



# THE "MENAIDE" SMALL SCALE DRIFTNETS: AN EXAMPLE OF SELECTIVE AND TRADITIONAL FISHERIES, SUSTAINING THE ECONOMY OF SMALL COASTAL VILLAGES IN ITALY



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**INTRODUCTION** - Small scale driftnets fisheries, using nets of limited length and mesh size have been historically used by the Italian artisanal fisheries without environmental concerns; one example is the fishery for anchovy (*Engraulis encrasicolus*), performed with a small driftnet, specially designed to catch anchovy, called "menaide". The introduction, in the 70s-80s, of driftnets with larger meshes and greater length, targeting swordfish and tuna, created environmental concern, due to the incidence of unwanted catches of endangered and protected species (e.g. mammals, turtles). The current regulation prohibits the use of driftnets higher than 2.5 km and their use to catch species as large pelagics and large sharks (EC, 1992; 2007). In May 2014 the EC announced the intention to put in place a moratorium on driftnets fishing in EU waters. In the context of a specific study promoted by EU (Sartor, 2014) to characterize the small scale driftnets in Mediterranean, the "menaide" fisheries were studied in detail.

**MATERIALS AND METHODS** - From March to October 2013, information on fishing effort, gear characteristics, catch composition, and economic parameters of the "menaide" fisheries was collected by means of interviews, logbooks and observations on board of the professional vessels, in all the Italian harbours involved in this fishery. This not presents an overview of the results obtained, focusing mostly on the socio-economic aspects.

**RESULTS** - About sixty vessels were identified as involved in the "menaide" fisheries. Four main fisheries were detected mainly in southern Italy (Fig. 1, Tab. 1). The most important one is located in eastern Sicily (FAO GFCM subarea GSA19), in Catania area; it involves 28 vessels and is active all year round. The other fisheries are located in the Cilento area (along the Campania region, GSA10), in S. Agata di Militello harbour (north of Sicily, GSA10) and in Selinunte (south of Sicily, GSA10). All these three fisheries are seasonal, being the activity concentrated from spring to autumn, according to the area. The vessels performing "menaide" fishery are < 12 m in overall length and operate close to the coast. The average net length was < 500 m, the mesh size was 20-30 mm (Fig. 2). The anchovy, dominated the catch (75-100%), discard was negligible, the not authorised species were rare and the protected ones were absent. All the catch of anchovy was composed by specimens greater than the size at first maturity and the minimum landing size (Tab. 1)



Fig. 1 - Maps showing the location of the "menaide" fisheries in Italy

Tab. 1 - Summary of the characteristics of the "menaide" fisheries in Italy

Fishery	GSA 19 E Sicily Catania area	GSA 10 Cilento area	GSA 10 N Sicily S. Agata Militello	GSA 10 W Sicily Selinunte area
Target species	<i>E. encrasicolus</i>	<i>E. encrasicolus</i>	<i>E. encrasicolus</i>	<i>E. encrasicolus</i> <i>S. pilchardus</i>
Fishing period	All year	April-June	June-August	May-September
N° of vessels	28	19	7	5
N° fishermen	115	57	15	20
Annual fishing days (avg by boat)	145	20	20	33
Avg mesh size	20.5 mm	27 mm	20 mm	20.0 mm
Avg net length	280 m	425 m	500 m	202 m
Total catches	48.0 kg/day	37.0 kg/day	88.0 kg/day	n.a.
Composition of the catch (% in weight)	Target 91.5% By catch 8.1% Discard 0.4%	Target 76.3% By catch 23.7% Discard 0.0%	Target 93.7% By catch 0.0% Discard 0.7%	n.a.
Main by catch species	<i>S. pilchardus</i>	<i>S. pilchardus</i>	Not present	n.a.



Fig. 2 - Detail of a "menaide" net



Fig. 3 - Fishing operations with "menaide".

Tab. 2 - Income statement of the "menaide" fisheries

Parameters	Catania area (GSA 10)		Cilento Area (GSA10)		S. Agata di Militello (GSA10)		
	AVERAGE VALUE PER VESSEL	VALUE PER VESSEL	AVERAGE VALUE PER VESSEL	VALUE PER VESSEL	AVERAGE VALUE PER VESSEL	VALUE PER VESSEL	
Value of landings	a	66,748	1,868,940	4,325	82,175	6,997	48,978
Energy costs	b	3,579	100,201	251	4,773	2,520	17,640
Commercial costs*	c	3,905	109,349	42	806	221	1,546
Other variable costs	d	2,039	57,084	134	2,541	547	3,827
Variable costs	e-b+c+d	9,523	266,633	427	8,120	3,228	23,013
Maintenance costs of the gear	f	1,400	39,200	590	11,210	414	2,898
Other fixed costs	g	2,000	56,000	308	5,848	144	1,007
Fixed costs	h=f+g	3,509	95,200	898	17,058	558	3,905
Total intermediate costs	i=h+h	13,032	361,833	1,325	25,178	3,845	26,917
Gross value added	h-a-i	53,716	1,507,107	3,000	56,997	3,152	22,062
Labour costs	m	36,678	1,026,977	1,800	34,198	2,840	19,980
Gross profit	n=l-m	17,038	480,130	1,200	22,799	312	2,182

**RESULTS** - The income statement of "menaide" fisheries of Catania, Cilento and S. Agata di Militello is shown in Tab. 2.

In general the average number of fishermen employed per vessel is higher than that of other small scale fisheries, e.g. those using trammel or gillnets. In some areas (e.g. Cilento and Catania), the "menaide" fishery generates employment also in associated activities, related to the processing and commercialization of the product. The value of the product landed is higher than that of the same product landed by other fisheries; in some area the anchovies from "menaide" are object of a brand ("Slow Food" Presidium).

Another common aspect of these fisheries is the low economic costs: the fishing costs, mainly related to fuel costs, are lower if compared with other fisheries. All these aspects produce economic profitability; the contribution the "menaide" fisheries on the annual activity of the involved fleets is considerably higher in terms of incomes and biomass landed than in terms of fishing days (Tab. 3). Another important aspect is the territorial and social peculiarity. These fisheries are carried out since many decades, following historical traditions.

Tab. 3 - "Menaide" fisheries. Estimation of the proportion on the annual days at sea, income and gross value added of an average fishing vessel.

Parameters	Catania area (GSA 10)	Cilento Area (GSA10)	S. Agata di Militello (GSA10)
	AVERAGE VALUE PER VESSEL	AVERAGE VALUE PER VESSEL	AVERAGE VALUE PER VESSEL
Number of days in "menaide" fishery	145	20	20
Total annual number of days	164	149	102
"Menaide" days/total annual days (%)	88%	13%	20%
Income from SSD fishery (€)	66,748	4,325	6,997
Total annual income (€)	73,500	20,195	27,686
SSD income/total annual income (%)	90.8%	21%	25%
GVA from "menaide" fishery (€)	53,716	3,000	2,224
Total annual GVA (€)	57,590	16,996	10,526
"Menaide" GVA/total annual GVA (%)	93%	18%	21%



Fig. 4 - Anchovies caught with "menaide"



Fig. 5 - Salted anchovies from Cilento area.

**CONCLUSIONS** - The study shows that the "menaide" fisheries currently present in Italy are species-specific gears with negligible impact on the environment and highly size selective on the target species. These aspects together with the economic importance at local scale, and the high social and cultural connotation, can provide robust evidences to implement specifically oriented management measures, which could ensure the regulated activity of these fisheries.

**REFERENCES**

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Fig. 6 - Vessel involved in the "menaide" fishery in the Cilento area.