

**EUROPEAN COMMISSION  
DGXIV (FISHERIES)**

**REGIONAL SOCIO-ECONOMIC STUDIES ON  
EMPLOYMENT AND THE LEVEL OF  
DEPENDENCY ON FISHING**

**GREECE (Lot 11)**

**FINAL REPORT  
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*BY*

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## ACRONYMS

AB	Agricultural Bank of Greece
DOF	Directorate of Fisheries, Ministry of Agriculture
ETANAL S.A.	The National company for the development of fisheries; the AB is main shareholder.
FIFG	Financial Instrument for Fisheries Guidance
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GFP	Gross Fisheries Product
GRT	Gross Registered Tonnage
ICCAT	International Council for the Conservation of Atlantic Tuna
kW	Kilo Watts
LQ	Location Quotient
MOA	Ministry of Agriculture
MOMM	Ministry of Merchant Marine
NSS	National Statistical Service
NUTS 0	Nomenclature Units Statistics Territorial, National level (Greece)
NUTS 1	Regions (4 in Greece)
NUTS 2	Departments (13 in Greece)
NUTS 3	Counties (54 Nomos)
NUTS 4	Districts (124 Eparchia)

# 1 INTRODUCTION

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This report is presented by MacAlister Elliott and Partners in association with Harvest Commodities Limited (Athens, Greece) and the Centre for Agricultural Strategy, University of Reading (UK). The objectives of this study (Lot 11) for the European Commission DGXIV (Fisheries) are as follows:

- Quantify and describe the socio-economic importance of the fishing industry in Greece
- Determine the level of dependency of these areas on fishing in terms of value-added, employment and quotas
- Compare the development of the industry since 1991
- Examine the extent to which the EU socio-economic measure have been implemented and have affected the industry

The study results will be used by the Commission to prepare future structural assistance programmes and assist in targeting supporting measures at the areas most dependent on the fishing industry.



**Figure 1** Map of Greek NUTS 3 areas (Nomos)

NUTS3 Code, Name	NUTS3 Code, Name	NUTS3 Code, Name
GR111 Evros	GR142 Larisa	GR244 Phthiotida
GR112 Xanthi	GR143 Magnisia	GR245 Phokida
GR113 Rodopi	GR144 Trikala	GR251 Argolida
GR114 Drama	GR211 Arta	GR252 Arkadia
GR115 Kavala	GR212 Thesprotia	GR253 Korinthia
GR121 Imathia	GR213 Ioannina	GR254 Lakonia
GR122 Thessaloniki	GR214 Preveza	GR255 Messinia
GR123 Kilkis	GR221 Zakynthos	GR3 Attica
GR124 Pella	GR222 Corfu	GR411 Lesvos
GR125 Pieria	GR223 Cephalonia	GR412 Samos
GR126 Serres	GR224 Lefkada	GR413 Chios
GR127 Chalkidiki	GR231 Aitolokarnania	GR421 Dodecanese
GR131 Grevena	GR232 Achaia	GR422 Cyclades
GR132 Kastoria	GR233 Ileia	GR431 Irakleio
GR133 Kozani	GR241 Boiotia	GR432 Lasithi
GR134 Florina	GR242 Euboiia	GR433 Rethymnon
GR141 Karditsa	GR243 Evrytania	GR434 Chania

## 2 EXECUTIVE SUMMARY

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### 2.1 METHODOLOGY

Data relating to the fishing fleet, processing, aquaculture and employment was collected from the MOA, AB, DOF and Federation of Greek Mariculture Producers. National employment data, population statistics and National Input Output tables were available from the DOF and NSS. The full set of data tables describing the fishing sector is shown in Appendix 1.

Primary and secondary data collection was undertaken in the case study areas of Euboea and Kavala. Employment multipliers were calculated for each case study area using the Generation of Regional Input-output Tables (GRIT) technique. Economic indicators of dependency on the fishing industry were calculated in the form of dependency ratios of gross value-added, employment and dependency on landings of species subject to quota and are displayed in full in Appendix 3.

The development of the industry was also evaluated and discussed by comparing current data sets with those presented in the previous 'Regional, Socio-economic Study in the Fisheries sector' (Greece)<sup>1</sup> and using time-series data where available.

Where possible, data and statistics were collected for the study reference year of 1997 although some data were only available for 1996.

### 2.2 BRIEF ANALYSIS OF FISHING AND RELATED ACTIVITIES

#### 2.2.1 Capture fisheries

According to the MOA register of vessels 20,491 fishing vessels were registered in Greece in 1996 with a total of 655,891 kW of power and 110,904 GRT.

The NUTS 3 regions of Euboea, Cyclades, Lesvos, Dodecanese, Magnisia and Thessaloniki all have over 1,000 registered vessels respectively. Attica has the greatest number of registered vessels (2,300 vessels) with an average power of 49.2 kW per vessel and the largest tonnage of 11.7 GRT per vessel. This reflects the fact that the port of Piraeus in Attica is home to an overseas fishing fleet.

Most of the national coastal fleet comprises vessels less than 10m in length (83% of total), operating within a few miles of shore. The Mediterranean fishing fleet, characterised by medium sized trawlers, ceased operations in 1994 due to difficulty in gaining access to fishing areas of other countries. Greece's Atlantic fishing fleet is characterised by large industrial freezer trawlers and purse seiners targeting fish and shrimp in the central Atlantic Ocean and west coast of Africa. The Greek fishing fleet is relatively old with the majority of vessels being between 25 and 30 years old (34%).

The Agricultural Bank maintains records of production data for each NUTS 3 region, broken down by demersal and pelagic categories. However, production data for the large number of small (<10m) inshore fishing vessels are difficult to quantify since their landings are usually sold directly to hotel and restaurant owners or to individuals for home consumption and therefore do not pass through the main ETANAL markets. Available production data for 1997 are summarised in the following table:

#### Marine production from capture fishing (1997)

Source: AB of Greece

Fishing area	Volume (tonnes)	Value (Drs'000)	Proportion of total value (%)
National waters	113,806	129,698,719	93
Overseas waters	10,580	9,847,198	7
Mediterranean waters	0	0	0
<b>Grand Total</b>	<b>124,386</b>	<b>139,545,917</b>	<b>100</b>

Main fishing areas include the Gulfs of Thermaikos and Chalkidiki, accounting for around 32% of

<sup>1</sup> Commission of the European Communities. Directorate General for Fisheries (DG XIV). 'Regional, Socio-Economic Study in the Fisheries sector, Greece' (1992)

total production followed by the areas of Strymonikos, Kavala, Thassos and the Sea of Thrace; all these being neighbouring areas along the Macedonian and Thracian seaboard.

The main fishing ports are located in Alexandroupoli, Kavala, Thessaloniki, Halkis, Preveza, Piraeus, Patras, Messolonghi, Chios and Kalymnos and are managed by ETANAL. Greece's large domestic ship-building and repair industry is focussed on serving commercial vessels other than fishing vessels.

### 2.2.2 Marine aquaculture

Although the initial research into sea-bass and sea-bream production was conducted in France, Italy and Britain, Greece has now overtaken these countries in their commercial culture production. Bass and bream farming mainly takes place in the Nomoi of Phokida, Euboea, Cephalonia and Chios and in 1996 Drs 9,599 million of fry and Drs 39,455 million of fish was produced. The total of 13,970 tonnes of mussels and oysters was produced in 1996 by 347 businesses. A whole range of businesses has grown up to support the culture industry.

#### Mariculture production by species (1996)

	Volume (fry)	Value (Drs. million)	Businesses (number)
Bass and Bream Hatcheries	99,650	9,599	23
	Volume (tonnes)	Value (Drs. million)	Businesses (number)
Bass and Bream Farms	21,210	39,455	205
Mussels and Oysters	13,970	1,275	347

Source: MOA

### 2.2.3 Freshwater aquaculture

Freshwater aquaculture production focuses on trout, carp and eels. In 1996 production from 145 farms totalled 2,775 tonnes, worth around Drs 2,764 million. This sector is less dynamic than marine aquaculture, consists of small producers and has less domestic and export market potential.

### 2.2.4 Inland fisheries

Besides the marine fisheries extensive inland capture fisheries exist, in the form of 70 lagoons, mainly in the Messolonghi region of Central Greece. Target species include sea-bream, sea-bass, eel, mullet, white bream and sole. Most lagoons are managed by co-operatives with the remainder operated by private individuals, private companies or local authorities. In 1996 lagoon production totalled 1,682 tonnes, worth some Drs.1,911 million.

### 2.2.5 Processing

Fish processing is carried out in 22 of the 54 NUTS3 regions. The majority of processing takes place in Thessaloniki, Attica and Kavala (38%, 19% and 13% of total volume, respectively) and is of much less importance in other Nomos. In 1997, 29,321 tonnes of mainly salted, smoked and canned fish

Factories in northern Greece (e.g. Thessaloniki and Kavala) specialise in salting, smoking and canning fish, invertebrates (frozen squid, imported and local octopus and cuttlefish) and molluscs. The Attiki region specialises in frozen fish products.

Most processing facilities are old and rely on both local production and imports from abroad. Some processors in central Greece utilise freshwater species such as trout and eels and produce smoked products. A number of new modern packing facilities have been constructed recently to serve the fish culture industry.

## 2.2.6 Employment

Employment in the 'fish sector' (production) in 1997 was 14,419 according to the NSS Annual Survey of the Workforce. However, this survey records occupation as the main source of income and a characteristic of Greek coastal fisheries is that many fishermen and registered vessels do not fish full-time. Many inshore fishermen have other sources of income, such as farming, kiosk retail or in tourism.

Total employment in marine capture fishing (including inshore, offshore and overseas) was recorded as 41,251 persons by the MOA (1997). Capture fishing employment followed the same geographical spread in Greece as fishing vessels due to the way in which employment data is compiled, with the majority of employment in the NUTS 3 regions of Attica (5,969 fishermen), Lesvos (3,062), Cyclades (2,637), Thessaloniki (2,502) and Euboea (2,450).

Tentative figures from the AB indicate employment in capture fishing for 1997 as 35,944 fishermen with a split of approximately 81% working in the inshore fisheries, 17% in the offshore fisheries and 2% overseas. An estimate of FTE fishing employment made using information gathered for the case studies suggests that there may be approximately 20,000 FTE fishermen.

Employment in the processing sector in 1997 was recorded by the MOA as totalling 1,455 full-time and 954 part-time workers of which employment in processing of trout, salmon and eel accounted for 141 full-time and 41 part-time workers, i.e. freshwater aquaculture accounted for 7.6% of total numbers employed in processing. The MOA is currently upgrading its figures and now estimates total employment in the processing sector to be 3,500 workers as opposed to 2,409 people.

The NSS Annual Survey of the Workforce reports that the food processing sector as a whole employed approximately 68% male employees and 32% female in 1997. However, the case studies indicate a much higher percentage of female processing workers (nearly 80% in Kavala) as did the survey of key industry representatives (75% estimated as national average).

In 1997, employment in the mariculture and freshwater aquaculture sectors was recorded as 2,910 and 254 total numbers of employees respectively. The survey of key industry representatives found that approximately 15% of workers in the culture sector were female. There were 2,701 people working in inland capture fishing in 1997.

It is estimated that there are approximately 350 to 400 people employed in all vessel construction and repair in this sector dealing with fishing, other commercial and recreational craft.

## 2.2.7 Ownership

Coastal fishing vessels are always individually or family owned; only in some exceptional cases does one individual own more than one vessel. Trawlers and purse seiners are individually owned, but often through some form of legal entity. Overseas fishing vessels are company-owned, often in groups of more than one vessel. Shares in these companies are mostly family-controlled.

There are generally three types of ownership in the culture sectors: large integrated companies, medium-sized companies, small family-operated companies. Large companies have multiple cage sites and hatchery units as well as diversifying into other sectors of the industry, having expanded their existing sites, establishing new sites and purchasing other independent producers.

## 2.3 EXAMINING THE LEVEL OF FISHERIES DEPENDENCY

### 2.3.1 Ratios

A series of ratios were calculated for NUTS 3 regions to highlight particular dependencies on fishing. Ratio 1 (share of value-added) was approximated using GFP divided by GDP; data on value-added specifically for fisheries is not available in Greece. The areas with the highest ratio values are predominantly islands with relatively small economies highlighting the importance of fishing. For example, Ratio 1a (marine capture fisheries) is 9.05% for Samos, Cyclades 8.91%, Lesvos 6.30% and Lefkada (5.83%). The average for Greece as a whole is 0.90%. Attica has the greatest value of fish

sector production but is ranked as only the 35<sup>th</sup> most important Nomos in terms of Ratio 1a because of its large economy and high value production from other sectors. Ratios 1b and 1c were calculated using gross mariculture and processing product respectively.

Ratio 2 (social employment indicator) examines the level of dependency on marine capture fishing (2a) and processing (2b) employment as a proportion of total employment in each region. Dependency on culture and inland capture fishing is also calculated.

Capture fishing employment dependency is greatest in island regions, particularly Lesvos, Samos, Lefkada, Chios, with the mainland areas of Euboea and Chalkidiki also showing marked dependence. Processing employment dependency is strongest in the northern areas of Kavala, Pella and Xanthi.

This ratio has been calculated for all sub-sectors of industry (marine capture, processing, inland capture, mariculture and freshwater aquaculture) at NUTS 3 level where data is available and national results are displayed in the following table.

### Ratio 2: employment dependency for fish production and processing sub-sectors

	Marine capture	Processing	Inland capture	Mari-culture	FW culture	Sector total
	Ratio 2a	Ratio 2b	Ratio 2c	Ratio 2d	Ratio 2e	Ratio 2f
Employment	41,251	2,409	2,701	2,910	254	49,525
<b>Ratio</b>	<b>1.061%</b>	<b>0.062%</b>	<b>0.070%</b>	<b>0.075%</b>	<b>0.007%</b>	<b>1.274%</b>

Dependency Ratio 3 (share of catch value subject to quota) is calculated using approximated tuna catch value in 1997, although tuna quotas actually came into force in 1998, with the most dependent regions being Chalkidiki, Argolida, Korinthia and Thessaloniki.

### 2.3.2 Case studies

Case studies examining the level of dependency on fishing were carried out for the Nomoi of Kavala (Eparchies Kavala and Nestos) and Euboea (Eparchia Chalkida).

Kavala is more dependent on processing employment than any other Nomos in Greece. Some processors have diversified product type and are sourcing away from locally caught and landed fish to ensure that they remain viable in the event of heavily fished stocks becoming more depleted. The numbers of traditional salt-fish processing companies are declining. As in most areas of Greece, coastal fishing in Kavala plays an important role in providing seasonal employment for a large number of fishermen who supplement their incomes with other types of earning activity. The average age of fishers is increasing as the younger generation are not entering the profession.

Fishing plays a significant role in the economy of Euboea, an island off the east mainland of Greece. Unemployment on Euboea is higher than the national average with most unemployment amongst women and people under 25 years of age. The younger population is moving from rural outlying areas to urban and semi-urban areas, as is the general demographic trend in Greece.

As with the entire coastal fleet in Greece, it is difficult to discern exactly what proportion of registered vessels are economically active, providing a livelihood for fishermen and their dependants, and what proportion of vessels maintain registration but are only fished for pleasure or infrequently, however fishing and processing employment dependencies are above the national average. Night purse seiners employ a predominantly Egyptian crew as do trawlers. Stocks are becoming depleted and there is little effective policing of illegal and intensive forms of fishing carried out usually by trawlers and beach seiners. This constitutes a serious problem in an enclosed area, recognised as an important breeding ground.

Euboea Island has become an important area for the development of mariculture due to the sheltered sites available for fish cage culture in the Evoikos Gulf. Production is mainly of sea bream and sea bass. Women are normally employed in the live feed production units of hatcheries where there is a requirement for careful work under hygienic conditions. A high proportion of cage farm workers are

foreign (e.g. Pakistani and Albanians) and employed in relatively menial tasks. Around 20% of workers are ex-fishermen. Almost all fry feed is imported from other European countries whereas around 60% of cage feed is produced in Greece.

### 2.3.3 Multipliers

Two sets of multipliers (forward and backward) were calculated for the NUTS 3 regions of Kavala and Euboea. Backward multipliers include all employment upstream from the industry in question (in this case fishing) whilst forward multipliers include all employment downstream from the industry in question.

#### Fishing employment multipliers for Kavala and Euboea (NUTS 3 areas)

	Backward Multiplier	Forward Multiplier
Euboea	1.23	1.17
Kavala	1.21	1.20

Source: own calculations

The fishing employment multipliers are shown below and are of an expected magnitude for a small region (i.e. between 1 and 2). What is slightly more unusual is that the backward multipliers are larger than the forward multipliers. It is usually the other way round owing to the labour intensive nature of many of the processing, packing, distributing and retail industries.

In Euboea, this is partly due to the large proportion of fish production (over 36 % of total fish value) coming from the aquaculture industry where the majority is exported before processing. The backward multipliers for both case study regions are similar which is not surprising given that the input cost structure of the fishing industry for both regions is also similar.

The forward multiplier in Kavala is slightly higher than that for Euboea, reflecting the greater predominance of local processing which comprises a total of eight processing plants, including three traditional salt-fish producers, one large fish processing factory, and three fish freezing factories.

## 2.4 EXAMINATION OF THE DEVELOPMENT OF THE INDUSTRY

### 2.4.1 Comparison

The previous 1991 study, divided Greece into five fishing zone areas, labelled A to E. Zone A comprised Nomos with the lowest level of dependence on fishing due to large developed urban centres while Zone E encompassed islands which have the highest dependence on fisheries. Where possible, information was collected for this Study using the same Nomos as were used in the earlier 1991 Study.

### 2.4.2 Development of the economy and industry

The size of the registered Greek fishing fleet fell from 22,253 in 1991 to 20,491 in 1996. The fleet has become smaller and less powerful over time. No zones have experienced increases in vessel numbers, power or tonnage between 1991 and 1996, however Zone E (which includes the Nomoi defined as being most dependent on fisheries by the previous study) has had the least reduction in number of vessels; less than the National average. Numbers of registered trawlers and purse seiners have reduced between 1991 and 1997 by 23% and 21% respectively whilst the categories 'small boats' and 'others' have fallen by less than 2% of 1991 levels.

Vessels fishing in the Atlantic have fallen by 55% overall from 1991 levels to 1997 with the reductions being more marked for shrimp vessels, whilst the number of freezers has remained constant at 5 vessels. Mediterranean vessel numbers peaked in 1990 at 14 registered vessels but numbered zero between 1995 and 1997.

Total production from fisheries and aquaculture has risen between 1990 and 1997. This has been due primarily to the increase in aquaculture (nearly 10-fold between 1990 and 1997 by volume), as production from capture fisheries has reduced over the period. Aquaculture now contributes 30 % of all production by weight and the increase has come mainly from cage culture of seabass and seabream and rope and long line culture of mussels.

The production from inland fisheries gradually decreased from 1988 to 1990 but since then has remained at around 3,500 tonnes.

The number of registered fishermen fell by 4.7% from 43,275 in 1991 to 41,251 in 1997. In areas less dependent on fishing, numbers of fishermen have fallen by 8.6% and by 4.9% in areas most dependent on fishing. Areas least dependent on fishing (Zone A) provide more alternative opportunities for employment than found in Zone E and so as marine catches have fallen and decommissioning progressed a greater number of fishermen are likely to find alternative sources of income in Zone A than are available in Zone E.

Employment in freshwater aquaculture and mariculture has increased significantly between 1990 and 1997. The largest increase has occurred in Zone A, defined (least dependent on marine fisheries). Overall, there has been a 2.6-fold increase in numbers employed in culture activities.

The value-added ratio (Ratio 1) has been compared between the previous 1991 study and current calculations. The importance of fisheries in economic terms has increased in Zones C, D and E and decreased in Zones A and B.

## **2.5 EXAMINATION OF SOCIO-ECONOMIC MEASURES**

### **2.5.1 Actual impact of support measures**

Support measures for the Greek fishery sector were provided under the Operational Programme (OP) for Fisheries (1994-1999). The OP programme from 1994 to the end of 1998 has seen a total investment of almost €13 million with €33 million of funding from FIFG, €20 million from ERDF, €1 million from National funds and the remainder, €109 million, being made by the private sector. Approximately 88% of all OP funds had been committed by April 1999.

The greatest investment was in the aquaculture sub-sector at €12,000 followed by adjustment of fishing effort at €8 million and processing at €6 million. Neither socio-economic measure (early retirement schemes for fishermen or one-off payments for fishermen made redundant through vessel decommissioning) was implemented in Greece.

The PESCO initiative was also available in Greece but suffered from administrative delays and was not implemented until 1997. Delivery of €4 million is expected. National programmes also supported aquaculture and processing.

The impact of the measures was as follows:

- Decommissioning/export: 1,259 vessels were approved for this scheme but 300 withdrew applications as over-subscription meant that the grant offered was reduced by 30%. This resulted in Greece not reaching its MAGP targets for the trawler fleet segment. There was a bias towards decommissioning smaller inshore vessels which may not have exerted great effort in the fishery previously. There has been no follow up to evaluate the impact of the decommissioning on employment.
- Joint ventures: Assistance to 22 joint venture companies was anticipated but only five were assisted at a cost of €5.6 million. The measure was not very popular due to administrative problems and payment delays and did not have a significant impact on employment.
- Construction of new vessels: The Greek fleet is ageing and this measure was of great interest and over-subscribed. After delays concerning the trawler segment not meeting MAGP targets, construction of 334 new vessels were approved for grants. The measure will have created new jobs but there are no statistics to determine if these are new people entering the industry or

transfers from decommissioned vessels.

- **Modernisation of vessels:** Approvals were made for 649 vessels, 10% above that foreseen by number and 39% more by cost. This measure has probably sustained employment and improved working conditions and safety on board.
- **Aquaculture:** Assistance has been given almost exclusively to marine aquaculture with grants for seabass and seabream farms being higher than for all other species put together. Production expansion has risen rapidly throughout the 1990's and will have created a significant number of jobs in production as well as up and downstream activities.
- **Protected marine areas:** Only one project was implemented with no employment implications
- **Equipment for fishing ports:** Little interest with only €0.4 million committed
- **Processing and trade:** This measure was successfully implemented with the full uptake of funds being used for expansion and modernisation. The employment impact is not clear though aquaculture volume alone will have provided new jobs.
- **Promotional campaigns and market research:** This has been taken up as a concerted action by the aquaculture sector.
- **Infrastructure and research:** This was funded by ERDF and subject to various delays
- **PESCA:** Procedural delays over implementation arrangements meant that by April 1999 only 13% of the total €4 million budget had been spent. However, final approvals have been made amounting to 57% of the budget while initial approvals represent 31%. A number of new jobs are expected from the programme.

### 2.5.2 Perceived impact and employment outlook

Industry and programme administrators' perceptions of the measures and employment outlook were established through a survey questionnaire and are summarised in the following table:

#### Extent of perceived impact of EU Structural Funds

Impact	FIFG	PESCA	ESF	ERDF
Very significant	XXXX	XX	XX	X
Moderate	X	XX		X
Limited		XX	XXX	XX
No Impact				X
Negative Impact				

More specifically, perceptions by sub-sector are as follows:

- **Capture fishing:**

Decommissioning: The large take up is considered by many to be an indicator of success but effort could be reduced more efficiently by targeting larger vessels and those subject to quota. Inshore vessels being removed are not perceived to have reduced effort greatly.

Joint Ventures: Perceived as too difficult to implement because of procedures in third countries. Could be better aimed at third countries with common Mediterranean interests.

Fleet renewal: This was considered restrictive as there was no possibility to increase size or power of vessels for individuals.

Socio-economic measures: Both measures were viewed as being potentially very significant for Greece, with some reservations concerning implementation amongst inshore fishermen.

Employment potential in capture fishing was expected to show minimal change.

- Aquaculture: Assistance would be valuable in moving bass and bream sites further offshore to reduce user conflict in bays and islands. Care is needed so that future grants do not create further market imbalance. Grant support for the commercialisation of new species and establishment of mussel depuration facilities would be beneficial.

Employment prospects in aquaculture were viewed as being limited due to considerable potential for expansion in culturing existing species and substantially for new species.

- Processing and marketing: Processed volumes are low compared to other EU states. There is considerable scope for upgrading facilities. The job prospects in processing wild fish are thought to be limited and may even decline if efficiency increases as a result of funding assistance. However increased supplies from aquaculture will offset this effect. Employment is perceived to be able to increase as domestic retail and export markets demand further value added products.

Implementation of the support measures under the OP and PESCA was frustrated by lack of human resources and equipment to deal with the workload the programmes entailed. An alteration of the chain of command of the DOF in each prefecture was also an impediment and a review of staffing levels in both the Ministry and Directorates is recommended in advance of the new OP for 2000 to 2006. Procedures for fishermen were viewed as cumbersome and may have limited applications to those with the administrative infrastructure to take on this burden.

### **2.5.3 Populations at risk**

The whole of Greece has again qualified for Objective 1 status in the next round of EU structural funds (2000-06). Greece has a growing population and low economic growth rate. The young are tending to migrate towards urban and semi-urban areas where job and education opportunities are greater. Women have low employment rates in comparison to men.

Target populations in most need of assistance have been established by reference to an array of dependency indicators as detailed and calculated in this study. The island of Chios is ranked as the most dependent in terms of Ratio 1a (gross fisheries value-added), Ratio 2a (employment in capture fishing), proportion of vessels over 35 years of age, change in power and tonnage between 1991 and 1996 and change in numbers of fishermen between 1991 and 1997.

A further 12 Nomos are ranked as having equal dependence: those on the mainland at risk (Imathia, Chalkidiki, Serres, Rodopi and Evros, with the exception Thesprotia) are located in the north of Greece and are home to some of the countries largest fishing fleets and ports. Euboia is an island, but is connected to the mainland and therefore does not suffer the isolation of Chios, Lesvos and the Dodecanese, for example. The other populations at risk are identified as the Ionian islands of Zakynthos and Lefkada and finally Chania, the western section of the island of Crete. It is arguable that social dependency in terms of numbers of family members supported by fishing activities, and a lack of alternative employment opportunities, are greater in the islands than on the mainland.