

# Training programme for the workers of the bivalve mollusc aquaculture sector

Work Package: 4  
Author: M.A.R.E. Soc. Coop. Ar.l.  
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**OPTIMA**  
Good Practices in Molluscs Aquaculture

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# MODULE 3



## 1. Short descripti on

This module focuses on the economic and commercial aspects of farmed bivalve molluscs, including market trends, consumer demand, and marketing strategies. It also explores market diversification, sustainability, and digital tools to improve competitiveness.

## 2. Objective s of the module

This module aims to develop knowledge of bivalve mollusc markets, consumer preferences, and marketing strategies. It also focuses on European brands, sustainability certifications, market diversification, innovation, and digital tools to expand business opportunities

## 3. Learning outcomes

This module helps participants develop skills in market analysis and business planning for bivalve aquaculture. It also focuses on certifications, marketing strategies, and product innovation to increase market value.

## 4. Prerequi sites

Not applicable

## 5. Duration

240 minutes (180 face to face online, 60 e-learning)



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## 3. Marketing of bivalve molluscs: market access, certifications, supply chain and traceability, product and process innovations



**Bivalve mollusc marketing** is becoming a **key part of the European Blue Economy**, especially in countries like Italy, France, Spain, Greece, and Ireland.

The sector is largely supported by **micro-enterprises**, which **play an important economic role in coastal communities**.



In today's competitive market, success depends on **product differentiation**, with sustainability, certification, quality, and innovation becoming key factors for increasing value and market positioning.



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## France



Strong example of **premium marketing**, especially in oyster farming, using quality labels such as **PGI** and **Label Rouge**.

Direct sales are widely used to increase producer margins and strengthen local branding.

## Spain



**Europe's leading mussel producer**, with strong production in Galicia. The **PDO "Mejillón de Galicia"** protects product identity and competitiveness, while the canning industry adds value and extends shelf life.



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Italy



Focuses on quality, sustainability, and local excellence, with **growing organic production and strong regional brands** such as the **PDO Cozza di Scardovari**.

Food safety and purification systems are essential for market access.



Greece



Highly **export-oriented**, especially in mussel farming.

The sector is **improving competitiveness through international certifications** such as ISO 22000, IFS, and ASC, aiming to access high-value Northern European markets.



Ireland



Follows a **niche premium strategy**, leveraging clean coastal waters and sustainability initiatives like **Origin Green**.

Irish oysters, especially Irish Rock Oysters, are increasingly successful in international markets, including Asia.



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Across Europe, the sector is accelerating **digital innovation**, using blockchain, smart labels, and traceability systems to **improve transparency and consumer trust**.

New production models such as **Integrated Multi-Trophic Aquaculture (IMTA)** are also gaining importance, **improving sustainability and resource efficiency**.



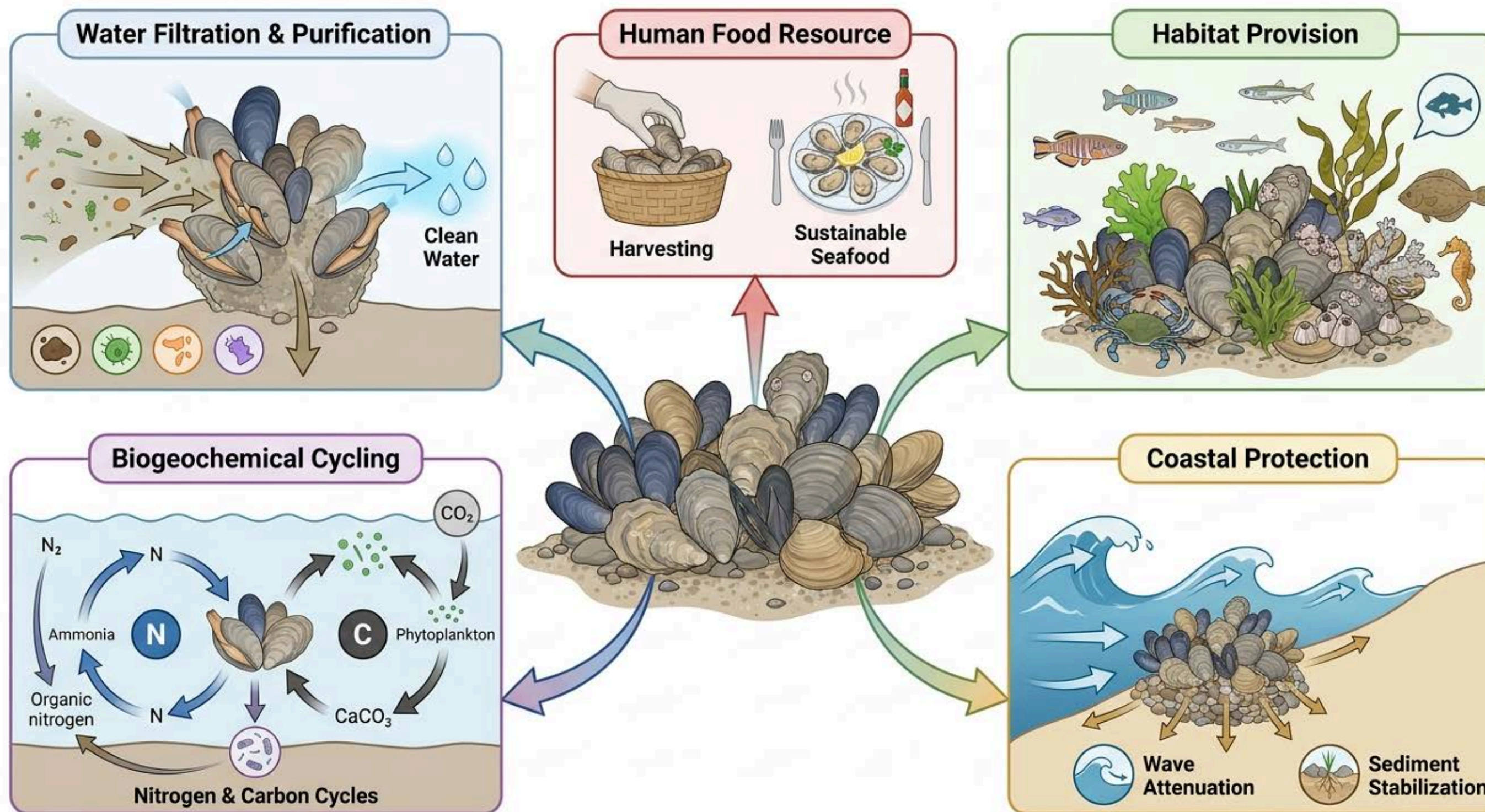
Future marketing strategies will increasingly focus on **ecosystem services**, promoting bivalves not only as sustainable food but also as environmental assets that support biodiversity, water filtration, and carbon sequestration.



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## 3.1 Understanding national and international markets for bivalve molluscs, including consumer trends and behaviour

**European bivalve markets are diverse, with each country adopting different production and marketing strategies based on environmental conditions, consumer demand, and socio-economic traditions.**

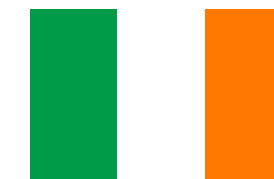
### Strong domestic markets:

Italy, France and Spain



### Export-oriented markets:

Greece and Ireland



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**Italy**



Focuses on **mussel and clam farming for domestic consumption** but faces challenges from climate change, invasive species, and lagoon anoxia.

Quality certifications are increasingly important to maintain competitiveness.

**France**



France is a **leader in premium oyster marketing** through the concept of "merroir", where local environmental conditions determine product quality.

Direct sales and product differentiation increase farmers' profitability.

**Spain**



Spain is **Europe's largest mussel producer**, benefiting from large-scale production and a strong canning industry, which extends shelf life, adds value, and improves resilience to market fluctuations.



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**Greece**



Greece is a **major exporter of mussels**, supplying mainly Italy and Spain. The sector aims to increase value by expanding local processing, purification, and packaging instead of exporting raw products.

**Ireland**



**Targets premium international markets with high-quality oysters** produced in clean coastal waters under strict sustainability and environmental standards.



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The future competitiveness of European aquaculture depends on **ecological sustainability, digitalisation, and innovation**, including II traceability systems, improved distribution channels, and adaptive ecosystem management.



The COVID-19 pandemic accelerated the growth of direct sales and e-commerce, while forcing supply chain reorganisation, particularly in Spain after the decline of the Ho.Re.Ca. sector.

→ **Successful businesses must adapt to local market conditions, consumer preferences, environmental challenges, and national regulations to remain competitive and reduce market risks.**



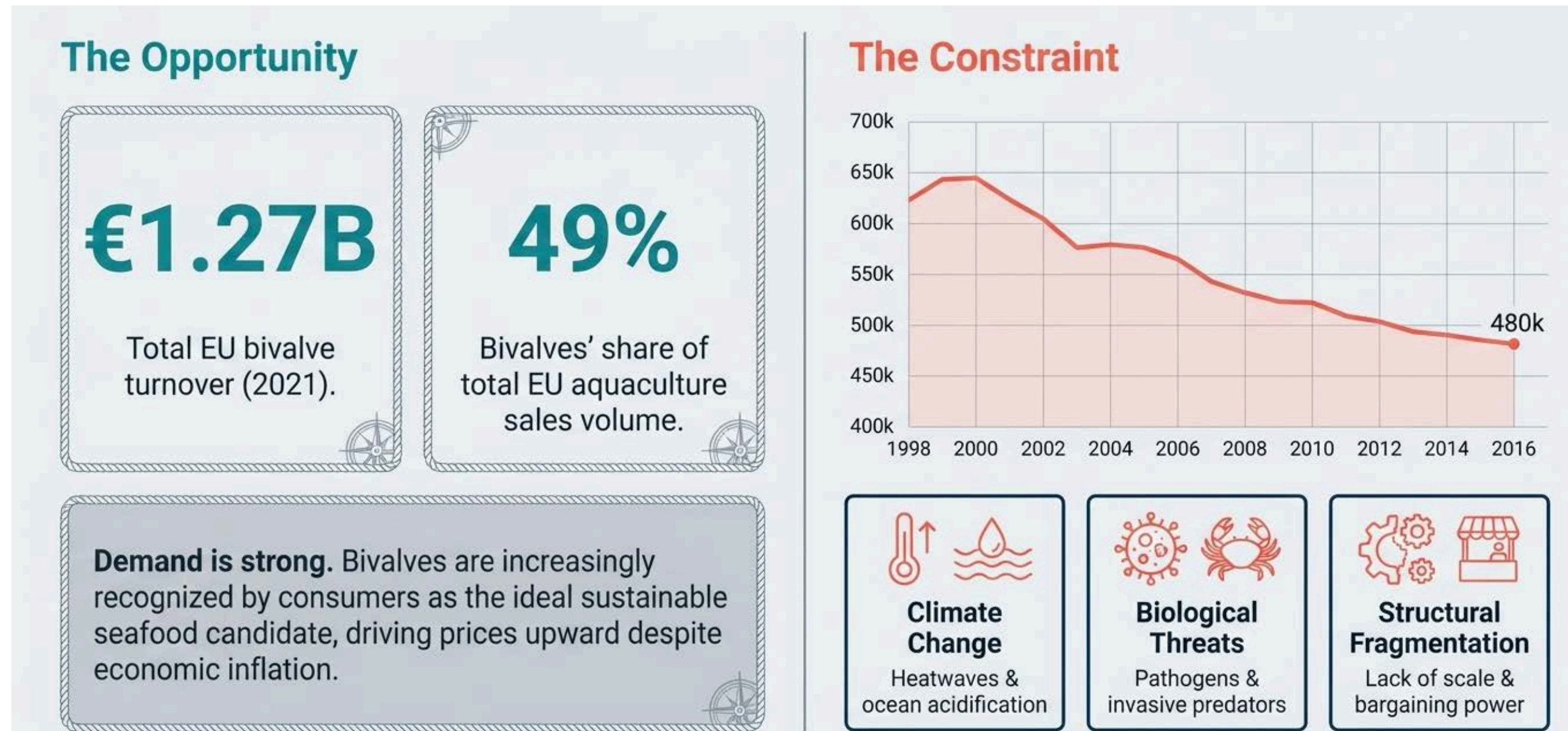
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## 3.1.1 Understanding the structure and dynamics of the national and international markets for bivalve molluscs farmed in the countries that are part of the OPTIMA consortium

The European bivalve market is a key part of the Blue Economy, generating about 30% of the EU aquaculture turnover (€1.27 billion in 2021) and relying mainly on micro and small enterprises.



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## National market structures differ:

- **Italy and Spain** rely on cooperatives and producer organisations;
- **France** focuses on premium quality and direct sales;
- **Ireland** is export-oriented with strong sustainability certifications;
- **Greece** mainly exports mussels but faces organisational and regulatory challenges.

**Quality certifications** (e.g. **PDO, PGI, MSC, Origin Green**) increase product value, strengthen consumer confidence, and improve international competitiveness.



**Environmental and water quality conditions** strongly influence production costs. Water classification (Classes A, B, and C) determines whether purification is required before products can be marketed.



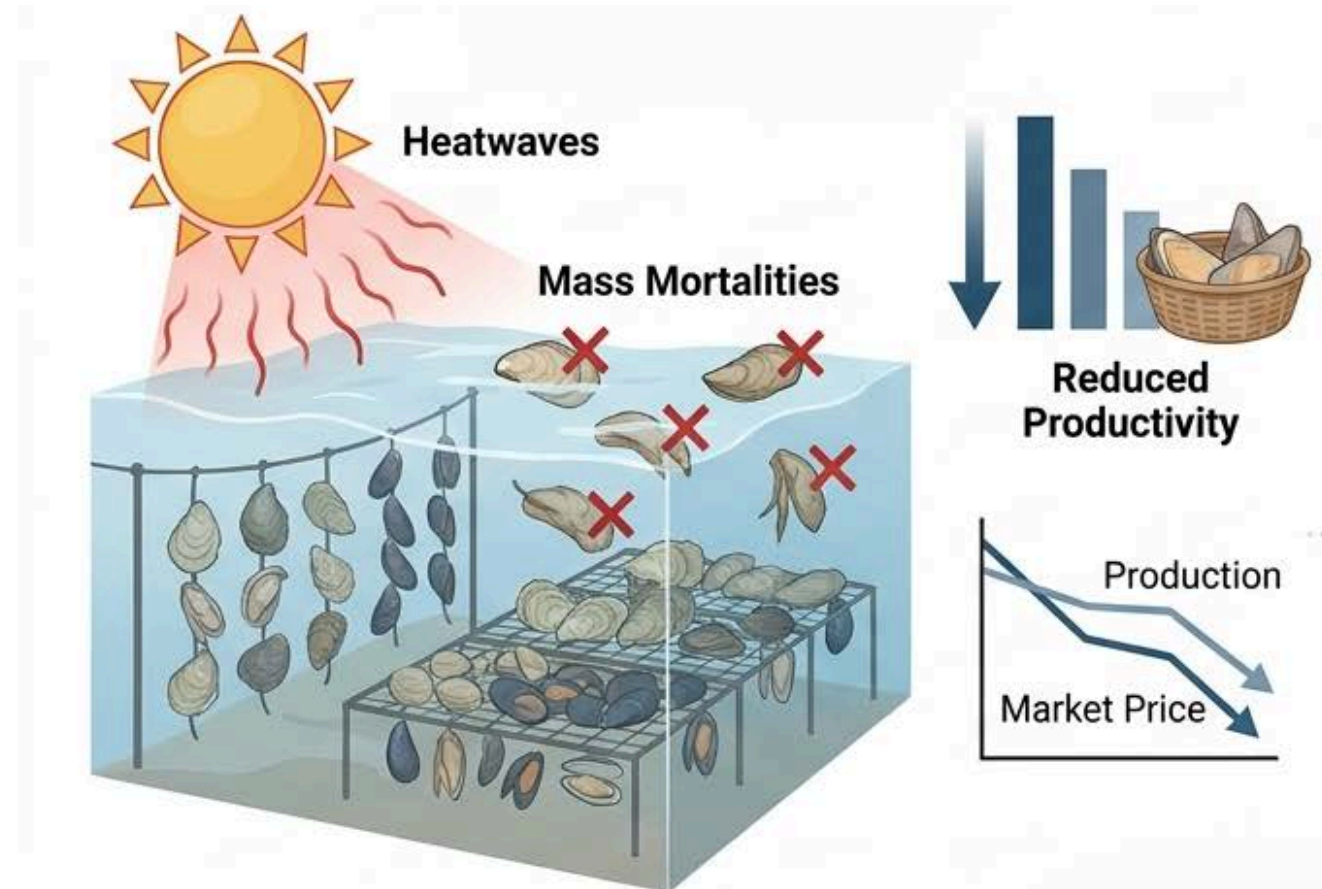
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**Climate change** is creating major challenges, including heatwaves, mass mortality events, and reduced productivity, **affecting both production and market prices.**

The sector also faces **strong competition from low-cost non-EU producers**, making **product differentiation, diversification**, and **sustainability** increasingly important.



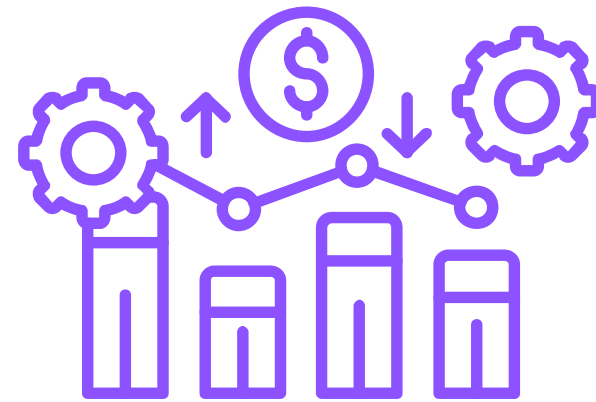
→ **Future competitiveness depends on diversifying production, promoting ecosystem services (such as carbon sequestration and water biofiltration), and increasing product added value.**



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The trade of live bivalves is regulated by strict EU food safety and traceability standards (EC Regulations 852/2004 and 853/2004 → "**Hygiene Package**"), while imports from non-EU countries are monitored through the **TRACES system**.

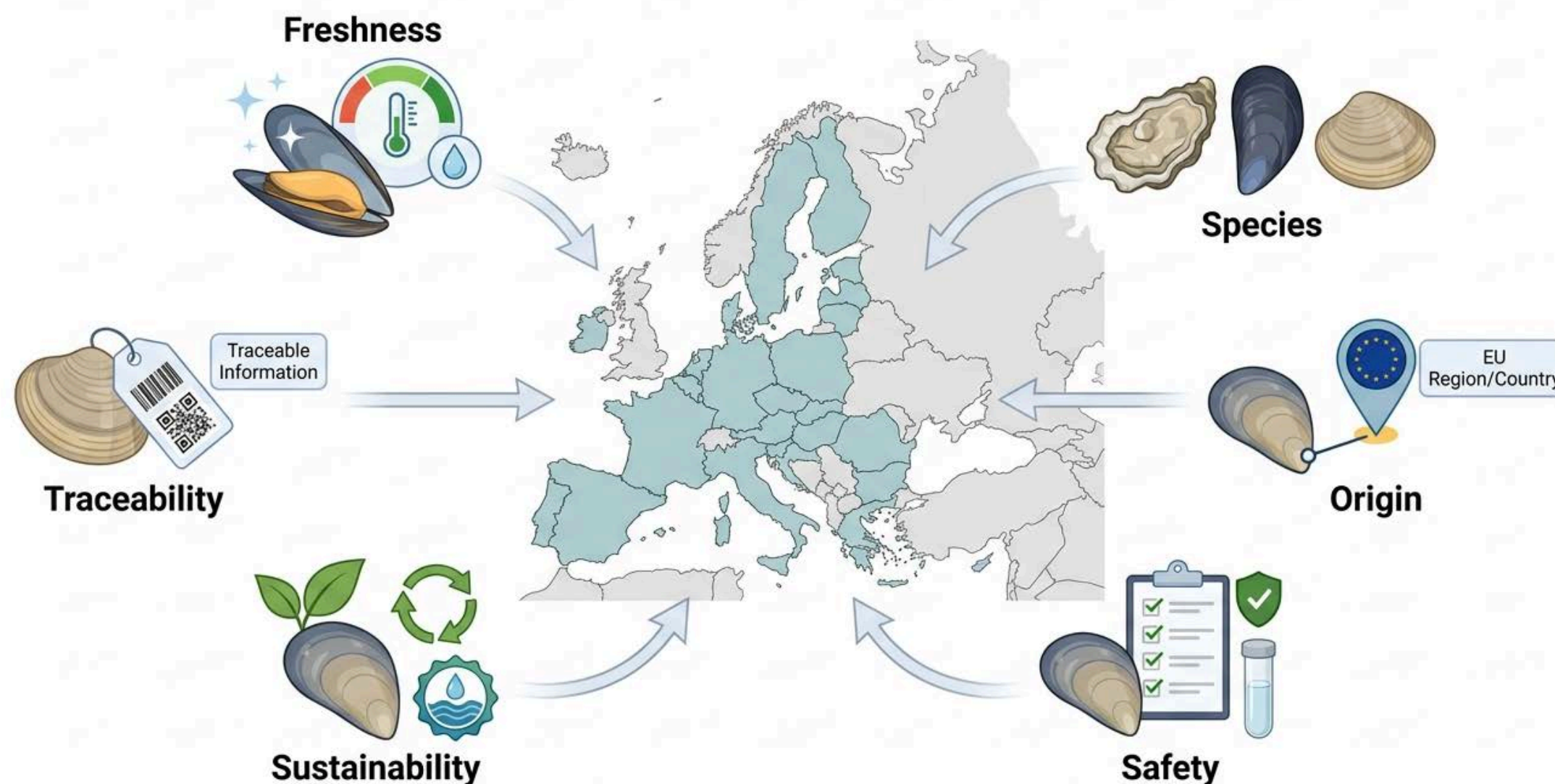
**Understanding market regulations, seasonal demand, and price fluctuations is essential for planning production and reducing economic risks.**



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## 3.1.2 Understanding consumer preferences and behaviour with respect to bivalve products (species, freshness, origin, sustainability).

**Consumer preferences for bivalve molluscs vary across Europe, but are mainly influenced by freshness, species, origin, safety, sustainability, and traceability.**



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**Italy**



Consumers prioritize **food safety**, **freshness**, and **traceability**, while interest in certified and sustainable products is increasing.

**France and Spain**



Purchasing decisions are strongly **influenced by culinary traditions**, with consumers preferring fresh, local products and showing **willingness to pay more for sustainability-certified seafood**.

**Ireland**



Demand is more **influenced by price and convenience**, with a preference for processed or ready-to-cook seafood products.

**Greece**



**Freshness, local origin, and traditional consumption habits** play a **key role** in consumer choices.



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Across all countries, **eco-labels, certifications, and supply chain transparency** are becoming increasingly important, although **better consumer awareness and communication are still needed**.

**Successful marketing strategies should combine product quality, sustainability, and traceability while adapting to the preferences of each national market.**

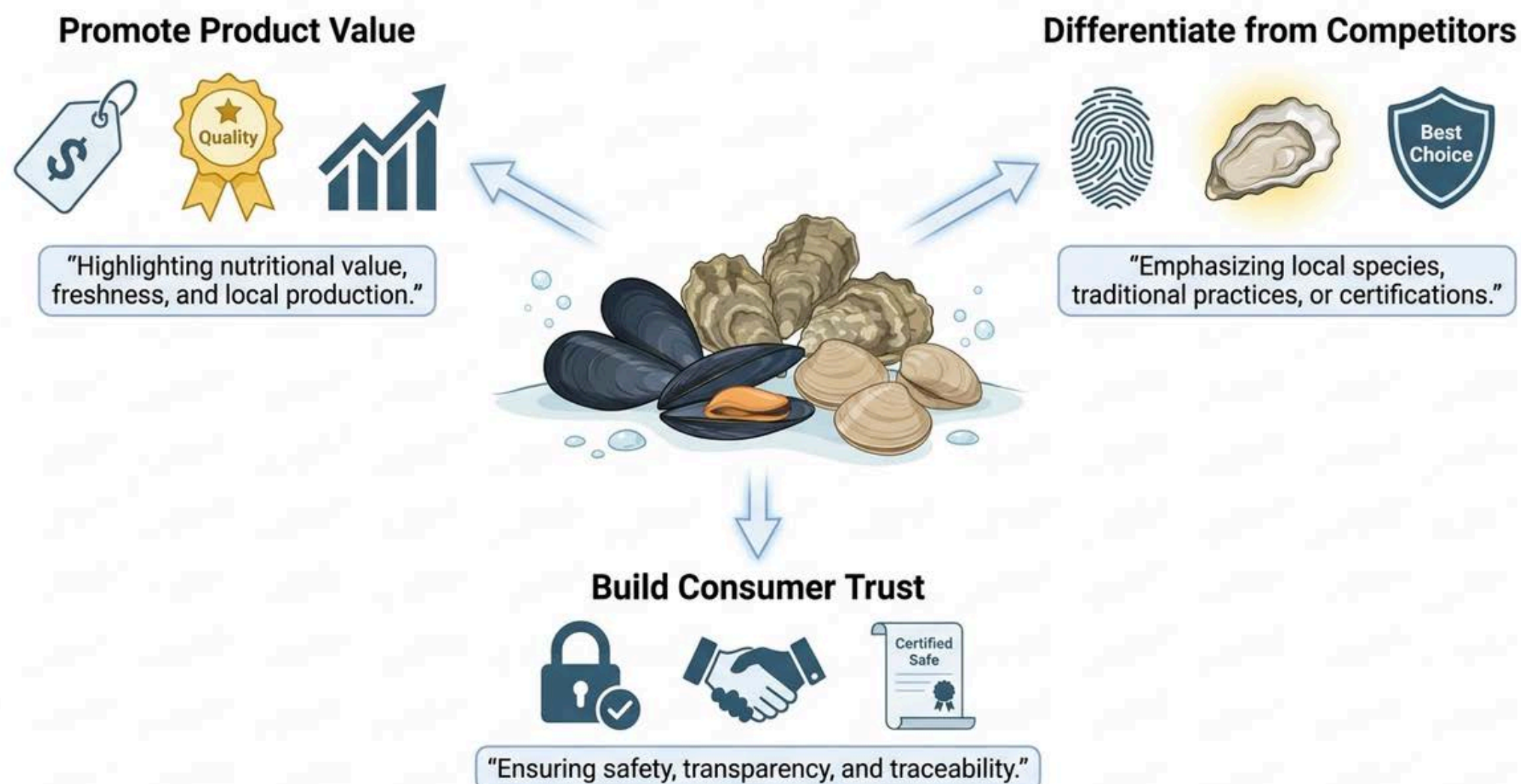


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## 3.1.3 Understanding the role of marketing strategies (branding, traceability, eco-labelling) in promoting bivalve products

Marketing strategies for farmed bivalves focus on three main objectives:

1. **promoting product value;**
2. **differentiating from competitors;**
3. **building consumer trust.**



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**Branding and regional identity are key tools for increasing product value. Countries use local traditions, geographical indications (PDO/PGI), and strong brands to highlight quality and authenticity.**

**France**



promotes premium oysters through **regional storytelling**

**Italy**



increasingly uses **collective brands** and **local identities**

**Spain**



combines **regional branding** with a **strong canning industry**

**Ireland**



markets **premium sustainable products** for export

**Greece**



is modernising its image by **promoting sustainability** and the **Mediterranean diet**



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**Traceability** has become **essential for food safety and consumer confidence**.

Digital technologies such as QR codes and blockchain allow consumers to access detailed information about product origin and production.



**Eco-labels** and **sustainability certifications** are increasingly important, especially in Northern European markets, but they **must be credible** and **clearly communicated** to avoid greenwashing.

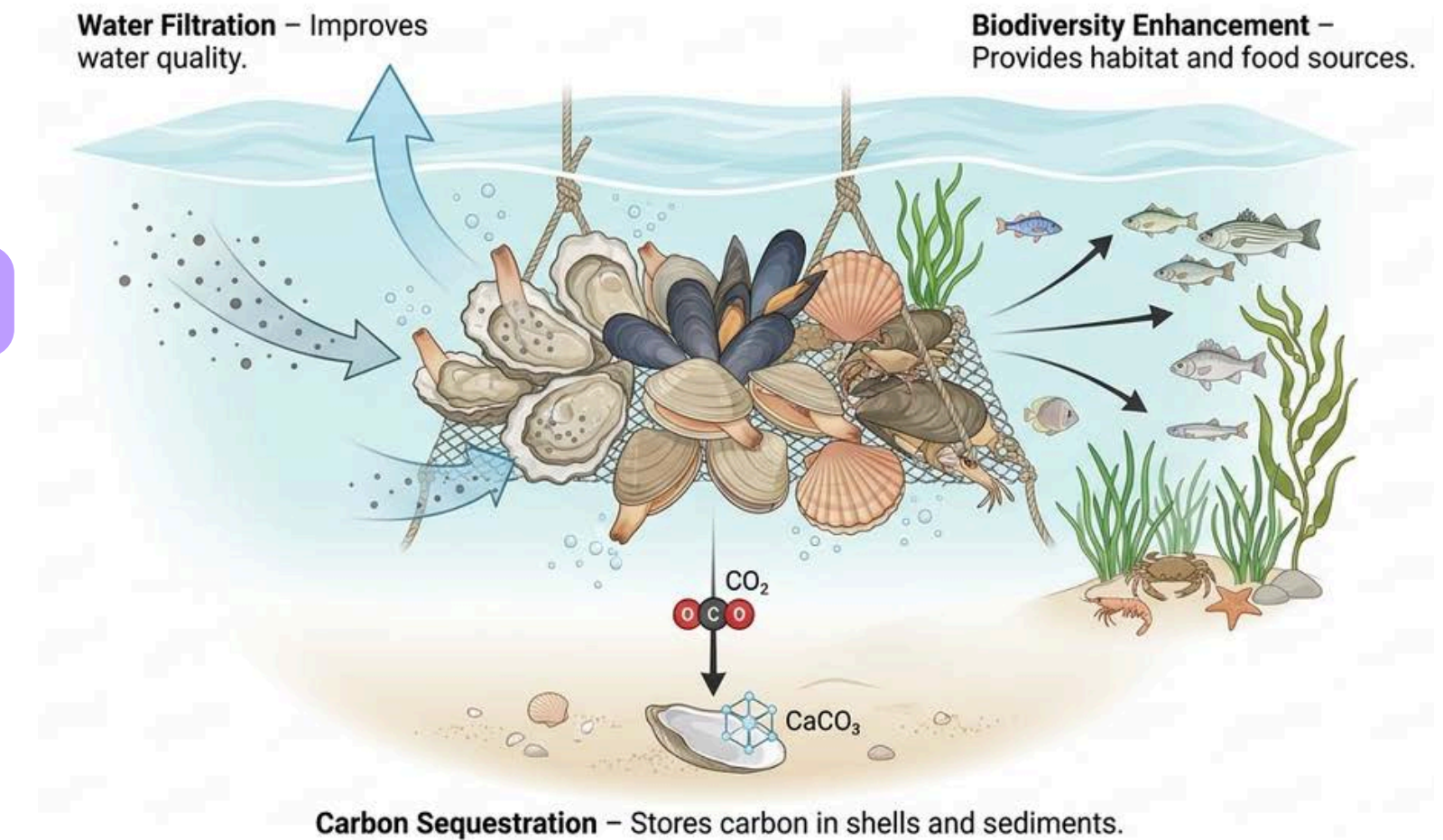


Effective marketing also relies on **social media, consumer education**, and **partnerships with chefs and restaurants**, helping **improve product image, increase consumer awareness, and strengthen competitiveness**.

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## **3.1.4 Economic enhancement models and tools for the remuneration of ecosystem services (Payments for Ecosystem Services – PES).**

**Farmed bivalves provide important ecosystem services, including water filtration, biodiversity enhancement, and carbon sequestration, creating environmental benefits beyond food production.**

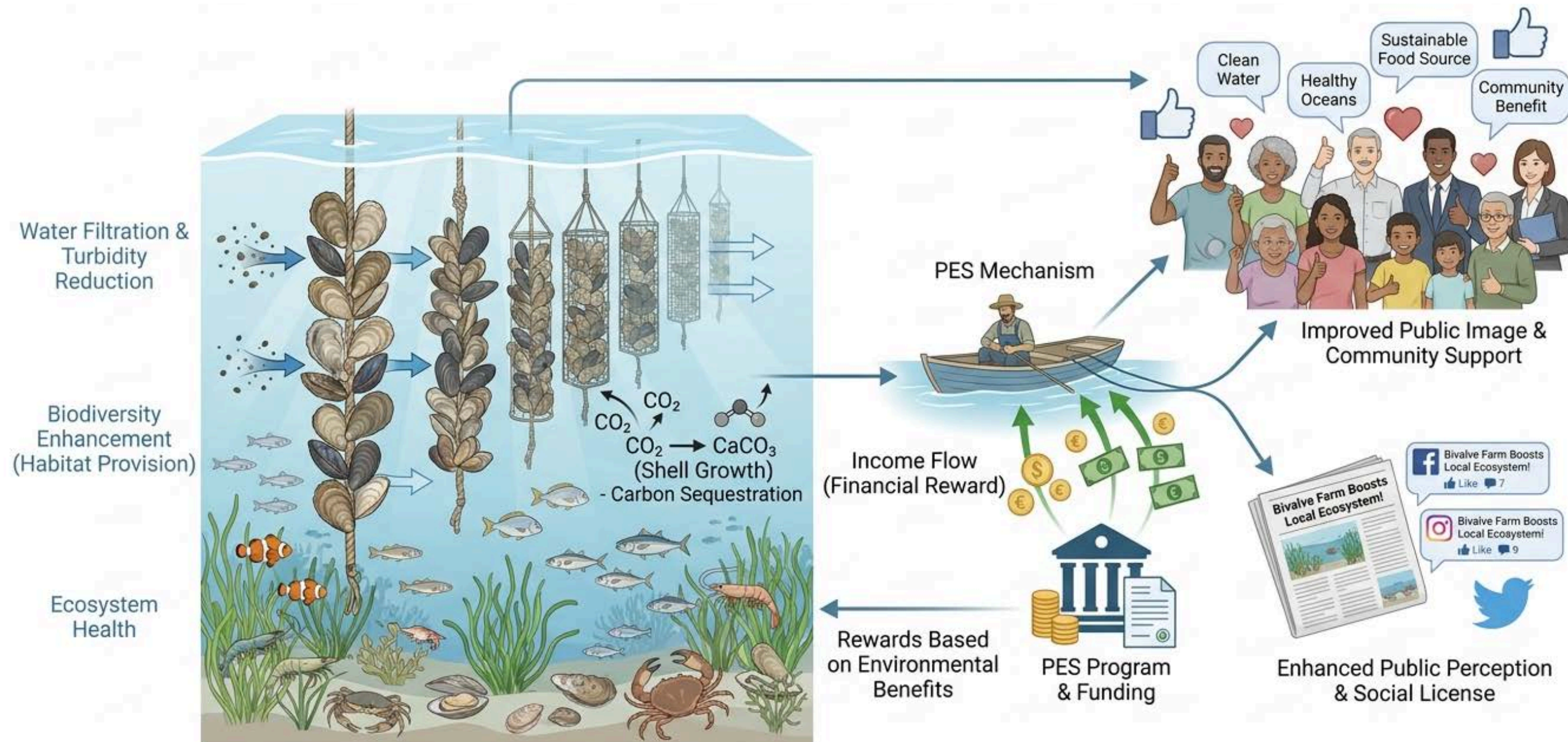


**Recognition of these services is growing, especially in Ireland and France, where certifications, research, and collaborations with public authorities are more developed than in Italy, Spain, and Greece.**



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**Payments for Ecosystem Services (PES)** could provide farmers with **additional income by rewarding the environmental benefits generated by bivalve farming**, while improving the public image of the sector.





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The main challenges are:

- **measuring and valuing ecosystem services**, as their benefits vary with species, environmental conditions, and farming practices. Furthermore carbon sequestration is also still under scientific debate;
- **high monitoring and certification costs**;
- **creating transparent payment systems** and defining who should finance these environmental services
- **lack of standardized carbon or nutrient credit markets**;
- **principle of “additionality”**, which requires proving that ecosystem services are generated specifically because of financial incentives, making PES difficult to apply to existing farms.



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The widespread adoption of PES will depend on **scientific evidence**, **harmonized regulations**, and **cooperation** between researchers, polycymakers, and public and private stakeholders.

Other tools to increase the value of bivalve aquaculture include **environmental certifications**, **voluntary environmental markets**, and **public-private partnerships**, helping improve sustainability and diversify farmers' income.



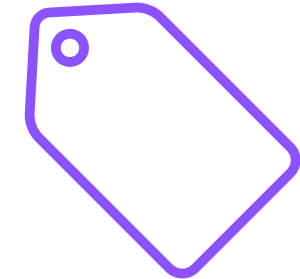
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## 3.2 Knowledge of labelling, traceability and certification requirements for market access

**Labelling, traceability, and certification are essential requirements for accessing the European bivalve mollusc market.**



- **EU regulations require labels** to include information such as **species, origin, production area, production method, and packaging date.**
- **Traceability is mandatory throughout the supply chain**, with digital tools such as blockchain increasingly used to improve transparency.
- **Sustainability and organic certifications help producers** access higher-value market segments and strengthen consumer confidence.

→ **Complying with these requirements improves quality, food safety, sustainability, and market competitiveness.**



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## 3.2.1 Knowing the most common types of quality labels associated with bivalve molluscs in Europe

**Labels and certifications are essential tools for promoting and differentiating bivalve molluscs in European markets, helping communicate quality, origin, and sustainability.**

The main types include:

- **Protected Designations of Origin (PDOs);**
- **Protected Geographical Indications (PGIs);**
- **collective brands;**
- **sustainability certifications.**



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## France



Has a **well-developed system of regional labels**, especially for oysters, which emphasize the **link between the product and its territory** and are highly trusted by French consumers.

## Ireland



**Combines national quality labels with international certifications** such as MSC, supporting its **export-oriented market** and reinforcing product quality and sustainability.

## Italy



Increasingly **adopting PDO, PGI, and organic (BIO) certifications**.  
Organic certification is relatively accessible because bivalve farming generally does not require feed or antibiotics.



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## Spain



Promotes mussels through the **PDO "Mejillón de Galicia"** and **regional collective brands** such as "Clóchina de Valencia", which **guarantee product origin and farming methods**.

## Greece



Currently has fewer quality labels but is **expanding the use of regional brands and international certifications to strengthen exports**.

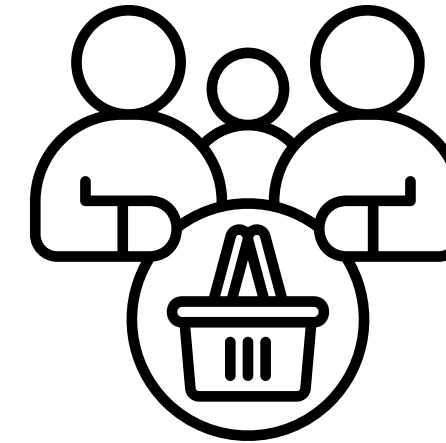


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**Quality and sustainability certifications** strengthen consumer trust, differentiate products, and improve access to European and international markets.



While **France** and **Ireland** have **well-established certification systems**, **other countries are still expanding their use**.

**Understanding these certifications is essential for increasing product value and competitiveness.**



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## **3.2.2 Assessing the impact of sustainability certification schemes (MSC, ASC, organic) on consumer perception and market value**

**Sustainability certifications** (e.g. **MSC**, **ASC**, and **organic labels**) are becoming increasingly important in bivalve markets, **influencing consumer trust, purchasing decisions, and product value.**

**Consumer awareness is highest in France and Ireland, where certified products can access premium markets.**

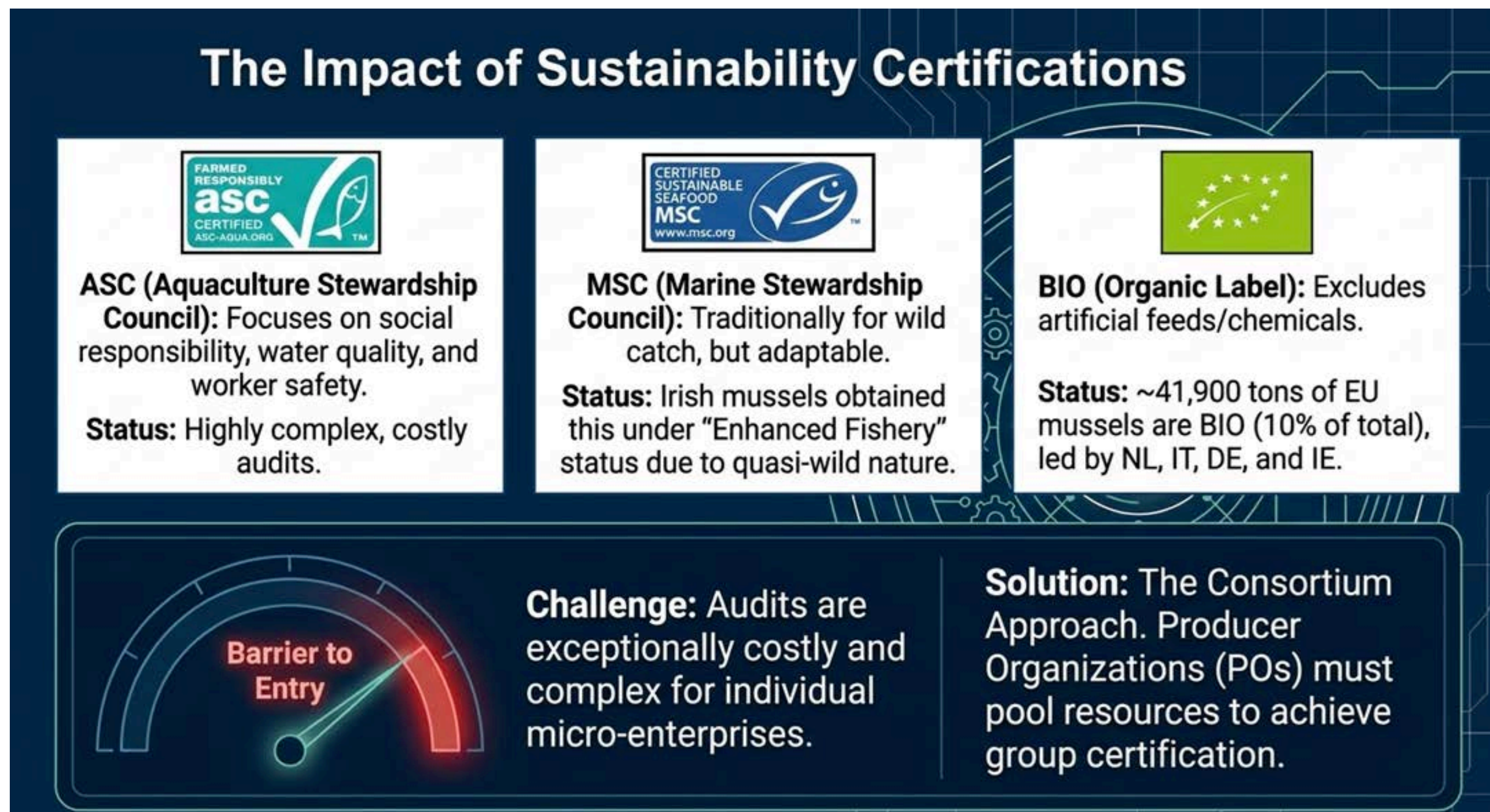
Awareness is growing in Italy and Spain, while Greece still has limited domestic demand.

**Organic certification is particularly suitable for bivalves because they are naturally farmed with low environmental impact**, helping communicate these qualities more effectively to consumers.



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Although **certifications involve additional costs**, they **can increase market opportunities and product value**. Their effectiveness depends on **credibility, transparency**, and **avoiding greenwashing**.



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## 3.3 Ability to identify and pursue new market and product opportunities to increase business resilience

**Market** and **product diversification** is **essential to improve the resilience and competitiveness of the bivalve mollusc sector** in a changing global market.

Companies are reducing their dependence on single products or sales channels by developing **new business strategies and adapting to climate change and changing consumer habits.**

**High-value market segments**, such as organic, eco-certified, and protected products, offer **greater profitability** and attract consumers who are less sensitive to price changes.

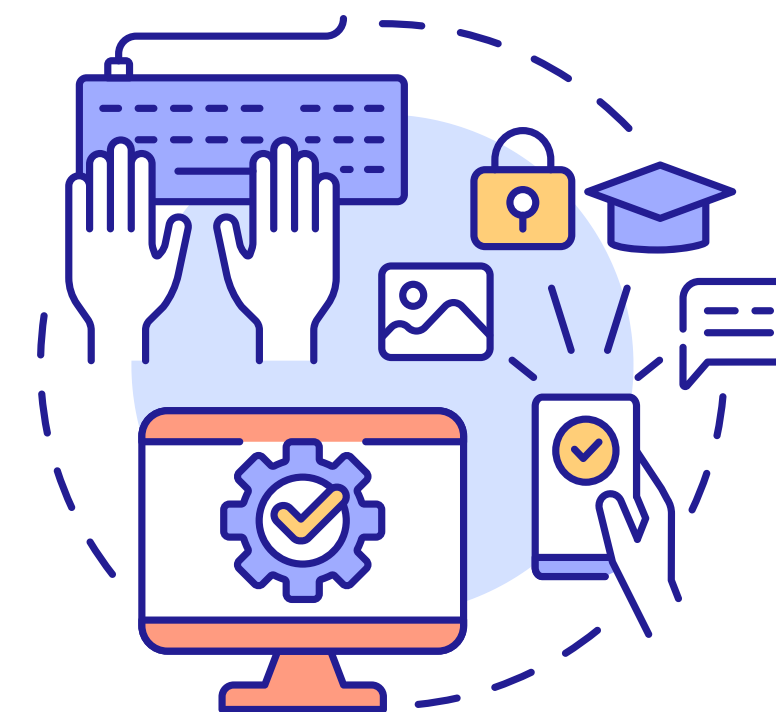


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**Technological innovation** supports **more efficient production and** the development of convenient, value-added **products that meet modern consumer demands.**

**Innovation, digital skills, and the ability to adapt quickly are becoming key competitive advantages for aquaculture businesses.**



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## **3.3.1 Recognising potential niche markets (production of eco-certified, organic or locally branded bivalves).**

**Niche markets** offer producers the **opportunity to compete** through quality, sustainability, and product identity rather than price.

These markets focus on **products with certified sustainability, guaranteed origin, natural farming methods, and strong links to local traditions**, attracting consumers willing to pay premium prices.

Developing **niche products helps** companies **differentiate** themselves **from low-cost competitors** and improve profitability.



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## France



France **markets oysters** as **premium products** through the concept of "**merroir**", highlighting the unique environmental characteristics of each production area.

## Ireland



**Promotes eco-certified and organic shellfish** through schemes such as MSC and the Origin Green programme, **strengthening its position in premium export markets.**

## Italy and Spain



Rely on **PDOs, PGIs, and regional brands** (e.g. Cozza di Scardovari and Mejillón de Galicia) to emphasize product **quality, origin, and tradition.**

## Greece



Gradually moving **towards higher-value niche markets** by promoting **sustainability** and the **Mediterranean diet.**

→ Successfully **entering niche markets requires** producers to understand consumer **trends**, comply with **certification standards**, and communicate **product quality** and **sustainability effectively.**



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## 3.3.2 Understanding the opportunities associated with market diversification and technological innovation

To reduce business risks, aquaculture companies **must diversify both products and markets.**

### Product diversification

**Product diversification** focuses on **innovation and value-added products.**

In Italy and Spain, companies are increasingly producing **pasteurized shellfish, modified-atmosphere packaged products, frozen half-shell products, and ready-to-cook meals.**

In Spain, the high-end canning industry transforms highly perishable shellfish into long-life products with much higher added value.

Process innovation also includes **improved purification technologies, optical sorting systems, and sustainable packaging**, which enhance product quality and reduce environmental impact.



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## Market diversification

Relying on a single buyer or a single country increases economic vulnerability, so **companies are expanding into multiple international markets.**

Ireland is a good example of successful geographical diversification, exporting shellfish to France, Asia, and the United States because domestic demand is relatively low.

**Diversifying sales channels**—such as retail, hospitality, and direct sales—**helps companies reduce the impact of market crises and sudden changes in demand.**



**Diversifying Sales Channels Reduces Impact of Market Crises and Demand Changes**



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## **3.3.3 Demonstrate the ability to use digital tools and e-commerce platforms to reach new customers**

**Digital transformation is changing the bivalve aquaculture sector by improving market access, reducing intermediaries, and creating direct relationships with consumers.**

### **E-commerce (B2C and B2B)**

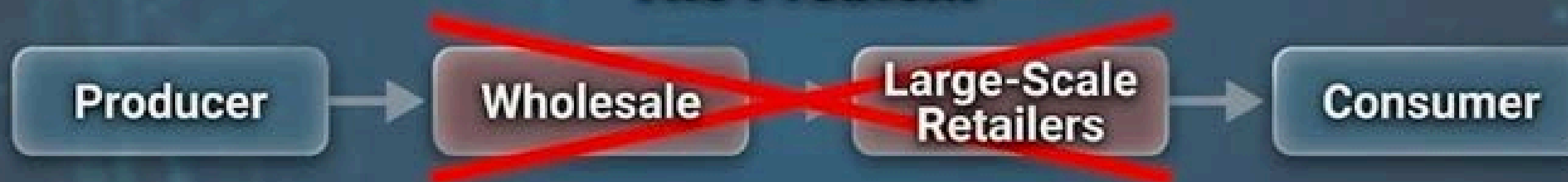
**E-commerce** is becoming an important sales channel.

- In France and Italy, producers increasingly **sell directly to consumers (B2C)**;
- Ireland mainly **uses digital platforms for international B2B (Business-to-Business) trade**;
- Spain and Greece are also **expanding online sales**.



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## The Problem



Power dynamics have crystallized in favor of large-scale retail. [cite: x]  
Producers accept extremely low prices due to product perishability. [cite: x]

## The Digital Solution



**E-commerce and B2C platforms bypass the bottleneck.**

**Benefits:**

1. Brand Loyalty construction.
2. Acquisition of the distributor's margin.
3. Reservation-based sales to optimize harvests.

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## Digital traceability and safety

**Digital traceability**, through technologies such as **QR codes** and **blockchain**, provides detailed information on product origin, harvest date, water quality, and food safety, **increasing transparency and consumer confidence**.



## Social Media and Storytelling

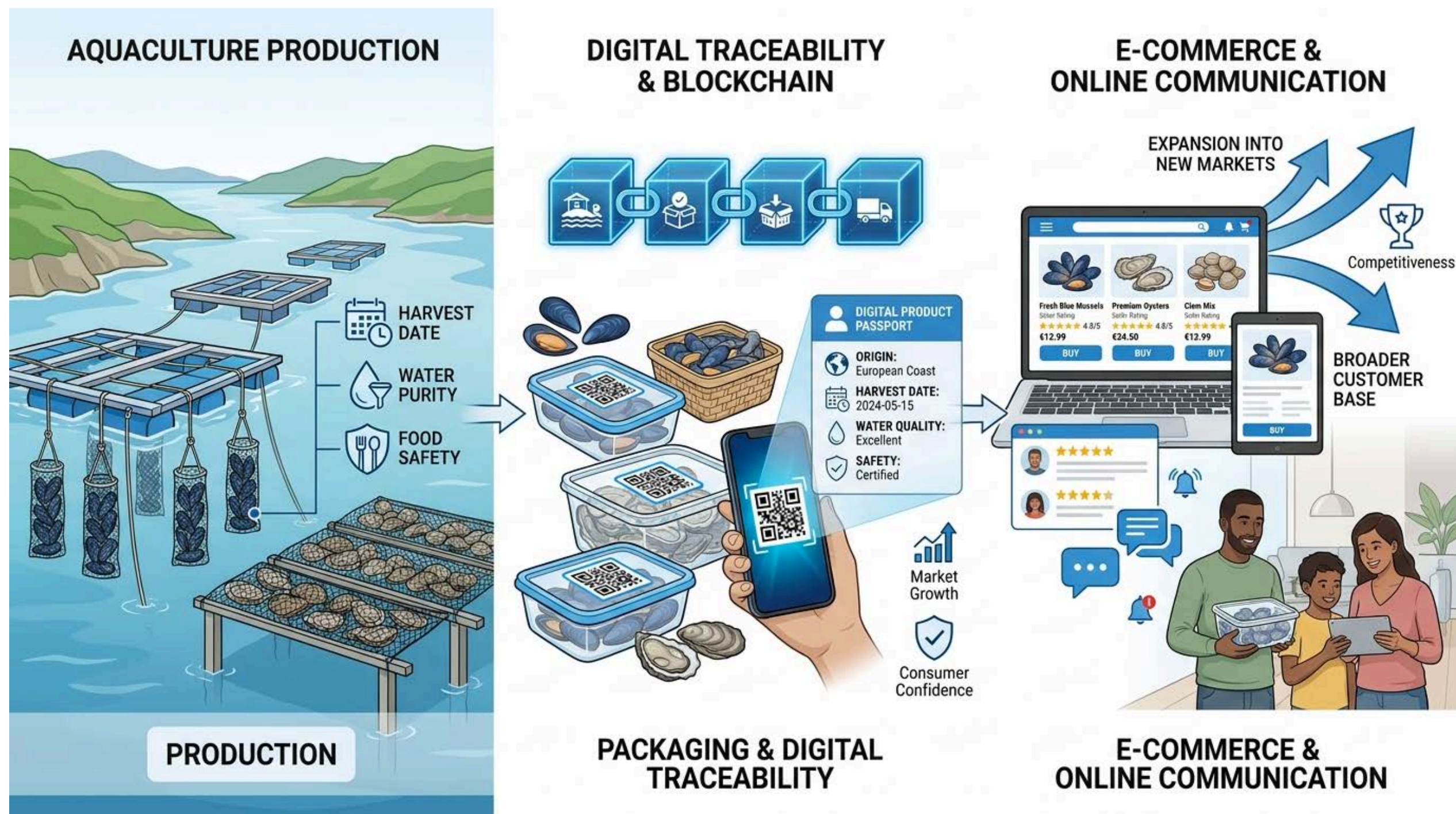
**Social media platforms** such as Instagram, LinkedIn, and TikTok are **used to promote products, showcase farming practices**, and **strengthen brand identity through storytelling**. **Educational content**, such as recipes and tutorials, helps consumers better understand and prepare bivalve products, **encouraging consumption**.



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Integrating e-commerce, digital traceability, and online communication is becoming essential for improving competitiveness, expanding the customer base, and ensuring long-term business growth.



# THANK YOU!



2, Enrico Toti – 47841 Cattolica (RN) Italy



mare@coopmare.com



+39 0541833680



www.coopmare.com



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