GREEK AQUACULTURE

ECONOMICAL & SOCIAL IMPACT

Executive summary

ambio

INTRODUCTION

The **aquaculture sector** is one of the most dynamic and rapidly **developing branches** of Greece's primary production.

The aim of this presentation is to **highlight the economic and social footprint** of Greek aquaculture, based on the use of indicators that capture its contribution to GDP and employment.

At the same time, data are presented at a regional level, demonstrating **the importance of spatial planning** (ESXADA) for the development of the sector and its impact at both national and regional levels.

GREEK AQUACULTURE

Main producer in the EU
sea bream and sea bass

Comparative advantage of Greece
due to coastline, island geography, marine, environment and climate

Competitive and export-oriented sector with export exceeding **= 600,6 mil. €** (HAPO, 2023)

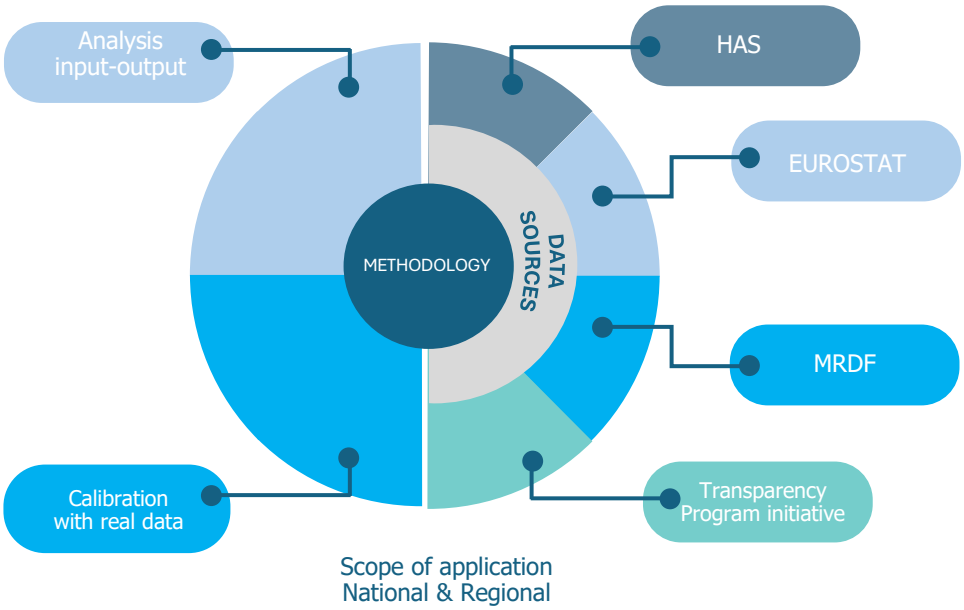
- Regional development
- Employment
- Social cohesion

Food safety & sustainable management

CONTRIBUTION OF AQUACULTURE TO THE ECONOMY & SOCIETY

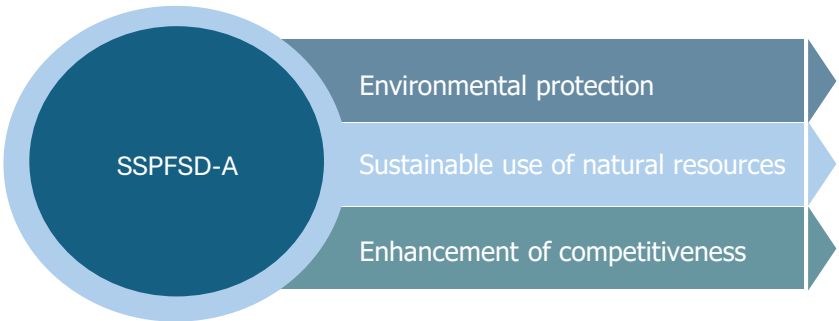
Methodological Approach

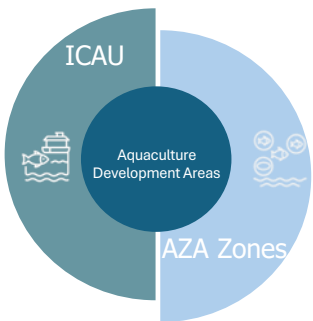
For the analysis of the socioeconomic impact of Greek aquaculture, **the AMBIO impact model** was utilized, which calculates its contribution to the economy and employment, as well as the **Special Spatial Planning Framework and Sustainable Development for Aquaculture (SSPFSD-A)**, which incorporates the spatial dimension, with reference year 2022.



Special Spatial Planning Framework and Sustainable Development for Aquaculture

Through SSPFSD-A, **the spatial dimension** of the sector is highlighted, **linking the socioeconomic impact to how it is reflected in space.**

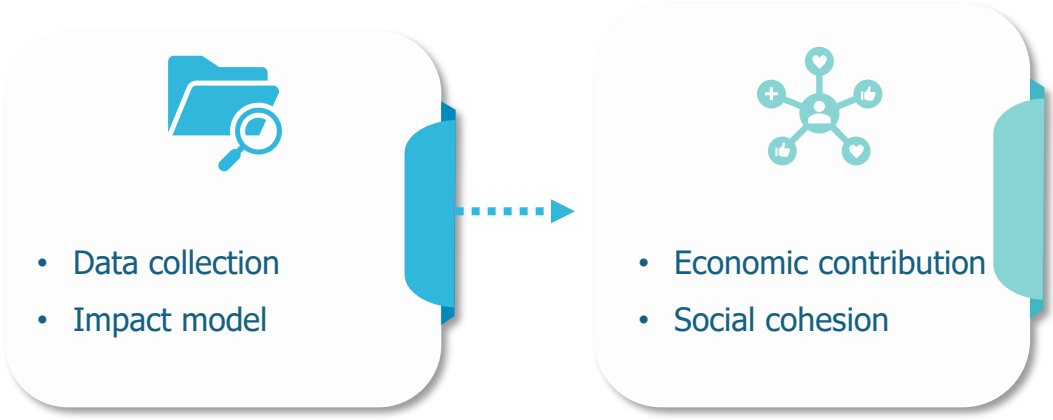




*ICAU=Informal Cluster of Aquaculture Units
AZA Zones=Aquaculture Zone Areas

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

Methodological Approach – Impact Model



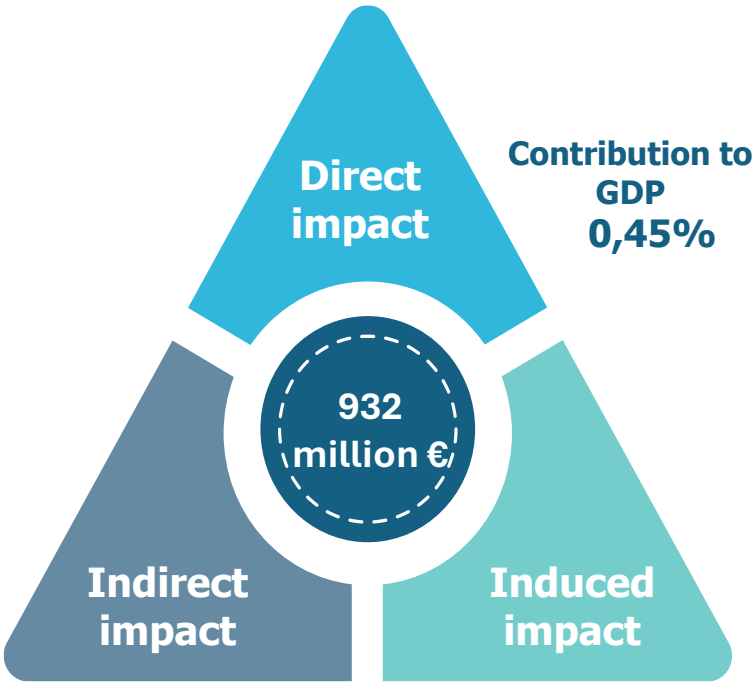
The analysis that follows is based on data from reliable and certified sources, using both private sector data from aquaculture enterprises and data used for the development and calibration of the economic and social impact model.

Within this framework, data were collected on the number of production units as well as the total number of aquaculture facilities operating in the country. The analysis covers the entire country, while the data are examined at both regional and prefectural levels. The analysis was based on the following pillars:

- the **creation of strong production clusters** through the gathering of units, achieving economies of scale
- the **economies of scale** that arise from this clustering and lead to cost reduction per unit
- the **contribution of aquaculture** to the **local and national economy**, with significant multiplier effects across sectors at local levels
- the role of the sector in **strengthening social cohesion**, through job creation in remote areas and the retention of the local workforce.

CONTRIBUTION OF FISH FARMING TO THE ECONOMY & SOCIETY

ECONOMIC IMPACT



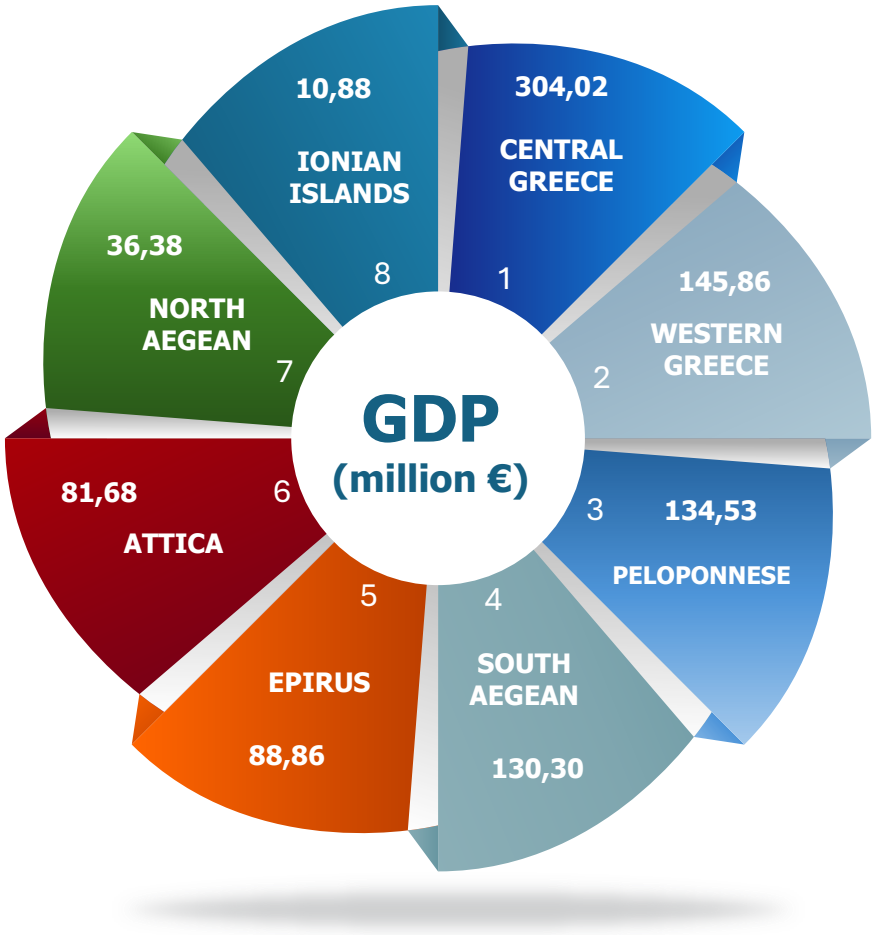
The contribution of fish farming to the Greek economy is significant, as its direct contribution to GDP is estimated at **0,45%**, although several regions show limited or even zero contribution. The total economic impact (direct, indirect, and induced) of the sector reached **932.547.615€** in **2022**, highlighting fish farming as a key pillar of the primary production sector. It is characterized by strong linkages and a high multiplier effect, given that for every 1€ invested in fish farming, 2.5€ is generated across the entire sector as well as in a wide range of related activities.

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

ECONOMIC IMPACT AT REGIONAL LEVEL

The distribution of the contribution of fish farming by region shows significant differentiation, with **Central Greece**, **Western Greece**, the **Peloponnese**, the **South Aegean**, and **Epirus (Sagiada)** accounting for the largest share of activity.

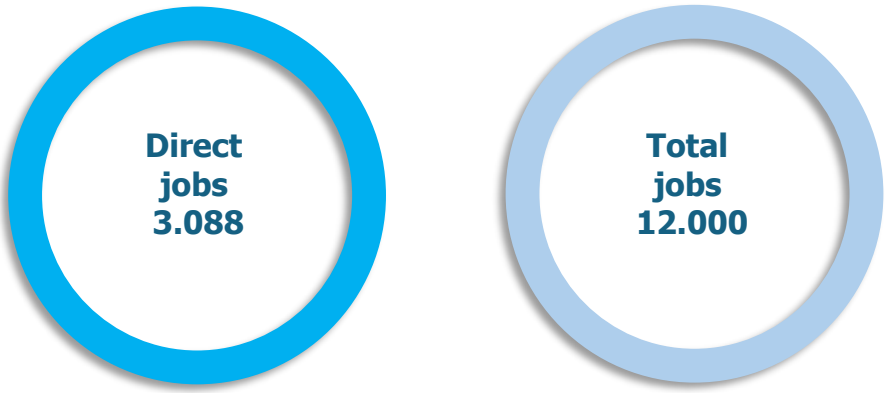
It is also emphasized that many of these regions are characterized as **isolated and disadvantaged.** This fact highlights the **key role of fish farming** in strengthening the local economy, creating and maintaining jobs and retaining the population in remote areas, while contributing to social cohesion and balanced regional development.



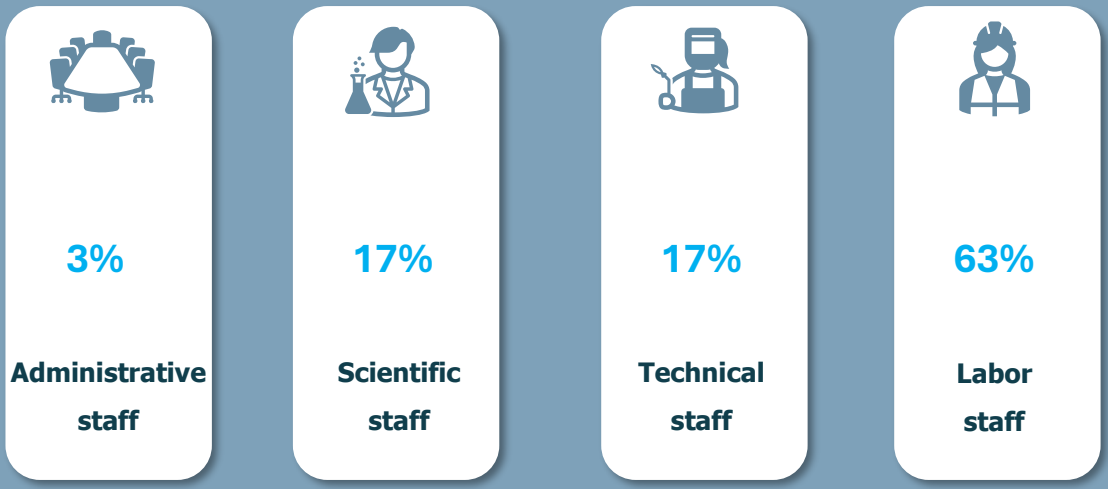
SOCIAL IMPACT & EMPLOYMENT

SOCIAL IMPACT-WORK

Fish farming sector creates **3.088 direct jobs**, which along with **indirect jobs** in the broader value chain, correspond to approximately **12.000** jobs (according to HAPO, 2022) in total employment, substantially supporting employment and social cohesion.

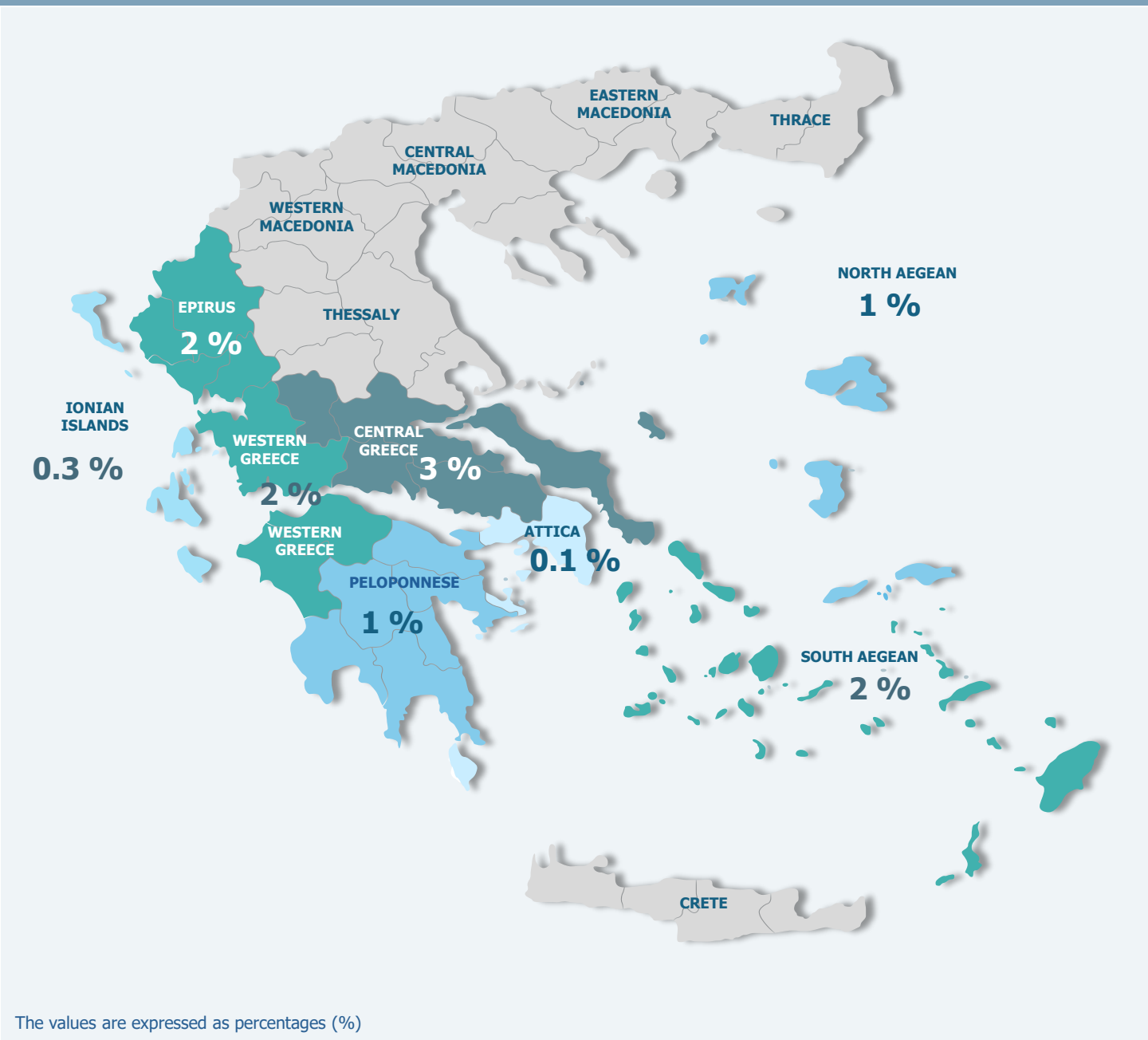


The composition of the workforce in fish farming shows that most jobs require a basic level of education.



SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

CONTRIBUTION OF FISH FARMING TO THE GDP OF EACH REGION (%)



The values are expressed as percentages (%)

THERE IS NO ACTIVITY

The highest **performance** is recorded in regions with a strong presence of the sector, such as **Central Greece**, the **South Aegean**, **Epirus**, and **Western Greece**, highlighting the importance of aquaculture as a **driver of growth** for local economies.

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

EMPLOYMENT (%) IN FISH FARMING SECTOR BY REGION

The values are expressed as percentages (%)

THERE IS NO ACTIVITY

The majority of the **workforce** is concentrated in regions where, as expected, **most production units** and related infrastructure are located, such as **Central Greece and Western Greece.**

KEY SUPPLIERS

Aquaculture constitutes a key driver of activity for a range of sectors, including vessels, diving, fish feed, aquaculture equipment, fish farming, distribution networks, refrigeration, supply chain services for fish distribution, livestock products, monitoring equipment, integrated software–hardware systems, and specialized shipbuilding.

Over **26** companies have been identified as exclusive suppliers **supporting** the Greek aquaculture sector.

- Fish feed
- Equipment companies (nets, cages)
- Consultants
- Logistics
- Veterinary drugs
- General equipment
- Software-Hardware
- Shipbuilding

The network operates in

- Attica
- Central Macedonia
- Western Greece
- Peloponnese
- Epirus
- Central Greece
- Crete
- Aegean & Ionian islands

These companies constitute critical suppliers to fish farming businesses and are also distinguished by their strong export orientation, promoting innovative products and services in international markets. Overall, they generate a turnover of 576.5 million euros and employ 816 people (GEMI 2022 data).

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

ANNUAL REVENUE OF KEY FISH FARMING SUPPLIERS

The figures correspond to millions of euros (€ million)

THERE IS NO ACTION

UNAVAILABLE DATA

The turnover of key suppliers is highest in Central Greece (161€ million) and the Peloponnese (205€ million), while Crete records the lowest (0.1€ million). Although Attica hosts the largest number of suppliers (13), it records a lower turnover (€49 million). This fact is linked to the structure of the sector, as Attica is dominated by mainly small and medium-sized enterprises, in contrast to the larger ones operating in Central Greece and the Peloponnese.

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

EMPLOYEES OF KEY SUPPLIERS IN FISH FARMING INDUSTRY

The values are expressed as number of employees

THERE IS NO ACTION

UNAVAILABLE DATA

The above spatial representation shows the number of employees in the key suppliers of the aquaculture sector by Region. Western Greece presents the highest employment (239 employees), while the South Aegean records the lowest values (21 employees).

SPATIAL DISTRIBUTION & REGIONAL CLUSTERS

SUPPLEMENTARY SUPPLIERS IN FISH FARMING SECTOR

SUPPLEMENTARY SUPPLIERS

Fish farming also supports a broad network of suppliers, who operate mainly in other sectors of the economy. Among these suppliers are included large energy and food companies, financial institutions, telecommunications providers, shipyards, insurance companies, businesses engaged in the sale of vehicles and vessels, as well as a multitude of companies that provide general support services to the production process.

Over **200** companies have been identified as supplementary suppliers **supporting** the Greek aquaculture sector.

The collaborating sectors include

- Energy
- Banks
- Insurance
- Telecommunications
- Feed
- Shipbuilding
- Packaging
- Chemicals
- Information technology
- Logistics
- Waste management

The network operates in

- Attica
- Central Macedonia
- Western Greece
- Peloponnese
- Epirus
- Central Greece
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CONCLUSIONS

ECONOMY

- Contribution of aquaculture to **GDP~0,45%**
- Contribution to agricultural **GVA~4,78%**
- With extroversion, investments and innovation → **1%** of **GDP**

SOCIETY

- 90% permanent, 10% seasonal
- 19% higher education, 15% specialized positions
- 75% men, 25% women
- 94% aged 25–64, 6% young people
- **Support of local economies and employment** in remote areas
- **Strengthening of social cohesion,** upgrading of skills **and retention of scientific workers in the regions**

SPATIAL PLANNING

- Protection of the **environment**
- Enhancement of **competitiveness**
- Limitation of **land-use conflicts**
- Creation of a **favorable framework for investments**
- Ensuring proper **management** and **utilization** of marine resources
- Promotion of **sustainable** local and regional **development**

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