2 Infrastructure

1.2.2.1 Ports

The port of Trapani is one of the main infrastructures in the area. More than 850000 passengers use this port every year (13th at the national level) and 1 -3 millions of tons of merchandise are exchanged (9% of the regional amount). Its importance is mainly due to the commercial exchange of marble, present in the area.

1.2.2.2 Transportation

Beginning in 2009, touristic activity has increased due to low cost airline Ryan Air setting up shop, with connections to over 34 destinations in Europe. Marketing of the Ryan services were co-financed by the Province of Trapani. In 2012, more than 2 million of passengers were transiting through the Trapani airport. The touristic flows have thus significantly increased by a ten fold magnitude in the last ten years.

The network of roads spans about 900 km divided over 90 roads/routes/highways. The rail network covers 125.17 km (via Calatafimi) and 194.17 km (via Castelvetrano). However, the majority of transportation is ensured by motorised vehicles using the highway A29 (Palermo – Mazara del Vallo; Palermo – Trapani) and the national routes (7th in the province of Trapani).

1.3 Socio-economic background

1.3.1 Social context (including population)

The area is home to a population of 121,195 inhabitants with an average unemployment rate of 4.6% , presenting demographic peaks for youths and women.

Table 2 : Key socio-economic data¹

Key population data	Unit	
Number of inhabitants in the landscape area	(x 1000)	121,19
Population by mother tongue	%	4%
GDP per capita in the region		-
Employed	%	41,2 (2012) ²
Unemployment rate in the region	%	19.7 (2012) ³
Unemployment rate in the country	%	10.7 (2012) ⁴

¹ Piano di sviluppo locale del GAC, 2012.

² ISTAT

³ ISTAT

⁴ ISTAT

1.3.2 Main economic activities

Major activities in the area include the extraction of marble, tourism (many important archaeological hotspots), fishery (traditionally tuna fish now transferred to Japanese investors), salt extraction, and agriculture—mainly wine (80% of the Sicilian production) and oil (mainly SMEs). Commercial activities are prevalent in the area, especially in the city of Trapani (2,351 enterprises), while touristic infrastructures and restaurants are strongly influenced by the seasonality of tourism and are less developed (about 500 enterprises in the area).

Table 3: Main economic activities

Type of activity	
Maritime transport of goods	√
Maritime transport of passengers	√
Ports (fisheries and trade)	√
Onshore energy production	
Onshore production of renewable energy	
Onshore industry and infrastructure	√
Onshore agriculture	√
Building and construction	
Tourism	√

2 Significance and sensitivity of biodiversity and natural environment in the strait

2.1 Remarkable landscapes

The strait is particularly sensitive and protected as a special area because of the *Poseidonia* grassland and the specific ecosystems related to the salt industry (salty water marsh). Several protected areas exist in the area in addition to the Natura 2000 network including (in Italian): *La Riserva dello Zingaro, il Monte Bonifacio, Lo Stagnone, la riserva del Belice e Favigna*. Moreover, the geological diversity of the strait, the wind and the hydrodynamic conditions give rise to a strong variety of marine landscapes, sandy and rocky beaches, and marine lagoons.

2.2 Type of Biodiversity in the strait

The Strait of Sicily occupies an important location in the Mediterranean Sea, as it governs exchange between the eastern and western basins and is characterized by active hydro-dynamics which strongly influence the ecology of phytoplankton communities and thus influence the variety of fishes.

2.2.1 Rare and threatened species

A number of rare species and remarkable habitat types have been identified in the strait area. In addition to the famous *Posidonia* prairies which are important as a nursery for several fish species, notable is the *troittoir à vermeti*, an important kind of biostructure typical to the Mediterranean. In terms of terrestrial ecosystem, the mediterranean prairies formed by *Ampelodesmos mauritanicus* and small palm, *Chamaerops humilis* must be mentioned. The very rare *Limonium todaroanum* can be found at about 750 m of altitude in the Zingaro reserve. Finally in terms of fauna, the rare long-eared bat *Plecotus auritus* and the freshwater crab *Potamon fluviatile* have been observed in the protected areas of the strait.

2.2.2 Protected areas

Several protected areas exist in the area, in addition to the Natura 2000 network including (in Italian): *La Riserva dello Zingaro, il Monte Bonifacio, Lo Stagnone, la riserva del Belice e Favigna*. They all provide a very strong attraction for tourists.

The wide variety of marine habitats, and notably the *Posidonia* prairies, contributes to the high level of biodiversity in this area, which is also characterised by the presence of fish species in high demand for consumption.

The province of Trapani includes 8 national parks for a total surface of 11,000 hectares including 10,000 hectares of forest and Natura 2000 protected sites (9% of the province's territory). Of further interest is the marine protected area of the Egadi islands (53,000 hectares), which has not yet been designated a national park. The most important among the national parks is certainly the 'Riserva dello Zingaro' which includes 7km of coast. The list of national parks list presented below (Italian names):

- Riserva dello Zingaro,
- Riserva Naturale Marina Isole Egadi,
- Riserva Naturale Orientata Isola di Pantelleria,
- Riserva naturale Bosco di Alcamo,
- Riserva naturale regionale delle Isole dello Stagnone di Marsala,
- Riserva Naturale Orientata Monte Cofano,
- Riserva naturale integrale Saline di Trapani e Paceco e
- Riserva naturale Foce del Fiume Belice.

2.3 Significance of ecosystem services to the local livelihood

2.3.1 Significance to the local economy

The ecosystem services of the area have a strong link to touristic activity. In a recent survey, 33% of tourists declared as the main reason for their visit to be its natural capital, in particular the national parks of Monte Cofano and Lo Zingaro which remain among the touristic highlights of the region. The presence of exquisite marine habitats and rare species has also been identified as a strength in a recent plan for regional economic development.

The rich planktonic composition in the strait influence the variety of fish species present in the marine area, most of which are of relevant economic importance and see strong demand.

2.3.2 Cultural significance

The fishery tradition of the area, hailing back to the Phoenician era, is a strong cultural heritage which also serves double duty as a touristic attraction. This tradition is also reflected in the culinary tradition, which has developed around the use of freshly fished seafood as ingredients.

2.4 Main biodiversity pressures and related impacts

2.4.1 Drivers of pressures on biodiversity

The recent inclusion of areas in the Trapani Province territory to the Natura 2000 network has influenced the decommissioning of the marble quarries for conservation reasons. For the same reasons and due to general public interest, installation of wind turbines and the extraction of petroleum in the straits have also been stopped, while plans have been made to dismantle illegal structures on the beach.

2.4.2 Human activities

The importance of fishery activities in the area is relatively small in terms of job creation (only 2.1% of the workers in the area are employed in this sector). However this number does not consider the jobs created in relation to the transformation of marine products. In the last 40 years, innovation of fishing technologies and the growth of demand have led to the excessive exploitation of marine resources in the area.

3 Responses to pressures and impacts

3.1 Initiatives and actions

3.1.1 Cross border research projects

ENPI CBC Italy-Tunisia Programme⁵: The general goal is to promote economic, institutional, and cultural integration between the Tunisian and Sicilian regions through a joint sustainable development process in the context of cross border cooperation. The objectives of the programme include:

- supporting the enhancement/conservation and efficient management of natural resources in the key sectors of agriculture and fishery;
 - protecting and enhancing the natural and cultural heritage, as a prerequisite for sustainable tourism development; and
 - promoting the development of renewable energy sources.
- **The Regional and Provincial authorities finance several actions related to natural capital, for instance, tour paths for bicycles or horse riding (notably under the IEUP program between Italy and Tunisia).**

The Trapani Province has co-financed (with support from the EU and other international agreements such as that between Italy and Malta) and coordinated many projects to characterise the area and to develop sustainable practices. Notably the 'Atlas of Waterfront'⁶ and the 'Socio-Economic Plan of Development' were published in 2013. However, these publications and works are generally not employed in practice to implement local integrated management.

The Coastal Action Group has several management objectives related to biodiversity status, including:

- Promoting the quality of the coastal environment and sustainability practices linked to fishery
- Landscape restoration
- Promoting the image of fisherman and the related culture and local knowledge in the public mind
- Environmental education targeting students and other consumers

⁵ <http://admin.interact-eu.net/downloads/1309/Factsheet%2520ENPI%2520CBC%2520Italy-Tunisia%2520Programme..pdf>

⁶ Project to restore the water front as a specific territory

4 Governance

4.1 Actors mapping

In addition to the Trapani Province and the Sicily Region, two other authorities are actively involved in the management of the strait territory: the Coastal Action Group (GAC) and the Local Action Group (GAL) financed respectively by the European Fishery Fund and the Rural Development Fund. They promote sustainable fishery and agricultural practices by issuing calls for projects targeting local enterprises. Several protected areas exist in the area in addition to the Natura 2000 network including (in Italian): *La Riserva dello Zingaro, il Monte Bonifacio, Lo Stagnone, la riserva del Belice e Favigna*. Management varies for these protected areas. Each one is managed by either the Province, the Sicily Region or the Forestry Competent Authority, depending on the specific case.

The main actors involved are:

- Coastal action group: NGOs founded to access EU fishery funds
- Local action group: elaborate the local action plan with a focus on agriculture, manage EU funds (i.e. leader +)
- Sicily Region: regional competent authority with special status
- Forestry Competent Authority: national competent authority
- Trapani Province: local competent authority

4.2 Level of cross-border cooperation

The Trapani Province has co-financed and coordinated many projects to characterise the area and to develop sustainable practices in cooperation with the EU and also through other international agreements (Italia-Malta).

Cross-border cooperation has faced difficulties.

Law n° 7 March 2013 (Delrio) stated the dissolution of Provinces as administrative and policy entities. The province of Trapani was also previously affected by 2 consecutive police controls in 2012 and 2013 because of 'mafia' infiltration in the institution. Due to this unstable situation the sectorial activities were reallocated and the department dedicated to EU policies was reduced from 12 to 5 people. This small team has to manage 11 EU projects for a total of 8 million euros.

Concerning the NOSTRA project, the province of Trapani was involved in the preparation of a workshop and in the participation to the others, despite the difficulties of travelling from Sicily. At the beginning of the NOSTRA project, the Trapani Province set up an agreement with the University Consortium of Trapani and sub-contractor Prof. Santinelli (marine biologist) to study the biodiversity aspects. However, the academic Consortium is now also at the brink of collapse for economic reasons. Involvement in EU projects is viewed as a necessary policy action and perceived as an obligation by the local policy officers. The subsequent implementation is seen as a heavy task, notably because of lacking resources. The fact that the local team is understaffed makes taking action and

implementation even more difficult. External hiring is not permitted by the proposed budget and/or heavily blocked by internal rules. In any case, in the context of the NOSTRA project the budget was planned only for 'internal' staffing. Missing expertise in internal staff is also pointed out as a barrier. The imminent suppression of the local academic consortium with which the Province initially engaged in partnership is also a big obstacle to NOSTRA project implementation. As a consequence, the agreement will be transferred to the University of Palermo. Based on the exchanges organised until now in the context of the NOSTRA project, the Trapani Province team has observed that its situation is particularly difficult in comparison to other NOSTRA partners. The local partners have observed that collaboration between public and private authorities works better in other NOSTRA involved countries.

The Trapani Province also applied for a Life + project having the objective to develop a 'nursery' for *Poseidonia*, but due to previous financial problems in regards to another Life + project, the application was rejected.

The general attitude of workers in the fishery sector has been qualified as non-collaborative by the local action group, in particular concerning any new practice targeting more sustainable fishing methods. This has been explained by the relatively old age of the workers concerned. This observation has been made despite the numerous projects financed in the area. The local fisherman generally agree to test alternative methods only if an economic advantage is associated with the practice. In addition, these workers generally have a low level of education and experience difficulties in understanding the EU projects' mechanisms and associated funding. Local fishing practices are mainly based on tradition transmitted orally from generation to generation.

5 Conclusions of the analysis

5.1 Analysis of the situation at the strait level

Socio-economic background of the Strait

Major activities in the area are the extraction of marble, tourism (many important archaeological hotspots), fishery (traditionally tuna fish now transferred to Japanese investors), salt extraction and agriculture, mainly wine (80% of the Sicilian production) and oil (mainly SMEs). The commercial activities are the most present in the area, especially in the city of Trapani, while touristic infrastructures and restaurants are strongly influenced by the seasonality of tourism and are less developed (about 500 enterprises in the area).

Significance of biodiversity and natural environment in the Strait

Several protected areas exist in the area and in addition to the Natura 2000 network including (in Italian): La Riserva dello Zingaro, il Monte Bonifacio, Lo Stagnone, la riserva del Belice e Favigna, which are a very strong tourist attractions.

The wide variety of marine habitats, and notably the Posidonia prairies, contributes to the high level of biodiversity in this area, which is also characterised by the presence of fish species highly requested by consumers.

Human and natural pressures exerted on biodiversity and natural environment

The recent participation of Trapani's province territory to the Natura 2000 network has influenced the dismissing of the marble's extraction activity for conservation reasons. For the same reasons and due to general public mobilisation, the wind energy production and petrol extraction activities in the straits have been stopped and dismantling of illegal buildings on the beach is now planned. The relative importance of the fishery activities on the area is relatively small in terms of job creation (only 2.1% of the workers in the area are employed in this sector. However this number does not consider job creation related to the transformation of sea products. In the last 40 years, the technological innovation of the fishery techniques and the growth of the demand have influenced the excessive exploitation of the marine resources in the area.

5.2 How responses have addressed key pressures on biodiversity and natural environment

The responses that have been implemented in the Strait are mapped on the following tables.

Table 4: Responses to address risks and pressures exerted on biodiversity and natural environment – Strait of Sicily

	Adding value to the local livelihood			Creating risks and pressures, and impacting biodiversity and natural environment	Existing responses to address risks and pressures exerted on biodiversity and natural environment	
	Creating jobs	Creating revenues	Creating Identity & culture		Italian side (Sicily)	Cross-border
Maritime Transportation (crossing)	✓	✓		Boat collision and risk of release of hazardous substances transported by boats	• Legislation compliant with the International Regulations for Preventing Collision at Sea	
				<i>All pressures/transversal</i>		
Traditional Fishing	✓	✓	✓	Fish stock depletion (limited)	• The Coastal Action Group	• ENPI CBC Italy-Tunisia Program
Agriculture	✓	✓	✓	Reducing biodiversity		• ENPI CBC Italy-Tunisia Program
Saltmarshs	✓		✓	<i>All pressures/transversal</i>		
Terrestrial/ Coastal tourism	✓	✓		Urban development, artificialisation of land, disturbance of natural balance, destruction of ground vegetation	• The Coastal Action Group	• ENPI CBC Italy-Tunisia Program
Maritime tourism	✓	✓		Disturbance of natural balance		• ENPI CBC Italy-Tunisia Program

6 Recommendations

GOVERNANCE

- There is a lack of planning and coordination instruments targeting the management of private and public funding. An integrated EU management of straits could help in this specific context to eliminate some blocking points. However, the specific position of the strait (Italy-Africa) and the difficult relationship with the Tunisian authorities very rigid concerning the marine national areas are a key issue of the area, notably in terms of fishing practices since EU and Tunisia do not share the same legislative approach concerning fishery in international marine areas. To solve the situation and to have an integrated management it would be needed to have international agreements, lacking at the moment. At a more local level, there is a lacking of entities for the environmental certification of fishery products and an integrated network to promote tourism.

6.1 Towards the implementation of good practices developed by other NOSTRA partners

During the workshop that took place in Reggio Calabria in February 2014, the NOSTRA partners were asked to identify the best practices developed by other partners of the Network they would like to implement in order to achieve their ideal Strait.

The partners of the Strait of Sicily expressed interest for the following best practices.

Scenario for sustainable socio-economic development_Vlora

Building scenario for sustainable socio-economic development for the territory of the Sicilian coast of the Strait of Sicily will support the integration of biodiversity in local planning and socio-economic development of the area.

Towards “CAST_Coastal Actions for Sustainable Tourism_Kent”

The CAST project implemented in the Dover Strait aims to strengthen coastal tourism by identifying new opportunities to attract and retain visitors and improve products and services while guaranteeing the sustainability of tourism. To date, the Sicilian coast of the Strait of Sicily is not well developed for tourism, while at the same time it suffers from high seasonality of tourism. Implementing such initiative aiming at promoting tourism and preserving biodiversity and natural environment is relevant in the context of the Strait of Sicily.

EGTC Action plan for Biodiversity Preservation

The Sicilian channel between Sicily and Tunisia joins the west and east Mediterranean basins, and hosts many species. It represents a biodiversity hotspot within the Mediterranean. It seems relevant to engage a joint and cross-border management of biodiversity and to implement actions to preserve biodiversity. A formal dedicated structure will clarify roles and responsibilities, the decision-making process and the scope of actions. The challenges of biodiversity preservation must be taken as a cross-border issue.

Interviews

Deborah Aureli, Province of Trapani