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Socioeconomic performance of fisheries in the "Stretto" Coast FLAG in Southern Italy

Giuseppa Romeo[a], Paolo Careri[a], Claudio Marcianò[a,*]

[a] *Agraria Department, Mediterranea University of Reggio Calabria, Località Feo di Vito, 89122 Reggio Calabria, Italy*

Abstract

The importance of fisheries and their central role in creating strong relationships in the territories of some coastal communities has generated a revision process of the Common Fisheries Policy (CFP) with the inclusion of Fishery Local Action Groups in the definition of bottom-up local development strategies that involve the participation and planning capacity of fisheries communities. Nowadays, in some EU areas, there is a lack of information on fishermen activities from a technical-economic point of view, with negative consequences in fishery planning at the local level. The present study provides an analysis of the economic performance of the vessels operating in the area of the "Stretto" Coast FLAG in Southern Italy. The information on costs and revenues have been gathered in 2015 through a technical-economic survey on a sample of 34 fishing vessels representing 24.11% of the total number of vessels active in the area. The direct survey aims at quantifying specific economic indicators in order to link the data on fishing effort with those on the profitability of enterprises, differentiated into 3 classes of Gross Tonnage (GT), for an assessment of the technical and socio-economic results of fisheries in the area.

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Keywords: Small-scale fisheries; Economic indicators; Budget analysis

* Corresponding author. Tel.: +39-0965-169-4254; fax: +39-0965-1694550.
E-mail address: claudio.marciano@unirc.it

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1. Introduction

The fisheries sector in Calabria shows particular issues and aspects related to environmental and socio-economic differences of the various maritime sectors. In general, underdeveloped conditions are known to characterize the economy of Calabria from the rest of Italy. The causes of this situation can be traced back to some determinants, going from the insufficient organizational level in various sectors to the lack of infrastructure and to difficult environmental conditions. On the other hand, the complexity of the fisheries sector is due to the interdependence among biological, technological (vessels, gears and equipments) and economic and production factors (families, cooperatives, companies, management problems, etc.) (Marcianò, Gulisano, & Strano, 2011).

Notwithstanding the complexity characterizing this sector, it is also true that the small-scale fisheries could represent an important sustainable resource for coastal areas, even if it is necessary to tackle the several issues and problems concerning the fishing activity (Cambiè, Ouréns, Vidal, Carabel, & Freire, 2012). Indeed, some of the municipalities of the Calabrian territory are characterized by a high level of fish production and moreover, the fisheries sector is strongly and positively linked to the other sectors important for local economy. The European Fisheries Fund (EFF) Regulation 1198/2006 (EC, 2006), through the application of Axis 4 provides for a wide range of actions to help fisheries communities through the implementation of local strategies for the sustainable development of fisheries areas. Nowadays, the lack of adequate and proper information at a local level about the socio-economic aspects of fisheries evolves into a vulnerability for policy planning activities (Lam, Sumaila, Dyck, Pauly, & Watson, 2011).

The economic assessment by adopting indicators measuring performance of fisheries allows local governance to identify the most proper development strategy and, therefore, the best management plan (Cambiè, Ouréns, Vidal, Carabel, & Freire, 2012). In particular, costs and incomes are important variables in determining fishing behavior (Gordon, 2010).

In this context, the present study assesses the main economic results of the fisheries of the "Stretto" Coast FLAG in South Italy (Marcianò, Romeo, & Cozzupoli, 2015). The methodological approach has been subdivided into three phases: in the first one, a statistic analysis has examined both the socio-economic situation of the interviewees and the techno-structural characteristics of the vessels. Later, the sample has been segmented on the basis of Gross Tonnage (GT) into three classes (0-4; 5-10; >10). The budget analysis has been carried out and the obtained average values have allowed to describe the costs and incomes for each group, with a distinction between variable cost and fixed cost and the identification of various indicators, in order to assess the level of economic performance. The last phase examines the perceptions by fishermen of their needs and exigencies in order to improve the efficiency and profitability of their activities. The study is structured in the following way: Section 2 describes the collected data and the used methodology, section 3 shows the obtained results and the last section deals with conclusions.

2. Methodology

2.1. Data collection

A techno-economic survey was conducted during the period July-August 2015 about fishing vessels operating in Calabria, in the "Stretto" Coast FLAG area, located in the Tyrrhenian coast of the province of Reggio Calabria, including the landing points of Villa San Giovanni, Scilla, Bagnara Calabra, Palmi and Gioia Tauro. The vessel owner or members of the crew were interviewed face-to-face through a questionnaire properly prepared for the retrieval and the subsequent processing of the *income statement* of each vessel (Baldari, 2006). The questionnaire is structured in three parts. The first one deals with the interviewee's basic information (age, marital status, education level, the year and reason for the beginning of activity, legal form of enterprise, fishing category, authorized fishing systems in license, the most adopted fishing system, number of crew members). This part includes the characteristics of the vessel (Gross Tonnage, Engine Power, auxiliary deck equipment, on-board electronic instrumentation, gears used for fishing). The second part refers to the *income statement* related to the costs, earnings and fishing days in order to quantify specific economic indicators (Baldari, 2006). The last part includes an analysis of the exigencies of the fishermen. Data were collected from a random sample of 34 fishing vessels representing

24.1% of the total number of vessels operating in the study area. As regards the structural indicators of the observed sample, the total GT represents 25.4% of the area and the Engine Power is 29.4% of the total FLAG area (tab. 1). Moreover, the average Gross Tonnage and average Engine Power are higher than the total of area. The average age of the fleet, on the contrary, is lower than the average of the FLAG area. As for the fishing systems, those identified are: Hook and Lines (20.6%), Gillnets and Entangling nets (29.4%), Harpoon (8.8%), Surrounding Nets (8.8%), Driftnets (11.8%) and Trawls (20.6%).

Table 1. Comparative structural characteristics of the main population and sample of the field survey

FLAG Municipalities	Vessels		Gross Tonnage (GT)			Engine Power (kW)			Fleet average age
	number	%	GT	%	a.v	kW	%	a.v	a.v
Bagnara	63	44.7	1,173	65.4	18.6	8,090	62.4	128.4	28
Gioia Tauro	22	15.6	383	21.3	17.4	2,300	17.7	104.6	30
Palmi	33	23.4	80	4.5	2.4	981	7.6	29.7	40
Scilla	18	12.8	132	7.4	7.3	1,350	10.4	75.0	29
Villa S. Giovanni	5	3.5	26	1.4	5.2	240	1.9	48.0	33
Total FLAG	**141**	100	**1,794**	100	**12.7**	**12,961**	100	**91.9**	32
Sample	**34**	24.1	**455**	25.4	13.4	**4,040**	31.2	124.1	23

Source: data processing from Fleet Register and direct survey

2.2 Performance indicators and data analysis

In order to describe the structure of key costs, revenues and profits, it has been adopted the technique of economic budget. The concepts used in the budget analysis are defined as follows:

- Fishing Income (FI) is calculated through the multiplication of the daily average revenue for fishing system by working days. For the trawl vessels in this voice were considered also the subsidies.
- Total costs are classified into variable and fixed costs. The former comprehend running costs (fuel, ordinary maintenance of vessel, engine, auxiliary equipment and fishing gears; cost of food and provisions for crew; cost of fishing bait, ice and crates), labour cost and taxes. The latter consider depreciation costs, repair cost, interest on invested capital[1]. The value of the investment includes the initial value of acquiring the fishing vessel and all of the equipment necessary to carry out fishing activity.

This economic structure is only partially reflected in the approach used by official statistics (cf. Mannini & Sabatella, 2015). The main performance indicator is the Gross Profit (GP), obtained by taking off from FI, the Running Cost, Labour Cost, Taxes and Repair Cost (STECF, 2015). The calculated economic indicators refer to the ratio between the GP and the Fishing Effort indicators such as GT, kW, total annual Fishing Days. In addition, specific performance indicators, such as the ratio between the initial value of invested capital, obtained by calculating the initial value of means of production (vessel, engine, gears and equipment) and the GP; the ratio among the GP, the total number of Fishing Days and the Fishing Days per man (Baldari, 2006). A further aspect which is analysed is the percentage of the principal fishing system, obtained from the ratio between the FI of the principal fishing system and the total FI (tab. 2).

[1] The depreciation cost is calculated by linear formula (by considering the initial value of the means of production divided by the lifetime declared by respondents, expressed in years). Dealing with interest on invested capital, it is considered the initial value of the necessary means of production with an interest rate of 2.18%, obtained from the average of the interest rates on government bonds of the period 2012-2014. Regarding wages, the most common compensation system consists in remunerating 50% of the obtained income, and in the calculation the paid contributions are included; for seasonal workers, they are paid by day..

Table 2. Economic Indicators.

Typology	Finalities	Indicator	Symbol	Unit of measure
PROFITABILITY INDICATORS	Economic compensation of the sector, according to principal variables.	Gross Profit= Fishing Income - ∑(Running Cost, Taxes, repair cost, labour cost)	GP	€
		Gross Profit per unit of tonnage	GP/GT	€/GT
		Gross Profit per unit of engine power	GP/kW	€/kW
		Gross Profit per invested capital	GP/CV	-
		Gross Profit per fishing days	GP/Day	€/Day
		Gross Profit per total fishing days crew	GP/FDc	€/Day/Man
		Fishing income of Principal fishing system on total Fishing Income	Fi/FI	%
INVESTMENT INDICATORS	Assessment of efficiency, in terms of invested capital of production process.	Capital Value= sum the initial value of used means of production (vessel, engine, equipment)	CV	€
		Capital value per total fishing days crew	CV/FDc	€/Day/Man

3. Results and discussion

3.1 Socioeconomic characteristics

The socio-economic characteristics of the fishermen who answered the questionnaire are shown in Table 3. The descriptive analysis of the sample highlights that workers engaged in the fishing activity are exclusively male. The average age of the interviewees is quite high and is of 50 years; in particular, 35.3% of the sample appears to have an age of more than 60 years, underlining a lack of generational change. With regard to the level of education, data indicate that the 47.1% have attended a lower secondary school and none of the interviewees has an academic degree.

The main legal form is Cooperative Society, with 58.8% on the total. Moreover, regarding the years of work experience, it is observed that 88.2% is in the range over the 20 years, witnessing the long tradition that this activity has on the examined territory. Indeed, 94.1 % of the interviewees affirmed they had inherited the fisheries from their own families and come from different generations of fishing activity.

Table 3. Socio-economic characteristics.

Variable	Absolute Value	%	Variable	Absolute Value	%
Gender			Legal Form		
Male	100	100	*Cooperative Society*	21	61.8
Female	0	0	*Individual enterprise*	13	38.2
Age			Main fishery activity		
20-29	4	11.76	*Yes*	28	82.4
30-39	2	5.88	*No*	6	17.6
40-49	9	26.47	Years of experiences		
>50	19	55.88	*1-5*	0	0.0
Education			*6-10*	1	2.9
Primary education	5	14.7	*11-15*	3	8.8
Junior High school	16	47.1	*16-20*	0	0
High school	13	38.2	*>20*	30	88.2
Academic degree	0	0			

Source: Field survey, 2015.

3.2 Techno-economic results

The next table summarizes the techno-structural characteristics of the detected vessels (tab. 4). The arrangement of the vessels follows the GT classes and includes three classes of magnitude. Regarding the adopted fishing systems, of the 34 surveyed vessels, 12 result using only one fishing form. By analysing the different GT classes with the related main fishing system, it is highlighted, for the GT range between 0 and 4, the dominance of the systems that do not require a high fishing effort such as Gillnets and Entangling nets anchored and Driftnets. Instead, the intermediate range (from 5 to 10 GT) involves the vessels with the Hook and Lines system; moreover, for the highest class GT (> 10) the prevailing system is the Trawls, requiring the most effort between the identified systems.

Table 4. Structural characteristics of vessels of the sample

	Vessels	Principal fishing system	Other adopted systems	Total fishing system	GT	kW	Total fishing days (FD)	Crew members (n.)	Total fishing days crew (FDc)
0 - 4 GT	1	Gillnets and Entangling nets	Surrounding Nets	2	1	40.4	250	4	1,000
	2	Gillnets and Entangling nets	Hooks and Lines	2	1	44.1	270	2	540
	3	Gillnets and Entangling nets	Surrounding Nets	2	1	14.7	190	4	760
	4	Gillnets and Entangling nets	Gillnets and Entangling nets	2	1	21.0	126	3	378
	5	Gillnets and Entangling nets	Driftnets	2	1	24.3	210	1	210
	6	Gillnets and Entangling nets	Hooks and Lines	2	1	12.5	216	1	216
	7	Gillnets and Entangling nets	Surrounding Nets	2	2	103.0	300	2	600
	8	Gillnets and Entangling nets	Hooks and Lines	2	2	41.0	194	2	388
	9	Gillnets and Entangling nets	Surrounding Nets	2	2	23.5	295	2	590
	10	Driftnets	Driftnets, Hook and Lines	3	2	73.5	280	2	560
	11	Driftnets	Gillnets and Entangling nets	2	3	74.0	265	2	530
	12	Surrounding Nets		1	3	74.0	233	5	1,165
	13	Surrounding Nets		1	4	43.0	205	5	1,025
	14	Gillnets and Entangling nets	Driftnets, Hooks and Lines	3	4	65.0	135	3	405
	Average			**2**	**2.0**	**46.7**	**226.4**	**2.7**	**598**
5 - 10 GT	15	Hooks and Lines	Surrounding Nets, Gillnets and Entangling nets	3	5	52.9	210	3	630
	16	Gillnets and Entangling nets	Driftnets	2	8	73.5	235	2	470
	17	Hooks and Lines	Surrounding Nets	2	9	138.0	239	2	478
	18	Hooks and Lines	Surrounding Nets, Gillnets and Entangling nets, Driftnets	4	9	139.7	295	2	590
	19	Driftnets	Surrounding Nets, Hooks and Lines, Gillnets and Entangling nets	4	9	105.2	319	2	638
	20	Hooks and Lines	Surrounding Nets	2	10	139.0	155	3	465
	21	Harpoon		1	10	130.0	91	2	182
	Average			**2.5**	**8.6**	**103.1**	**221.3**	**2.3**	**493**
> 10 GT	22	Hooks and Lines		1	11	105.0	240	2	480
	23	Harpoon		1	12	127.0	100	4	400
	24	Surrounding Nets	Hooks and Lines	2	18	159.0	258	6	1,548
	25	Harpoon		1	19	169.1	85	2	170
	26	Hooks and Lines	Surrounding Nets, Driftnets	3	21	29.4	220	3	660
	27	Trawls		1	24	199.0	200	2	400
	28	Trawls		1	28	81.0	230	3	690
	29	Trawls	Hooks and Lines	2	29	58.8	278	3	834
	30	Trawls		1	33	353.0	232	2	464
	31	Hooks and Lines	Gillnets and Entangling nets, Driftnets	3	34	294.0	178	3	534
	32	Trawls		1	36	199.0	165	3	495
	33	Trawls		1	44	331.0	230	3	690
	34	Trawls		1	58	551.6	230	3	690
	Average			**1.5**	**28.2**	**204.4**	**203.5**	**3**	**620**

Source: Field survey, 2015.

The FI value tends to increase with the increment of the GT classes. In the highest dimensional category (> 10 GT), with an average FI value of 235.646, the prevailing vessels are those adopting the Trawls systems; in particular, the analysis of the FI shows a good response in terms of production for such a system. At the same time, this range will highlight the highest values of the FI for the vessels n.31 (Surrounding Nets and Hook and Lines) and n. 24 (Hook and Lines, Gillnets and Entangling nets and Driftnets) with more than 400,000 Euros (tab. 5).

Table 5. Economic results

Vessels		Economic Budget								Performance Indicators								
		Fishing Income (FI)	Repair Cost	Running Cost	Taxes	Laubor Cost	Depretiacion Cost	Interest	Total Cost	Gross Profit (GP)	GP/GT	GP/kW	Capital Value (CV)	GP/ CV	GP/ Days	CV/ FDc	GPc/ FDc	Fi/FI
0 - 4 GT	1	118,550	500	16,100	2,252	59,344.23	3,376.67	1,335.90	82,909.25	40,353.33	40,353.33	997.68	61,280	0.66	161	61	40	28.3%
	2	53,400	250	13,913	1,303	21,972.03	2,430.67	978.82	40,847.45	15,962.03	15,962.03	361.75	44,900	0.36	59	83	30	79.8%
	3	92,000	267	17,150	2,036	31,122.45	1,160.83	882.90	52,618.85	41,424.88	41,424.88	2,816.49	40,500	1.02	218	53	55	34.8%
	4	37,440	160	5,450	711	21,624.32	1,300.83	763.00	30,009.51	9,494.32	9,494.32	452.11	35,000	0.27	75	93	25	71.2%
	5	35,500	317	6,025	675	15,760.25	732.50	599.50	24,108.42	12,723.58	12,723.58	524.29	27,500	0.46	61	131	61	67.6%
	6	33,920	0	4,600	932	15,393.76	601.82	269.01	21,797.07	12,993.76	12,993.76	1,039.35	12,340	1.05	60	57	60	55.2%
	7	141,830	1,700	28,790	2,993	64,235.98	9,063.21	1,846.46	108,628.42	44,111.26	22,055.63	428.45	84,700	0.52	147	141	74	30.2%
	8	70,320	457	27,310	1,613	25,636.96	3,067.08	1,613.20	59,697.59	15,302.70	7,651.35	373.24	74,000	0.21	79	191	39	57.3%
	9	90,450	200	20,880	1,719	40,778.09	1,319.83	749.05	65,645.52	26,873.37	13,436.68	1,143.55	34,360	0.78	91	58	46	37.8%
	10	105,200	1,050	23,350	2,087	44,681.60	6,183.75	4,084.23	81,436.38	34,031.60	17,015.80	463.01	187,350	0.18	122	335	61	59.9%
	11	97,100	900	12,950	1,845	43,552.55	4,863.67	2,601.83	66,712.95	37,852.55	12,617.52	511.52	119,350	0.32	143	225	71	68.5%
	12	279,600	1,036	35,780	5,312	131,403.80	5,677.50	4,654.30	183,864.00	106,067.80	35,355.93	1,433.35	213,500	0.50	455	183	91	100.0%
	13	225,500	300	24,280	4,285	107,155.25	4,249.83	3,433.50	143,703.08	89,480.25	22,370.06	2,080.94	157,500	0.57	436	154	87	100.0%
	14	35,450	400	9,780	674	6,893.17	5,909.33	2,642.16	26,298.21	17,703.28	4,425.82	272.36	121,200	0.15	131	299	44	31.6%
Average		**101,161**	**538**	**17,597**	**2,031**	**44,968.17**	**3,566.97**	**1,889.56**	**70,591.19**	**36,026.76**	**19,134.34**	**921.29**	**86,677**	**0.50**	**159.92**	**147**	**56**	**58.7%**
5 - 10 GT	15	156,100	1,100	65,365	2,966	87,779.27	3,817.00	4,112.35	165,139.52	-1,110.17	-222.03	-20.97	188,640	-0.01	-5	299	-2	61.0%
	16	92,650	650	16,370	1,760	42,399.10	5,086.78	4,652.12	70,918.35	31,470.56	3,933.82	428.17	213,400	0.15	134	454	67	56.6%
	17	286,000	1,413	151,970	5,434	73,367.27	8,206.43	7,274.66	247,665.69	53,815.40	5,979.49	389.97	333,700	0.16	225	698	113	82.2%
	18	345,250	1,990	143,600	6,560	107,997.49	5,729.19	5,620.04	271,496.47	85,102.77	9,455.86	609.07	257,800	0.33	288	437	144	53.9%
	19	290,850	700	111,000	5,526	97,694.29	6,381.61	5,700.70	227,002.74	75,929.57	8,436.62	722.02	261,500	0.29	238	410	119	20.4%
	20	272,000	2,440	102,600	5,168	91,442.18	11,671.19	12,242.88	225,564.25	70,349.82	7,034.98	506.11	561,600	0.13	454	1,208	151	59.6%
	21	90,900	2,200	13,000	1,727	43,486.45	6,209.67	4,142.00	70,765.22	30,486.45	3,048.65	234.51	190,000	0.16	335	1,044	168	100.0%
Average		**219,107**	**1,499**	**86,272**	**4,163**	**77,738.01**	**6,728.84**	**6,249.25**	**182,650.32**	**49,434.91**	**5,381.05**	**409.84**	**286,663**	**0.17**	**238.46**	**650**	**109**	**61.9%**
> 10 GT	22	186,000	1,600	88,600	3,842	52,059.00	14,800.60	6,101.82	167,003.42	39,899.00	3,627.18	379.99	279,900	0.14	166	583	83	100.0%
	23	113,400	1,000	17,100	2,463	56,518.70	5,470.67	5,450.00	88,001.97	36,318.70	3,026.56	285.97	250,000	0.15	363	625	91	100.0%
	24	409,000	1,633	68,410	8,092	180,649.25	7,145.03	5,696.34	271,625.45	150,215.92	8,345.33	944.75	261,300	0.57	582	169	97	55.0%
	25	71,250	1,740	11,800	1,354	33,848.13	7,525.55	6,540.00	62,807.42	22,508.13	1,184.64	133.07	300,000	0.08	265	1,765	132	100.0%
	26	282,750	1,610	61,050	5,372	119,616.24	19,941.35	10,011.65	217,601.48	95,101.52	4,528.64	3,232.99	459,250	0.21	432	696	144	67.9%
	27	250,000	1,600	53,250	4,750	100,950.00	8,141.70	6,790.70	175,482.40	89,450.00	3,727.08	450.63	311,500	0.29	447	779	224	100.0%
	28	211,600	1,300	74,800	4,328	76,495.80	6,666.55	5,319.20	168,909.95	54,675.80	1,952.71	675.01	244,000	0.22	238	354	79	100.0%
	29	239,500	1,300	90,600	4,859	80,120.75	11,023.98	10,071.60	197,974.83	62,620.75	2,159.34	1,064.40	462,000	0.14	225	554	75	86.4%
	30	208,800	2,400	90,750	4,275	61,862.40	7,829.67	6,692.60	173,809.87	49,512.40	1,500.38	140.26	307,000	0.16	213	662	107	100.0%
	31	472,200	767	90,700	8,972	193,464.10	9,381.05	9,718.44	313,002.05	178,297.43	5,244.04	606.45	445,800	0.40	1,002	835	334	83.9%
	32	132,000	1,500	28,750	2,816	57,777.00	9,341.67	9,461.20	109,645.87	41,157.00	1,143.25	207.34	434,000	0.09	249	877	83	100.0%
	33	241,500	4,400	59,050	4,897	95,551.75	11,252.89	9,450.30	184,601.44	77,601.75	1,763.68	234.50	433,500	0.18	337	628	112	100.0%
	34	245,400	3,625	88,330	4,971	84,274.70	27,939.33	24,350.60	233,490.23	64,199.70	1,106.89	116.40	1,117,000	0.06	279	1,619	93	100.0%
Average		**235,646**	**1,883**	**63,322**	**4,691**	**91,783.68**	**11,266.15**	**8,896.50**	**181,842.80**	**73,966.01**	**3,023.82**	**651.67**	**408,096**	**0.21**	**369.23**	**780**	**127**	**91.8%**

Source: computed from field survey data, 2015.

The analysis of explicit costs shows the highest values to the items *Wages* and *Running Costs*. Among implicit costs, the items related to the average value of depreciation costs and the interest on invested capital tend to grow with the increase of the GT dimensional classes. The average value of the GP, as in the case of the FI, increases with the increment of the GT dimensional classes. As regards economic efficiency indicators, it was calculated the ratio between the GP product and the fishing capacity indicators (GT, kW); these indicators deal with the ratio between the GP and the value of the invested capital (CV), the ratio between the GP with the total Fishing Days (FD) and the Fishing Days per man (FD/man). Moreover, the value of invested capital was compared with the total days per man (tab. 5). The data analysis shows that the ratio both between the GP and the GT, and between the GP and the kW tends to decrease with the increase of the considered dimensional classes. A further aspect concerns the ratio between the GP and the invested capital; also in this case, it is evident a decreasing trend and, for larger vessels, a lower efficiency of the financial result compared to the invested capital. The next indicator analyses the percentage of FI obtained by the main fishing system with respect to the total of the FI. In the lowest dimensional class (0-4GT) and in the intermediate one (5-10 GT), the average value of the incidence of the main FI is respectively equal to 58.7% and 61.9%. The highest is characterized by a high incidence of FI dimensional class of the main system, the average value of which is 91.8% (tab. 5).

By analysing the needs and suggestions highlighted by the interviewees in order to improve the socio-economic conditions of the fisheries sector, it is evident the persistence of various issues previously tackled (Baldari, 2006). The table 6 summarizes the priorities identified during the interviews.

Table 6. Exigencies expressed by the fishermen.

Expressed exigencies		Priority level
Productive structures and infrastructure		
Engine	Benefits on excise duty for fuel and engine replacement.	●●●
Fishing gear	Mesh at 18 mm for drifnets.	●●●
Shipbuilding	Lack of shipyards and high costs for towpath and launching.	●●
Commercial structures	Necessity of a fish market.	●●
	Realization of fish processing and/or storage plants.	●●●
Technical assistance	More information on public announcement and a support in preparation of aid applications.	●●●
Professional Training	Absent.	●
Certification	Building an Area Brand.	●
Promotion and marketing	Little developed.	●●
Other		
Realization of a regional fishing calendar for target fish and gear.		●●
Ban on fishing for Drawling vessels within 3 miles of sailing required by small fishing.		●●●
Request for fishing tourism licenses even for small-scale fishing.		●
Greater consideration for small-scale fishing at political level and within the fishing community.		●●●
Pollution: complaining about the lack of attention by municipalities about the outlets of purifiers.		●●
Necessity of new licenses for commercial fishing.		●●●
Trend toward innovation: low.		●
Stricter controls and greater restrictions for not professional fishing.		●●●
Regulations: complaining about too strict, complex laws and controls.		●●●

Source: Field survey, 2015.

Conclusions

Recently, there is a growing need for more detailed socio-economic information related to local fisheries in the Mediterranean Sea, in order to provide economic advise about policy tools to support fisheries communities. The economic performance indicators presented in this paper have been computed following a methodology that allows

to define the main technical, social and economic aspects related to fisheries in the "Stretto" Coast Flag in Calabria, Southern Italy. The carried out socio-economic analysis highlights that the fisheries sector presents a scarce generational turnover for the low availability of young workers to bear the sacrifices of the fishing activity. Another weakness is the low level of education, as it is evident from the survey. In general, these two aspects can represent a restraint to the effectiveness of a policy addressed to the processes of innovation and definition of new development strategies.

Regarding the three GT classes, economic results show that the group over 10 GT, with the trawls as the mainly adopted fishing system, not only has the highest average annual gross profit but also requires the greatest capital investment. Unlike the other two groups, having an artisanal fisheries connotation, the trawls fishing system is not very selective and has a significantly negative environmental impact because of the damage to the seafloor ecosystem and the catch of many pelagic species of non-commercial value.

In general, fishing activity is profitable for all GT classes and fishermen could show low interest for development policies aiming at the diversification of fisheries in order to limit fishing effort. Fishing tourism may not be very attractive for the fishermen using the trawl system; at the same time, even the small-scale fishermen are poorly oriented towards this activity, considered slightly profitable for the low tourism flow and the limited number of tourists per vessel.

The obtained results give an insight into the economic performance of the fishing fleet of the area of the Stretto Coast Flag, and constitute a reference point for decision makers involved in the definition of the new local development plan, which should be related to the real conditions of the area.

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