

## Chapter 13

# Social sustainability

## 13.1 Analysis of social sustainability

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The concept of the social sustainability of fisheries, understood as a capacity of ensuring conditions of human well-being (safety, health, education), requires careful analysis and evaluation of the data and strengths and weaknesses characterising the economic, social and cultural context of fishermen and those employed in the sector.

The relevant national data shows evident structural weaknesses:

- the average age of the workers (around 41 years), for whom there is not a sufficient generational replacement, due to various influencing factors, both of a bureaucratic nature and in terms of image;
- little inclination towards innovation, the effects of which, such as the rise in fuel prices and distribution costs, have accentuated the present economic crisis and further accelerated the process of decline in fisheries in terms of employment, earnings and the capacity of creating added value;
- inadequate levels of education and training among the wide range of professional figures employed on board and on shore throughout the entire fishing industry;
- structural characteristics of the fishing enterprises (moderate sizes, fragmentation across the territory and fragile organisational models, with the exception of significant areas of specialisation, such as Sicily, Veneto and Marche);
- a lack of territorial representation and limited information at the level of local representation;
- insufficient attention to the size of the macro variables related to the contribution of fisheries to the GNP, in terms of capacity to produce wealth and value and the impact of fisheries on the divisions downstream and upstream from the production process (naval shipbuilding, industries and companies for the processing and marketing of the product and intermediate goods and services);
- difficulties in dialogue among the competent administrations and between these and the production division.

In particular, the weaknesses highlighted and accentuated in the current phase of crisis (reduction of turnover in fisheries and limited level of labour productivity), together with a careful examination of strengths (high quality of the fished and marketed product, and increasing attention to regulations on protection of the environment and consumers), should be further integrated by an analysis of growth opportunities (improvement of the catch process and product treatment through available technologies), in order to provide a comprehensive analysis of fisheries.

The aspects mentioned above form the starting point for a reflection on the social policies for the sustainability of fisheries aimed at the economic revitalisation and conversion of areas weakened

by the decline in fisheries or characterised by significant structural decline. Fisheries contribute 4.4 billion euros to the national GNP and create direct and indirect employment for over 59,000 workers, including fresh and seawater aquaculture operators (Source: Censis – Report on the economy of the sea 2011). In this sense, fisheries (including sea and lagoon fish farming, fish culture and aquaculture) significantly influences the formation of the resources at market prices, while a significant presence of distribution costs is noted, amounting to 2.3 billion euros (table 13.1). Among the more important aspects, which are not always given sufficient consideration, is that of the pervasiveness of employment in fisheries, which involves other adjacent sectors, as shown by the employment multiplier values for maritime, manufacturing and tertiary activities, which indicate a significant penetration of fisheries in the divisions downstream from the production process (figure 13.1).

**Table 13.1 - Fisheries: resources, uses and employment in the sector, 2009. Values in million euros (current prices).**

		2009
<b>Economic cost of resources</b>		
A=B+C	Production	1,982.00
B	Added value	1,223.00
C	Intermediate costs	759
D	CIF imports	835
E	Distribution costs	2,381.82
F	Other	27.59
G=A+D+E+F	Resources at market prices	5,226.41
G-D	Contribution to GDP	4,391.41
<b>Characteristic relationships</b>		
H=C/B	Intermediate costs/Added value	0.621
I=B/A	Added value/production	0.617
J=C/A	Technical coefficient (Intermediate costs/prod.)	0.383
K=D/G	Import coefficient	0.16
<b>Impact measurements</b>		
L=1-K	Direct impact on production	0.84
M=L(1-J)	Total impact on production	1.362
N=E/A	Impact downstream	1.202
O=M*N	Multiplicator (impact upstream and downstream)	2.563
<b>Financial statement of uses</b>		
A	Intermediate consumptions	1,272.19
B	Final consumptions	3,616.72
C	Gross fixed investment	151.496
D	Stock variation	-
E	Exports	186
f=b+c+d+e	Final uses	3,954.22
J	Total uses	5,226.41
h=e/g	Export coefficient	0.036
<b>Work unit</b>		
A	Direct AWUs	59,098
B	AWUs upstream	3,751
C	AWUs downstream	23,407
d=a+b+c	Total work units	86,256

Impact measurements on employment levels		
$e=b/a$	Impact upstream	0.063
$f=c/a$	Impact downstream	0.396
$g=l+e+f$	Multiplicator (upstream and downstream)	1.46
Productivity measures		
Prod/Dir AWU	Per worker production (thousands of euros at current price)	33.54
AV/Dir AWU	Added value per worker (thousands of euros at current price)	20.69

Source: Censis processing of Istat and Federpesca data.

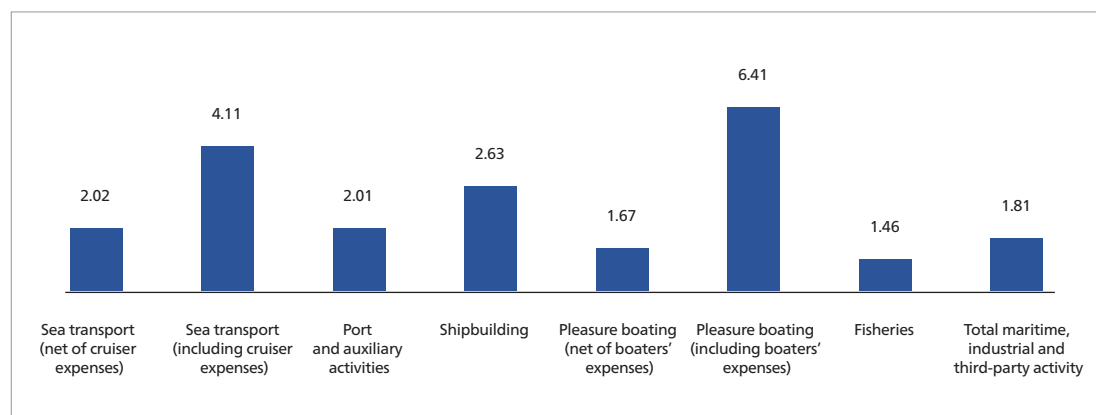


Figure 13.1 - Employment multipliers for maritime, manufacturing and tertiary activities.

## Areas of intervention for the social sustainability of fisheries

The assessment of the social impact of the new Common Fisheries Policy is an element of great concern for the fisheries enterprises and for fisheries operators. The Commission's proposal is aimed at sustainable management of fishery resources and the development of responsible fisheries. These objectives require new measures and coordinated interventions to ensure the maintenance of employment levels, which have already been seriously called into question by the integral application of the Mediterranean Regulation in 2010.

Social sustainability in fisheries is actually defined by the quality of the fishing system and the areas of intervention (enterprises, training, social and welfare instruments, work environments), which, together, indicate its performance trend, understood as a capacity of generating value and efficiency, minimising costs, optimising the organisational structure, increasing the skills of operators and improving the relationship with the environment and the markets. This is the area of operation within which the measures accompanying the implementation of new management strategies, whether produced by EC or national legislation, will be identified.

## Structural characteristics of fishing enterprises

A quantitative assessment of the structural aspects of the enterprises in relation to the activity carried out, the forms of enterprise, the employment contract applied, and the entrepreneurial dynamics in fisheries is closely linked to the various professional figures with adequate and diversified knowledge and skills.

The maintenance of employment, the transition to responsible and sustainable management of fisheries, the development of the quality of the system, and the modernisation of the fish sector are strictly connected not only to the adoption structural measures, but also to the preparation of flexible training interventions, aimed at consolidating and integrating the industry in the process of innovation.

With reference to the businesses, the structural characteristics in relation to the type of economic activity carried out, for the period 2000-2009, refer to over 6000 small and medium enterprises, in which those carrying out "fishing in marine and inland waters" undoubtedly represent the most important component in terms of numbers (table 13.2).

**Table 13.2 - Enterprises operating in fisheries in Italy: distribution of absolute figures (above) and percentages (below) in relation to the type of economic activity carried out in 2000-2009.**

Type of economic activity carried out	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Marketing of Fish Products	900	943	1,002	998	1,065	1,098	1,122	1,170	1,216	1,200
	15	15.6	16.7	16.5	17.4	17.9	18.3	19.1	19.8	19.4
Processing of Fish Products	371	379	394	395	404	426	416	415	424	430
	6.2	6.3	6.6	6.5	6.6	6.9	6.8	6.8	6.9	6.9
Fishing at sea and in inland waters	4,597	4,598	4,477	4,487	4,505	4,472	4,441	4,381	4,347	4,419
	76.7	75.9	74.5	74.4	73.6	72.8	72.4	71.7	70.7	71.4
Fish farming	128	137	140	151	144	147	153	148	159	142
	2.1	2.3	2.3	2.5	2.4	2.4	2.5	2.4	2.6	2.3
<b>Total</b>	<b>5,996</b>	<b>6,057</b>	<b>6,013</b>	<b>6,031</b>	<b>6,118</b>	<b>6,143</b>	<b>6,132</b>	<b>6,114</b>	<b>6,146</b>	<b>6,191</b>
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: National Fisheries Observatory.

Nevertheless, the existing business structure does not correspond coherently to the demands of competitiveness, not only of the fleet, but of the entire fisheries system. Certain modernisation factors, such as internationalisation, strengthening of processing, transformation and product marketing activities, improvement of the distribution network and the development of related activities connected to tourism, such as fishing tourism, have not been developed on an appropriate scale.

**Table 13.3 - Enterprises operating in fisheries in Italy: distribution of absolute figures (above) and percentages (below) in relation to the form of enterprise in 2000-2009.**

Company structure	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Boat owner	1,906	1,841	1,748	1,715	1,696	1,674	1,627	1,623	1,618	1,635
	31.8	30.4	29.1	28.4	27.7	27.3	26.5	26.5	26.3	26.4
Cooperative	928	1,015	1,080	1,112	1,162	1,210	1,251	1,275	1,294	1,321
	15.5	16.8	18	18.4	19	19.7	20.4	20.9	21.1	21.3
Share capital company	1,083	1,121	1,179	1,205	1,239	1,276	1,276	1,278	1,309	1,321
	18.1	18.5	19.6	20	20.3	20.8	20.8	20.9	21.3	21.3
Partnership	1,905	1,928	1,882	1,880	1,905	1,872	1,876	1,838	1,825	1,813
	31.8	31.8	31.3	31.2	31.1	30.5	30.6	30.1	29.7	29.3
Other forms of company	134	119	95	92	89	83	75	74	72	73
	2.2	2	1.6	1.5	1.5	1.4	1.2	1.2	1.2	1.2
Other	40	33	29	27	27	28	27	26	28	28
	0.7	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.5	0.5
<b>Totals</b>	<b>5,996</b>	<b>6,057</b>	<b>6,013</b>	<b>6,031</b>	<b>6,118</b>	<b>6,143</b>	<b>6,132</b>	<b>6,114</b>	<b>6,146</b>	<b>6,191</b>
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: National Fisheries Observatory.

The regional differentiation in the fishing activity and the particular features of the individual fishing committees, to which the same indicators of effectiveness and efficiency (analysis of consumptions, fishing effort and catch quantities) for the maintenance of social sustainability cannot be attributed, represent elements of greater complexity in the analysis (table 13.4).

**Table 13.4 - Enterprises operating in fisheries in Italy: territorial distribution by regions of the exercise of productive activity in absolute frequencies (above) and percentages (below) for 2000-2009.**

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Abruzzo	321	313	302	301	310	295	288	282	285	292
	5.4	5.2	5	5	5.1	4.8	4.7	4.6	4.6	4.7
Basilicata	7	7	5	2	1	1	0	0	1	0
	0.1	0.1	0.1	0	0	0	0	0	0	0
Calabria	219	214	210	209	214	220	237	242	253	270
	3.7	3.5	3.5	3.5	3.5	3.6	3.9	4	4.1	4.4
Campania	299	322	334	348	377	389	407	414	401	397
	5	5.3	5.6	5.8	6.2	6.3	6.6	6.8	6.5	6.4
Emilia Romagna	426	451	441	452	443	469	468	463	476	464
	7.1	7.4	7.3	7.5	7.2	7.6	7.6	7.6	7.7	7.5
Friuli	130	127	131	134	132	139	144	148	162	176
	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.6	2.8
Lazio	341	335	331	326	349	350	355	364	361	355
	5.7	5.5	5.5	5.4	5.7	5.7	5.8	6	5.9	5.7
Liguria	189	191	192	193	200	207	211	216	209	216
	3.2	3.2	3.2	3.2	3.3	3.4	3.4	3.5	3.4	3.5
Lombardy	104	110	120	110	116	119	116	119	119	125
	1.7	1.8	2	1.8	1.9	1.9	1.9	1.9	1.9	2
Marche	569	618	631	635	632	620	617	601	610	644
	9.5	10.2	10.5	10.5	10.3	10.1	10.1	9.8	9.9	10.4
Molise	51	57	46	43	38	36	32	38	47	42
	0.9	0.9	0.8	0.7	0.6	0.6	0.5	0.6	0.8	0.7
Piedmont	33	35	37	34	38	44	44	52	61	65
	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.9	1	1
Apulia	605	601	561	571	571	571	581	580	570	578
	10.1	9.9	9.3	9.5	9.3	9.3	9.5	9.5	9.3	9.3
Sardinia	357	376	389	385	399	387	383	378	387	387
	6	6.2	6.5	6.4	6.5	6.3	6.2	6.2	6.3	6.3
Sicily	1,579	1,518	1,507	1,488	1,466	1,457	1,418	1,405	1,371	1,353
	26.3	25.1	25.1	24.7	24	23.7	23.1	23	22.3	21.9
Tuscany	275	266	241	256	276	275	284	289	302	300
	4.6	4.4	4	4.2	4.5	4.5	4.6	4.7	4.9	4.8
Trentino	18	17	18	20	22	20	22	20	21	20
	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3
Umbria	14	13	12	12	13	15	15	15	15	15
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Veneto	459	486	505	512	521	529	510	488	495	492
	7.7	8	8.4	8.5	8.5	8.6	8.3	8	8.1	7.9
<b>Totals</b>	<b>5,996</b>	<b>6,057</b>	<b>6,013</b>	<b>6,031</b>	<b>6,118</b>	<b>6,143</b>	<b>6,132</b>	<b>6,114</b>	<b>6,146</b>	<b>6,191</b>
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: National Fisheries Observatory.

In quantitative terms, the small coastal fishing boats and the entrepreneurs/self-employed workers, which represented 5.8% in 2000-2001 and 5% in 2002, reached an average percentage frequency of 1.8% in 2009 (table 13.5).

If the number of employed is examined, it is found to be correlated to the frequencies given by the number of enterprises and is, on average, around the levels expressed by the three contracts currently in force.

Where the number of employed increases, there is a reduction in the number of enterprises, thereby creating a smaller size of these, with 5 or 6 contracts.

The low numbers of employees per enterprise makes the organisation of the activity more complex and also influences the duration and type of training activities, both for workers on board and those on shore. The regulatory provisions regarding discharge and leave for study purposes do not correspond to a real availability of time and of training sites near the place of work or access to “blended” learning methods.

The evolution of individual fishing communities towards larger districts and the creation of more elaborate economic systems requires new types of action and educated and informed operators. It also poses a challenge to the enterprises, requiring a capacity for innovation, interrelation, collaboration, and enhancement of human and local resources, as well as the development of the knowledge, skills and capacities of human resources in the various operational roles.

**Table 13.5 - Enterprises operating in fisheries in Italy: frequency distributions in relation to the number of employment contracts of the employees for 2000-2009.**

No. employment contracts	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%	Abs. freq.	%
1	684	12.1	675	11.8	717	12.6	737	12.7	782	13.4	792	13.5	800	13.5	865	14.4	866	14.4	872	14.3
2	684	12.1	707	12.4	740	13	814	14.1	773	13.3	778	13.3	822	13.9	852	14.2	856	14.2	878	14.4
3	755	13.4	823	14.4	836	14.6	789	13.6	805	13.8	808	13.8	790	13.3	737	12.3	804	13.3	865	14.2
4	693	12.3	716	12.6	686	12	672	11.6	701	12	697	11.9	704	11.9	669	11.1	693	11.5	675	11.1
5	553	9.8	546	9.6	481	8.4	504	8.7	497	8.5	498	8.5	509	8.6	540	9	472	7.8	526	8.7
(5.10)	1,186	21	1,161	20.4	1,178	20.6	1,146	19.8	1,146	19.7	1,208	20.6	1,187	20	1,187	19.8	1,203	19.9	1,133	18.6
(10.15)	421	7.5	415	7.3	407	7.1	471	8.1	472	8.1	462	7.9	467	7.9	472	7.9	456	7.6	468	7.7
(15.30)	390	6.9	386	6.8	401	7	379	6.6	388	6.7	382	6.5	399	6.7	407	6.8	428	7.1	414	6.8
>30	281	5	275	4.8	265	4.6	271	4.7	259	4.4	244	4.2	255	4.3	273	4.5	255	4.2	247	4.1
<b>Totals</b>	<b>5,647</b>	<b>100</b>	<b>5,704</b>	<b>100</b>	<b>5,711</b>	<b>100</b>	<b>5,783</b>	<b>100</b>	<b>5,823</b>	<b>100</b>	<b>5,869</b>	<b>100</b>	<b>5,933</b>	<b>100</b>	<b>6,002</b>	<b>100</b>	<b>6,033</b>	<b>100</b>	<b>6,078</b>	<b>100</b>

Source: National Fisheries Observatory.

## Training

A close link between marine communities, administrators, sector representatives and various skills, and the opportunity to make use of research, such as the surveys conducted by the National Fisheries Observatory on the mapping of the essential professional, training and social requirements for fisheries, require new operational approaches to ensure its sustainability.

In regard to training and working requirements, the analysis conducted on “the identification of working areas and figures in fisheries requiring professional training” underlined that the interventions to be organised are no longer a question of individual single-topic training courses, but should be aimed at increasing cross-sectoral, technical and professional skills, to support the fishing industry in

the area of fleet/resource management, improvement of production, product/process enhancement and quality, management of markets, work safety, food safety, and other aspects. These actions are essential from a sustainability perspective, on the one hand to mitigate the effects of the crisis and give new vitality to fisheries, and on the other to allow fishermen to adjust to the binding norms enforced by the new Mediterranean Regulation, which require operational and procedural methods aimed at the protection and safeguarding of living resources.

The numerous requirements contained in the most recent legislation do not unfortunately correspond at a national and local level with an availability of training centres for designing targeted apprenticeship and on-the-job training programmes capable of testing and disseminating the most appropriate methods for the entire sector and of improving the process of communication with the appointed administrations. Interviews and updates conducted have underlined the need to promote the circulation of know-how to counter the inward-looking nature of the division, and to safeguard skills and crafts in which the strong manual component of the work is combined with advanced technologies, which require careful assessment of risks and work safety procedures.

The continuation of the lack of information and updating on the main legislation affecting fisheries (safety, hygiene and product wholesomeness), for which a solution can be found in the regional training resources, requires further simplification and clarification, to avoid the application of procedures that tend to hamper the operational efficiency of individuals and enterprises. The modernisation of fisheries through the establishment of the Coastal Action Groups (CAG) envisaged by the EFF and coordinated peripheral actions will enable an increase in the level and quality of the training response. The adoption of bottom-up approaches, through assessments in the field, can enhance the participation of the operators, the role of local centres and territorial representation. The support of a prompt listening service, based on conversation models on relevant issues, would favour the process, allow due account to be taken of the demand/offer expressed by the territories and enable a concrete response to their priorities. This would therefore provide a new communications strategy, to which contributions may be made only after having participated in training and/or self-training modules and obtaining a useful certification.

## Employment security and welfare

Analysis of the organisation, the quality of the work and the environments, and the social security and pension schemes aimed at both addressing work-related accidents and disease as well allowing workers to participate fully in the fisheries modernisation process, is an essential element in a reflection on the social sustainability of fisheries.

At present there are some clear shortcomings concerning the working conditions and safety of the workers. The number of accidents that occur on board due to the lack of targeted social provisions is a poignant indicator for an adequate description of work in fisheries, where in addition to stress and fatigue, there is a high rate of musculoskeletal disorders (Handling, weight, incorrect posture and movement, highly repetitive movements, use of hands for heavy work, direct mechanical pressure on body tissue, vibrations, cold working environments - OSHA, 2010).

## Conclusions: actions to support fisheries sustainability

The social sustainability of fisheries cannot disregard the permanence and development of the local economic communities, for which fisheries represents both a source of income and a cultural and professional identity. Only through consolidated relationships of integration and

interaction between fishing activities and the productive and social structure as a whole will the entire industry be able to benefit, together with potential relationships between landing sites, local markets and the marketing, processing and preservation of the product. The increase of responsible consumption practices among citizens, aimed at safeguarding the wholesomeness, genuineness and diversification of the product range, is an important aspect, capable of strengthening the integration between the fisheries sector and its social reference base. The assumption of precautionary and systematic approaches by all regional players, in line with EC policies, and in particular with the measures referred to in Axes 3 and 4 of the EFF (European Fisheries Fund), to be developed by means of CAGs (Coastal Action Groups) or FLAGs (Fisheries Local Action Groups), if appropriately implemented, represents the intervention measure best suited to promote growing social sustainability in fisheries. In conclusion, the policy orientations that could contribute to the attainment of a strategy that avoids undermining the social dimension of fisheries sustainability can be summarised within the following areas:

- cooperation, dialogue and information between the productive sector and the institutional system;
- simplification of the inter-institutional procedures and steps that paralyse enterprises;
- transfer of technology to national small-to-medium enterprises to promote a new management approach and maximisation of value;
- social security instruments, such as a wage guarantee fund, which can provide employees with adequate social provisions.

## References

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## 13.2 Social sustainability indicators

Salerno G.

Four different indicators which proved to be suitable for analysing the social sustainability of Italian fisheries were selected as part of this study. Several levels of analysis can be associated with these indicators, namely:

- the ratio of labour costs to workforce numbers (labour costs/workforce) aimed at ascertaining the level of social prestige of fishermen on the basis of their ability to guarantee levels of prosperity that are suited to their social context (correlation between skills/primary sector income);
- workforce indices based on job description (deckhands, skippers/mates/engineers, multirole workers) aimed at analysing the evolution of professional skills of operators by means of their respective datasets over time.
- the ratio of male to female crew members (M/F) aimed at analysing access conditions for women joining the world of fisheries;



- the ratio of the number of crew members per vessel to vessel capital (crew members/vessel capital) aimed at analysing work intensity according to fishing system. This is based on the different impact levels of work as a factor on the level of company capitalisation.

Finally, the four selected indicators allow to estimate the prospects of social development with a view to making the following objectives sustainable:

- sustaining economic and social prosperity in fishing areas by favouring a fair distribution of resources;
- acquiring skills and favouring the preparation and implementation of a local development strategy;
- promoting improved chances for young people and women to gain access to work.

## Ratio of labour costs to workforce numbers (labour costs/workforce)

An initial social sustainability indicator of fisheries can be found in fishermen being able to gain recognition for their professional skills. In this case the social wellbeing indicator can be taken to be the ability of fisheries to generate labour costs that are appropriate to its own reference social context. The labour costs to workforce ratio is the appropriate estimating tool for estimating the social wellbeing obtained by fishermen, whereas the corresponding value, found by ISTAT in agriculture statistics, becomes the analysis *reference point*. The choice of *reference point* is based on the consideration that agriculture, like fisheries, is a primary sector activity and is a suitable social reference sector.

This having been considered, the performance analysis of the social efficiency indicator is based on the results obtained in the period 2004-2010.

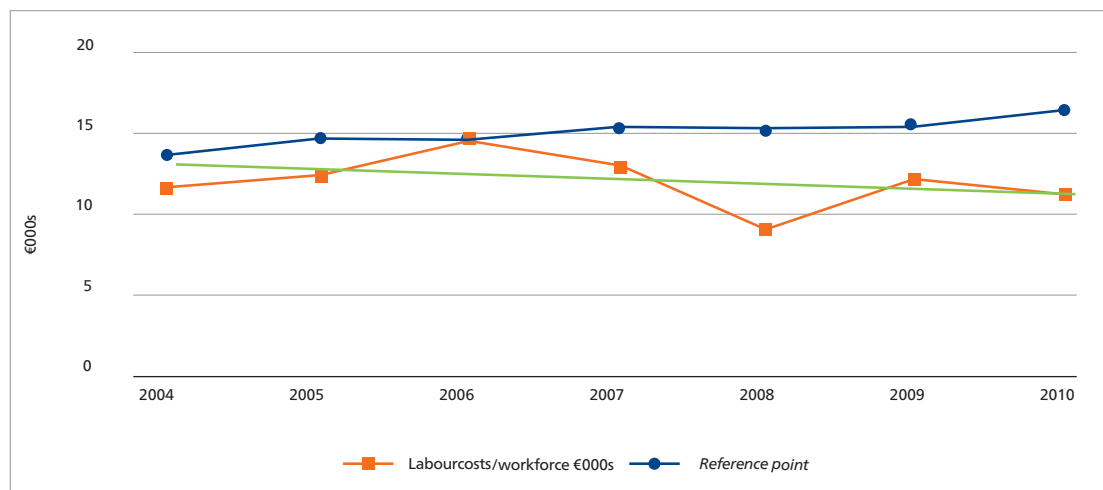


Figure 13.2 - Social sustainability indicator for the national fleet, 2004-2010 (Source: MiPAAF - Irep).

The trend line shown in figure 13.2 underlines the stability of the social sustainability (labour costs/workforce). Nevertheless, this stability assessment is valid only if the analysis is restricted to social relationships between fisheries operators. In terms of their relationship with the community of

primary sector operators, the social wellbeing of fish producers diminished. In the period under examination, the agriculture worker *reference point* reveals an upward trend in the indicator value. Over the medium term, therefore, compared to other similar production sectors, fishermen were affected by an “impoverishment factor”. This reduces the perceived social self-esteem of operators and is a limit to the social wellbeing of fishing communities.

## Workforce indices based on job description (deckhand, mate/skipper/engineer, multirole worker)

Creating professional qualification indices for fisheries (base year 2002) allows the career progression of fishermen to be evaluated and is a useful tool for assessing workforce skill levels. According to the 2007 report by the National Fisheries Observatory, the classification of fisheries workforce, according to job level, can be divided up into a succession of three rising groups: deckhand, mate/skipper/engineer and multirole worker. In 2007, as shown in table 13.6, the deckhand index reached the 85.4 level compared to the mate/skipper/engineer index of more than 89. The trend of the two indices indicates that there is professional development in fisheries and that the skill level of the workforce is improving. In the period under consideration, the index of greatest professional skill (multirole worker) reached 178. This value is part of a trend towards improved professional skills, characterised by an operational need to guarantee greater flexibility in fishing operations.

**Table 13.6 - National fleet professional skill indices (year 2002=100), 2002-2007.**

Qualifications	2002	2003	2004	2005	2006	2007
Deckhand	100.0	99.6	98.7	95.3	91.6	85.4
Mate/Skipper/Engineer	100.0	102.9	101.3	101.8	100.4	89.9
Multirole worker	100.0	100.0	131.7	144.4	276.2	177.8

Source: National Fisheries Observatory.

In the light of a growth in skill levels, in relative terms there is a worsening of labour costs per workforce unit. This situation is a further element of lack of social sustainability: the improvement in fishermen’s professional skills found no corresponding advantage in their ability to improve their social wellbeing. In this context, the lack of financial and social recognition of fishermen’s professional skills curtailed the influx of young people to the sector. The confirmation of this statement is to be found in the rise of the average age of fishermen which in the last six years went from 41 to 43 years old.

## Ratio of male to female workers

The fact that it is possible to assess the capability of social actors to work together and efficiently, implies that it is possible to assess the conditions for women gaining entry to fisheries. This aspect can be analysed using an indicator obtained from the ratio of male workforce members to female ones. This expresses the percentage frequency in the sector, by sex, as shown in table 13.7. The metier of fisherman has always been the prerogative of the male sex, relegating women to land jobs. For some time now, however, there is increasing official recognition of the role of women in the national fisheries economy and this is an important social progress indicator.

**Table 13.7 - Percentage employment according to sex, and the female frequency index (year 2002=100), fishing 2002-2007.**

Frequency according to sex	2002	2003	2004	2005	2006	2007
Males	96.0	95.7	95.4	95.4	95.2	94.9
Females	4.0	4.3	4.6	4.6	4.8	5.1
Female index	100.0	107.5	115.0	115.0	120.0	127.5

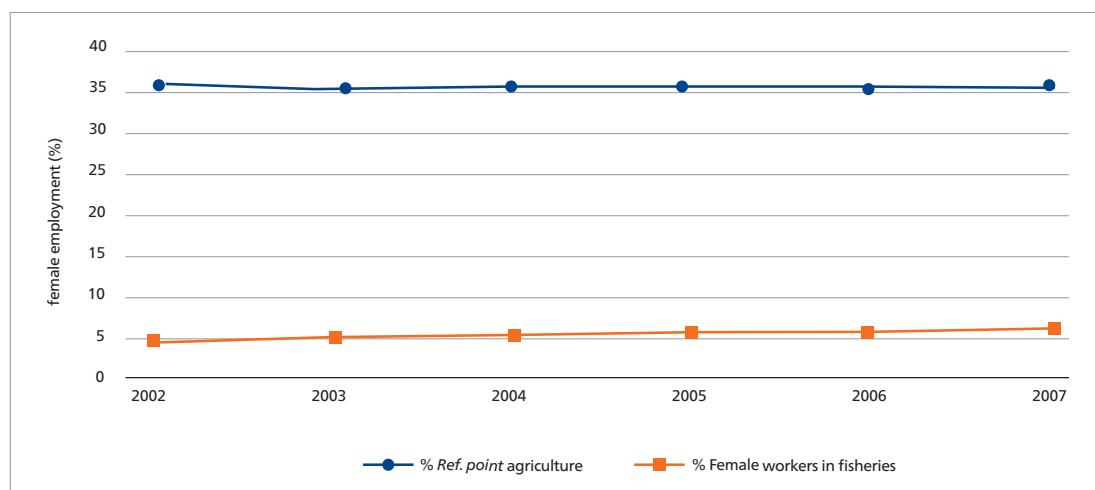
Source: National Fisheries Observatory.

The female presence index over the period 2002-2007 grew progressively until it reached level of 127.5. This is a very important trend in absolute terms, but there is still some way to go for the lag in the ability to involve women to be redressed. In fact, although there is a growing trend, the presence of women is still lagging well behind similar indicators. There is a contrast between the 5.1% of women who work in the fishing industry (table 13.7) and agriculture which is able to attract 30.4% of women workers (table 13.8).

**Table 13.8 - Percentage employment according to sex, and the female frequency index (year 2002=100), agriculture 2002-2007.**

Frequency according to sex	2002	2003	2004	2005	2006	2007
Males	68.2	68.3	69.1	66.7	68.8	65.1
Females	31.8	30.3	31.1	30.4	30.8	30.4
Female index	100.0	93.5	98.0	91.9	96.3	89.6

Source: Istat.



**Figure 13.3 - Social sustainability indicator for the national fleet - employment of women 2002-2007 (Source: MiPAAF - Irepa).**

From a social point of view, the emergence of cash-in-hand work by women is an important institutional target. Most women, who work on land to support fishing activities, work in a family business context, and their employment income is not quantified. In this context, women workers belong to the “non-remunerated activity” category and, as such, this prevents them from having a

recognised social role and denies them the rights arising from worker status. This is a situation that once again underlines the need for improving the economic sustainability of the sector. A recovery in earnings capacity for the fleet, in fact, is the precondition so that women's entry to the trade can be not only facilitated, but also recognised in terms of economic and social security visibility.

## The social sustainability of fishing systems

This analysis of social sustainability on a fishing system basis can be reduced to defining the role played by the human element in carrying out fishing-related activities. From this point of view, it is useful to distinguish fishing systems characterised by a *labour intensive* work organisation, from others in which the technological aspect is a predominant factor. In order to do this, the indicator given by the ratio of the work factor (number of crew members) to the capital factor (in this study it is invested capital) allows us to assess work intensity compared to the level of capitalisation of fishing businesses. In this context, it is possible to assume that fishing systems, with a lower level of labour intensiveness compared to the national average, rely on technology (*capital intensive*) to reach the production *target*. Vice versa, systems with a higher than average indicator include *labour intensive* activities which are more important from a social point of view.

Table 13.9 shows that, having considered a *reference point*, which corresponds to the average national indicator of 1.12 crew member units for each 100,000 Euros of invested capital, the following fishing systems belong to the labour intensive category:

- seine fishing;
- passive polyvalent fishing (tonnage > 10 GT);
- small-scale fishing (tonnage < 10 GT).

**Table 13.9 - Incidence of work factor in firms according to fishing system: ratio of average crew members per vessel (no. of crew members) to invested capital per vessel (thousands of Euros) - 2010.**

Fishing system	Crew members (No.)	Capital (Euros x 1,000)	Work factor incidence indicator
Bottom trawl	3	505.26	0.59
Midwater trawl	5	685.40	0.73
Purse seine	6	536.97	1.12
Hydraulic dredges	2	189.45	1.06
Small-scale fishery	2	52.67	3.80
Passive polyvalents fishery	3	220.60	1.36
Longline	4	362.56	1.10
Total fleet	2	179.27	1.12

Source: MiPAAF - Irepa.

The social aspect of this distinction assumes importance if one bears in mind the skills that fishermen have to acquire in order to carry out their trade. Carrying out the metier of small-scale fisheries, the system that is characterised by the highest level of labour intensiveness, implies professional skills that only more expert fishermen can transfer to new generations. At the same time, to encourage young people to enter the trade and become fishermen implies that it should be possible to guarantee the social wellbeing prospects for families. In this context, the prospects of social development cannot but include the need to ensure professional training for young fishermen, favouring an early involvement in carrying out labour intensive fishing trade tasks. One

more reason to reinforce this view is the risk that over the medium term, even labour intensive systems come into the area of economic financial strain. This possibility should be completely avoided, since it would risk hindering the remaining opportunities to endow fishermen with social prestige, thereby reducing the ability of fisheries to attract a younger work force.

To conclude, the social sustainability of national fisheries is characterised by the following phenomena:

- stable labour cost *trend* per sector workforce unit;
- “impoverishing effect” compared to the reference social context (agriculture sector);
- the improvement in fishermen’s professional skills has created no corresponding advantage in their ability to improve their level of social wellbeing;
- it is difficult to ensure a suitable female access rate that can redress the accumulated lag in the ability to involve women;
- there is a need to ensure professional training for young fishermen who should be involved initially in carrying out labour intensive fishing metiers.

The current levels of social sustainability are decidedly unsatisfactory and should be improved in a framework of policy specifications, that are part of the same context as the ones adopted in pursuing the objectives of environmental and economic sustainability. Up to now, the evidence shows that the improvements, albeit modest ones, of the latter objectives are following the opposite path to the one required for social sustainability.

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