



## D3.4 ROADMAP FOR CLUSTERING STRATEGY AWARENESS: GUIDELINE / VADEMECUM

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## Summary CallMeBLUE Project

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The role of maritime clusters is increasingly important in the process of connecting public and private entities working in all transversal sectors related to blue economy at both national and Mediterranean level. Maritime clusters are indeed crucial facilitators of networking, technology transfer, internationalization, and innovation between SMEs, large companies, research centers, universities, etc., and they act as key actors in promoting sustainable investments in the blue economy.

CALLMEBLUE aims to strengthen existing cluster alliances in the Mediterranean area in order to accelerate north-south regional cooperation processes towards the emerging of strategic maritime clusters in the North African area (south-south cooperation). CALLMEBLUE will aim to create a strategic vision and transferable models of interregional cooperation.

In particular, CALLMEBLUE will aim to implement concrete actions at both local and regional levels in order to raise awareness of the relevance of Maritime clusters as key actors for sustainable blue economy policies. The project will indeed promote the exchange of best practices and knowledge transfer between the northern and southern areas, including piloting learning activities aimed at offering a transferable training “Toolkit”, addressed to future maritime clusters in the southern area in order to be prepared for the legal, structural, administrative and management aspects for a concrete creation of future maritime clusters.

CALLMEBLUE ambition is to set up and strengthen maritime cluster alliances (North-South cooperation) – particularly targeting southern Mediterranean countries (South-South cooperation) but also allowing to enhance regional dialogue and more advanced services offered to the Cluster Mediterranean ecosystem. At this aim, CALLMEBLUE offers its role as an accelerator for the policy goals set by relevant regional initiatives such as the UfM Ministerial Declaration for the sustainable blue economy and the WestMED Initiative.



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different stages of cluster maturity. These initiatives are designed to support the enduring consolidation, resilient growth, and effective regional integration of maritime clusters within the broader blue economy ecosystem of the Southern Mediterranean.

## 2. Background

The Mediterranean region, characterised by its extensive coastline and valuable maritime heritage, presents significant potential to drive sustainable economic development through the strengthening of maritime clusters. These ecosystems integrate a diverse range of actors (businesses, research centres, public authorities, and civil society organisations) thereby facilitating innovation, enhancing competitiveness, and fostering cross-sectoral collaboration within the Blue Economy. In this regard, the cluster model has gained recognition as a key strategy to promote territorial cohesion, encourage sustainable practices, and consolidate resilient local economies through knowledge generation, optimisation of shared resource use, and capacity building.

Within this context, the CallMeBlue project has been designed to catalyse the establishment and consolidation of sustainable maritime and marine clusters across the Mediterranean basin. Through a series of studies and local workshops, the project has identified both enabling factors and persistent barriers influencing cluster development in key countries of the Southern and Eastern Mediterranean, specifically Mauritania, Morocco, Egypt, Algeria, and Tunisia.

*The Matchmaking Local Workshops*, held in Tunisia, Algeria, and Mauritania between October 2024 and January 2025<sup>2</sup>, enabled the mapping and engagement of key stakeholders in each territory, as well as the identification of high-potential sectors for cluster development.

Concurrently, the *Feasibility studies on embryonic maritime clusters in Morocco and Egypt* (Chapman & Racuna, 2025) provided a rigorous analysis of the current situation in both countries, evaluating existing governance models,

<sup>2</sup> These studies were conducted by Abdel Herizi, Nesrine Ziad, and Merbah for Algeria (2024); Fayela, Kacem, and Toumi for Tunisia (2024); and Chapman, Recuna, and Sau for Mauritania (2025). Full references are provided at the end of the deliverable.



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the policy and regulatory framework, and available public–private collaboration and financing mechanisms.

Additionally, the project fostered regional dialogue and collaborative learning through the exchange of clustering strategies and developed a practical toolkit to support the implementation of cooperative strategies and projects. Complementing these efforts, transnational *Learning Labs* were organised to promote mutual learning and capacity building among cluster actors (Yovanof & Kosmidis, 2025).

Across the territories studied, several **key areas for improvement** have been identified:

- **Strengthening governance** due to fragmented institutional frameworks and the need for enhanced coordination among key actors.
- **Expanding access** to targeted and **sustainable financing**. The lack of adequate access could hinder the ability to make long-term investments in cluster development.
- **Digitalisation constraints** could slow the adoption of advanced technologies and smart solutions essential for competitiveness and sustainability.

Despite these challenges, several high-potential sectoral opportunities have been identified. Aquaculture emerges as a strategic sector, driven by increasing demand and favourable environmental conditions. The development of digital ports appears as a key avenue to optimise logistics and improve operational efficiency. Furthermore, emerging sectors such as green hydrogen production offer innovative pathways to diversify maritime economies and support the transition towards sustainable energy sources.

In conclusion, overcoming these challenges and fully capitalising on sectoral opportunities necessitates an integrated approach that combines strong and coherent political support, fosters active stakeholder engagement and effective coordination, and promotes sustained investments in research, innovation, and capacity building, all tailored to the specific characteristics and needs of each cluster.



### 3. Cluster Typologies by maturity levels

Based on the studies conducted, and the conclusions presented in the preceding section, it can be affirmed that the development of maritime and marine clusters does not follow a linear or uniform trajectory. Rather, their evolution proceeds through various stages of maturity, influenced by economic and institutional factors, as well as the relationships among the actors that constitute the business fabric unique to each region.

This section presents a comparative overview of leading international maritime clusters, highlighting governance models, financing mechanisms, innovation strategies, and talent development approaches. The aim is to benchmark the current positioning of the analysed clusters against recognised international best practices, providing an evidence base for targeted policy and operational recommendations.

This roadmap classifies clusters into three distinct typologies, each reflecting a specific level of maturity with associated characteristics, needs, and strategic approaches:

#### 3.1 Embryonic cluster

Embryonic clusters are at an initial stage of development. They typically emerge in regions where sectoral potential exists but where clustering culture, institutional support, or multisectoral collaboration remain limited. These clusters are often informal or lack a defined structure, relying on the initiative of a few pioneering actors. Within the territories studied, Mauritania, Morocco, and Egypt<sup>3</sup> serve as representative examples of this typology.

<sup>3</sup> In the context of the CallmeBLUE project, a SWOT analysis was carried out in both Morocco and Egypt to assess the internal and external factors influencing cluster development. This analysis highlighted internal strengths such as existing maritime infrastructure, technical know-how and sectoral expertise. It also identified external opportunities, including prospects for international cooperation and access to emerging technologies. (Chapman & Racuna, Feasibility study on Embryonic Maritime Cluster in Egypt and Morocco, 2025)



Characteristic	Embryonic Cluster	Emerging Cluster	Advanced Cluster
<b>Governance &amp; Structure</b>	Early stages coordination mechanism. No formal governance structures.	Presence of a coordinating organisation or initiative. Initial strategic planning or pilot action underway.	Established legal entity with clear governance and financial sustainability.
<b>Stakeholder Engagement</b>	Fragmented value chain and isolated stakeholders.	Growing multi-actor engagement (public, private, civil society). Recognition by policymakers and funding institutions.	High level of stakeholder commitment to joint strategy implementation.
<b>Cluster Management Capacity</b>	Limited internal capacity for cluster management.	Development of mutually beneficial relationships between enterprises. Alignment with sustainable development and Blue Economy goals.	Mature and well-executed practices within a connected industrial ecosystem.
<b>Policy &amp; Institutional Support</b>	Impacted by administrative obstacles and undergoing enhancements of legal frameworks. Efforts underway to increase visibility and international exposure.	Participation in national or international projects. Increasing recognition by policymakers or funding bodies.	Strong innovation capacity, international visibility, and active policy contribution.



Co-funded by the European Union



<b>Innovation &amp; Technology Adoption</b>	Emerging interest in Blue Economy sectors, but strategic direction at initial stages.	Initial steps towards R&D and new technology adoption.	Active promotion of knowledge exchange, R&D, and systematic adoption of new technologies.
<b>Knowledge Sharing &amp; Best Practices</b>	Informal exchanges, if any, between actors.	Gradual development of collaborative initiatives.	Systematic sharing of best practices and continuous performance improvement.
<b>Services &amp; Support to Members</b>	Formalized services to members still in progress and at initial stages.	Occasional support activities linked to specific projects.	Advanced services for members (training, project development, international support).
<b>Sustainability &amp; Clean Growth Leadership</b>	Structured sustainability agenda still in progress and at initial stages.	Initial alignment with sustainability goals.	Leadership in clean growth initiatives and establishment of centres of excellence.

Table 1: "Maturity Matrix: Maritime Cluster Typologies" (Own elaboration)



## 4. The Roadmap for Clustering Strategy Awareness

This roadmap provides a practical guide for the establishment and development of maritime clusters, drawing upon experiences from Tunisia, Algeria, Egypt, Morocco, and Mauritania. It is designed to be flexible, accommodating clusters at various stages of maturity, from embryonic to advanced, and diverse regional contexts, with the overarching goal of maximising their contribution to a sustainable blue economy.

The roadmap is structured around four key pillars:

- Awareness raising and active stakeholder engagement
- Joint actions and capacity building
- Research and innovation strategy
- Effective governance and sustainability models

### 4.1 Awareness and Stakeholder Engagement

Raising awareness goes beyond simply sharing information; it aims to inspire stakeholders to proactively contribute to the cluster’s mission. This involves engaging a diverse range of actors, including public authorities, private enterprises, academia, environmental organisations, and civil society, to ensure inclusive and meaningful participation. Such engagement fosters a collective sense of ownership and responsibility, which is essential for building trust, enhancing collaboration, and unlocking the cluster’s full potential as a driver of sustainable development in the blue economy.

This shared understanding and stakeholder engagement lay the groundwork for joint actions and capacity building, enabling clusters to translate vision into concrete initiatives.

Key Aspect	Description	Objectives
<b>Awareness Raising</b>	Informing potential members and partners about cluster purpose and benefits	- Build shared understanding



Key Aspect	Description	Objectives
<b>Stakeholder Engagement</b>	Involving public authorities, private sector, academia, environment, society	- Mobilise resources
		- Foster inclusive representation - Promote ownership and commitment
<b>Communication Channels</b>	Workshops, meetings, campaigns, digital platforms	Ensure effective information flow and active participation
<b>Expected Outcomes</b>	Increased stakeholders buy-in and active contribution	Establish trust and collective responsibility

Table 2: "Awareness and Stakeholder Engagement" (Own elaboration)

## 4.2 Joint Actions and Building Capacity

The stakeholders' ability to work collectively strengthens each actor's competencies in a complementary and reciprocal manner, laying the foundation for a shared strategic vision and efficient coordination of efforts. This process is based on organised, multisectoral cooperation that fosters continuous knowledge exchange, optimises shared resources, and clearly allocates responsibilities. Within this framework, activities such as specialised workshops addressing specific sector challenges and pilot projects that validate innovative technologies or business models in real-world market environments stand out.

Activity Type	Examples	Objectives
<b>Specialised Workshops</b>	- Learning Labs Toolkit - Local Matchmaking Workshops in Algeria, Tunisia, Mauritania	- Address sector-specific challenges - Facilitate targeted knowledge transfer and problem-solving
<b>Pilot Projects</b>	- Technology validation projects	- Demonstrate feasibility



Activity Type	Examples	Objectives
<b>Capacity Building</b>	- Business model trials in real-world markets	- Reduce risks - Encourage innovation adoption
	Training on cluster governance, sustainability, digitalisation, financing, market analysis	- Strengthen technical and managerial skills - Improve collaboration and strategic decision-making

Table 3: “Key Activities in Joint Actions and Capacity Building” (Own elaboration)

These initiatives, such as the *Learning Labs Toolkit* and *Local Matchmaking Workshops* conducted in Algeria, Tunisia, and Mauritania, have yielded tangible short-term results and fostered mutual trust, strengthening long-term strategic partnerships. Capacity building targets essential skills including cluster governance, sustainability across value chains, digitalisation, strategic financing, and advanced market analysis.

By combining technical training with collaborative implementation, members enhance their competencies, enabling more accurate opportunity identification, increased investment attraction, and joint market access. This continuous improvement cycle is vital for maritime clusters to adapt to evolving market conditions, drive innovation, and contribute significantly to regional and international blue economy strategies.

### 4.3 Research and Innovation Strategy

Another fundamental pillar for the development and competitiveness of maritime clusters, regardless of their maturity level, is research and innovation. A robust strategy in this area enables the identification of emerging technologies, the anticipation of market trends, and the promotion of innovative solutions that address the specific challenges of the blue economy.

This strategy should focus on fostering collaboration between research centres, businesses, public administrations, and other key stakeholders, facilitating knowledge exchange and technology transfer. It is also essential to establish mechanisms that encourage the co-creation of R&I projects,



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promoting the integration of multidisciplinary capabilities and the efficient use of resources. The strategic approach must prioritise areas with high impact potential, such as marine renewable energy, blue biotechnology, digitalisation applied to maritime management, and technologies for the conservation and sustainability of marine ecosystems.

Furthermore, active participation in international networks and funding programmes is crucial to support the internationalisation and scalability of developed innovations. Finally, the research and innovation strategy should be flexible and adaptive, enabling clusters to anticipate regulatory, environmental, and technological changes, thus ensuring their resilience and leadership within the blue economy.

Building on this foundation, the approach should be tailored according to the cluster's maturity level:

Cluster Maturity Level	Key Focus Areas	Strategic Actions
<b>Embryonic Clusters</b>	<ul style="list-style-type: none"> <li>- Mapping existing scientific and technological capacities</li> <li>- Network building among academic, public, and private actors</li> </ul>	<ul style="list-style-type: none"> <li>- Identify collaboration opportunities</li> <li>- Define priority innovation areas</li> </ul>
<b>Emerging Clusters</b>	<ul style="list-style-type: none"> <li>- Consolidation of collaborative projects</li> <li>- Validation of innovative technologies and business models in real-world environments</li> </ul>	<ul style="list-style-type: none"> <li>- Secure funding</li> <li>- Participate in calls for proposals to foster growth and development</li> </ul>
<b>Advance Clusters</b>	<ul style="list-style-type: none"> <li>- Technological diversification</li> <li>- Adoption of disruptive solutions</li> <li>- International expansion</li> </ul>	<ul style="list-style-type: none"> <li>- Strengthen collaboration with strategic partners nationally and internationally</li> <li>- Maintain competitiveness and adapt to evolving market dynamics</li> </ul>

Table 4: "Tailoring the Research and Innovation Strategy by Cluster Maturity Level" (Own elaboration)

Building on a solid research and innovation strategy, the successful development and sustainability of maritime clusters depend equally on the establishment of effective governance frameworks. While innovation drives competitiveness and adaptability, governance provides the structural backbone that ensures transparent decision-making, accountability, and resource management. It is through well-defined governance models that clusters can coordinate diverse stakeholders, align their objectives, and secure the trust and commitment necessary for long-term success.

The following section delves into the essential components of cluster governance, exploring how governance structures must be tailored to the cluster’s maturity, sectoral focus, and geographical context. Furthermore, it highlights the evolving nature of clusters from geographical concentrations into dynamic, adaptive business ecosystems. Understanding and implementing robust governance mechanisms is therefore critical, not only for operational efficiency but also for fostering resilience and sustainability within the blue economy.

#### 4.4 Governance and Sustainability Model

Effective governance is the backbone of any successful maritime cluster. A well-defined governance model ensures transparent and efficient decision-making, strengthens trust among members, facilitates resource management, and safeguards the cluster’s long-term sustainability. Such governance structures must be adapted to the cluster’s maturity level, sectoral focus, and geographical context, while remaining flexible enough to evolve over time. In the Blue Economy, robust governance is essential for aligning diverse stakeholders, public authorities, private companies, academia, environmental actors, and society, towards common objectives. This section outlines the key components of a cluster’s governance framework, its evolution into a broader business ecosystem, and the statutory elements required to guarantee accountability, inclusiveness, and resilience.

The organisational structure described above ensures that each function within the cluster is clearly defined and coordinated, enabling efficient operations and member engagement. This governance framework is illustrated in:

Figure 1: “Organisation Chart: Cluster Governance” (Own elaboration)



(Own elaboration), providing a visual summary of the roles, responsibilities, and relationships among the cluster’s governing bodies and departments.



## CLUSTER GOVERNANCE

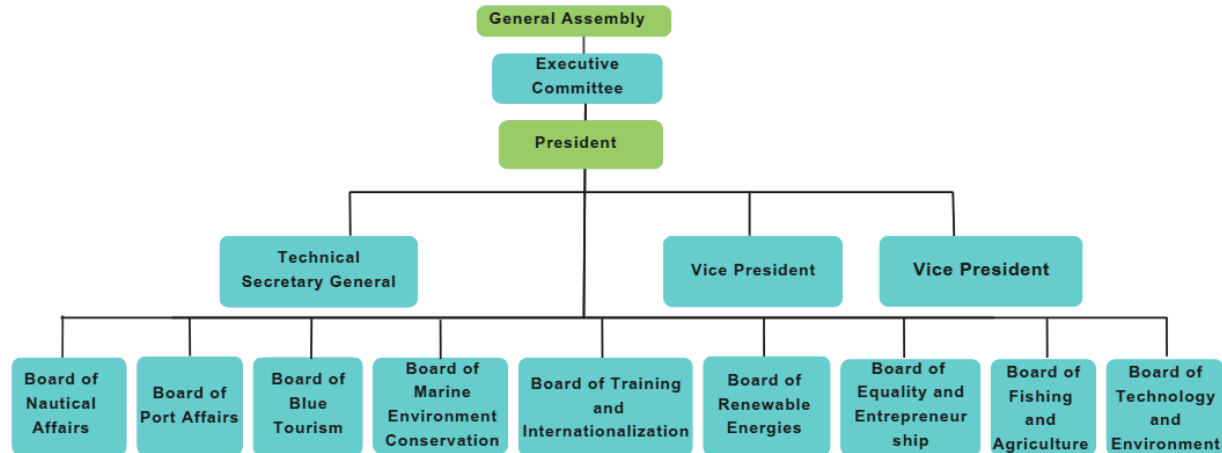


Figure 1:“Organisation Chart: Cluster Governance” (Own elaboration)

### A. General Assembly

The General Assembly is the highest governing body of the cluster. It consists of all cluster members and has the ultimate decision-making authority. The General Assembly approves key strategies, financial matters, and overall policies that guide the cluster's operations.

### B. Board of Directors

The Board of Directors is responsible for overseeing the management of the cluster and providing strategic direction. It acts as a bridge between the General Assembly and the operational aspects of the cluster. The Board typically consists of the following positions:



Position	Role	Responsibilities
<b>President</b>	Lead the Board and represent the cluster	Ensure strategic objectives are met and align with its mission Represent the cluster externally
<b>Vice President(s)</b>	Support the President <sup>6</sup>	Act as stand-in when necessary Oversee specific functions or sectors ensuring they remain on track
<b>General Secretariat</b>	Manage daily administration	Implement decisions from the Board and General Assembly Coordinate cluster activities
<b>Treasurer</b>	Oversee financial health	Manage budget Allocate resources efficiently Prepare financial reports for the Board and General Assembly
<b>Board Members</b>	Provide expertise from various sectors <sup>7</sup>	Advise on strategic decisions Represent different cluster sectors (business, academia, government, environment)

Table 5: “Board of Directors Structure and Responsibilities” (Own Elaboration)

### C. Cluster Manager, Members and Department

To ensure the effective management and sustainable growth of maritime clusters, it is essential to establish a clear organisational and governance structure. This structure delineates the roles, responsibilities, and interactions among the key bodies and departments within the cluster. The following table

<sup>6</sup> Depending on the size of the cluster it may be more than one vice president.

<sup>7</sup> (e.g., business, academia, government, environment) or could represent all the subsectors of BuE, it will depend on the promise and potential sectors identified.

summarises the composition and functions of the **Board of Directors**, which plays a central role in providing strategic direction and oversight.

Beyond the Board, the cluster's day-to-day operations are managed by the **Cluster Manager**, who coordinates projects and acts as a vital link between leadership and members. The **cluster members** themselves, comprising businesses, academic institutions, government agencies, and NGOs, form the core of the ecosystem, actively contributing to its innovation, research, and policy development activities.

Clusters are typically organised into specialised departments focusing on areas such as **international projects, consultancy, communication, and events & networking**. This organisational framework ensures coordinated, efficient operations and fosters member engagement, laying the foundation for clusters to evolve from geographically concentrated groups into dynamic, adaptive ecosystems that drive innovation and collaboration across sectors.

Governance Body/ Department	Role	Responsibilities
<b>General Assembly</b>	Highest governing body	Approves key strategies, financial matters, and overall policies
<b>Cluster Manager</b>	Oversees daily operations	Implements projects; Coordinates departments; Liaises between leadership and members
<b>Cluster Members</b>	Core entities forming the cluster	Participate actively in activities; Contribute to innovation, research, policy, resource sharing
<b>International Projects Dept.</b>	Manages international collaborations and projects	Develops partnerships; Coordinates cross-border initiatives
<b>Consultancy Dept.</b>	Provides expert advice and support	Offers specialised consultancy services to cluster members
<b>Communication Dept.</b>	Handles internal and external communications	Manages messaging, public relations, and stakeholder engagement



Governance Body/ Department	Role	Responsibilities
Events & Networking Dept.	Organises events and networking activities	Facilitates knowledge exchange and relationship building

Table 6: “Governance Bodies and Department Roles and Responsibilities” (Own elaboration)

The cluster’s specialised departments are depicted in **Error! Reference source not found.** highlighting the distinct functions that enable operational efficiency and member engagement. While such a structure forms the operational backbone of the cluster, it also serves as the foundation for its evolution.

**CLUSTER GOVERNANCE: DEPARTMENTS**

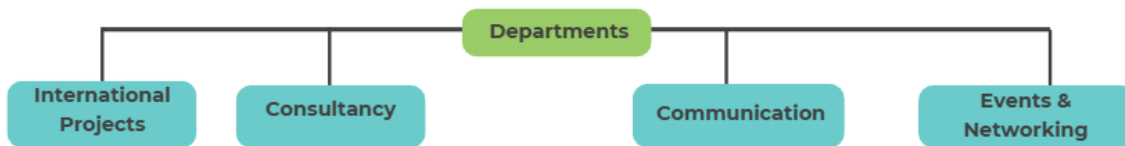


Figure 2: “Cluster Governance: Departments structure” (Own elaboration)

**D. From Governance to Ecosystem Evolution**

Beyond formal governance structures and organisational roles, maritime clusters are dynamic entities that evolve. Initially formed as geographically concentrated groups of interconnected actors, clusters gradually transition into complex, adaptive ecosystems capable of fostering innovation, competition, and cooperation across multiple sectors. Effective collaboration among diverse stakeholders enhances complementary competencies, establishes a shared strategic vision, and enables coordinated efforts. This multisectoral cooperation fosters continuous knowledge exchange, optimises resource use, and clarifies responsibilities, laying the foundation for sustained growth and resilience.

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Clusters can be understood as transitional forms within the broader evolution of economic spaces. While they begin by focusing on geographic proximity among businesses, institutions, and infrastructure, clusters also embody dynamic systems that facilitate innovation and mutual economic benefit. A defining characteristic of clusters is their ability to nurture close functional relationships among participants, aligning them towards common goals and generating shared value (Ivanova, 2023).

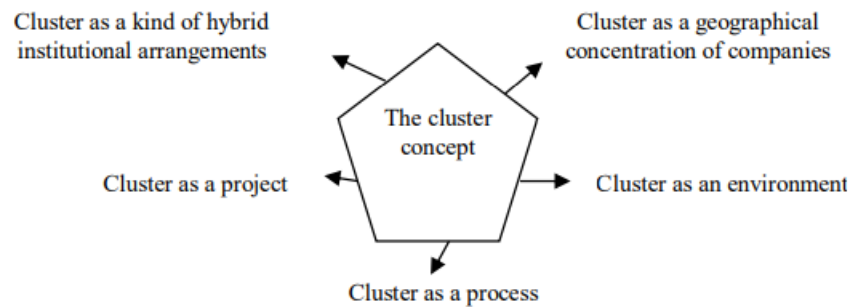


Figure 3: "The cluster concept". Elaborated by Elena Ivanova (2023)

Interpreting clusters as ecosystems highlights the collaborative nature of companies and organisations, which work not only to serve customers but also to create value collectively. As clusters accumulate critical mass, capital, and innovation capacity, they evolve into more comprehensive business ecosystems encompassing a broader range of stakeholders, from businesses and academia to society and environmental actors (Ivanova, 2023).

In this context, helix models provide a conceptual framework that supports ecosystem functions. The traditional **Triple Helix** model, comprising businesses, academia, and government, forms the foundation for cluster interactions by facilitating innovation, policy alignment, and industrial development. Responding to growing global challenges such as environmental degradation and social inequality, the model evolved into the **Quadruple Helix**, adding environmental actors to the framework. Further refinement led to the **Quintuple Helix**, which fully integrates society as an active participant, emphasising public engagement, community well-being, and long-term sustainability.

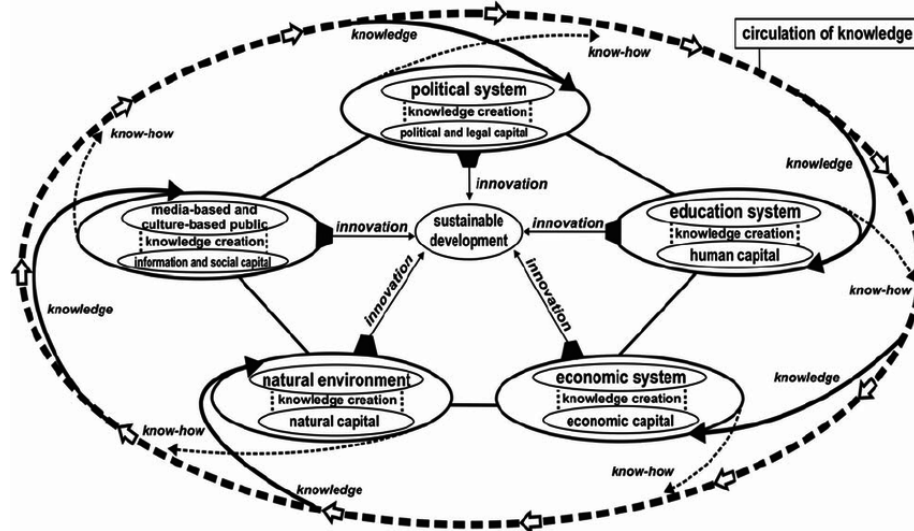


Figure 4: “The Quintuple Helix model and its function (functions)”. Modified from Etzkowitz and Leydesdorff (2000), on Carayannis and Campbell (2006, 2009, 2010), and on Barth (2011a)

The Quintuple Helix model is particularly relevant in the Blue Economy, as it fosters collaboration among five key sectors:

- **Governance:** providing the legal and regulatory framework.
- **Maritime-Marine Businesses:** driving job creation and economic growth.
- **Academia:** including universities and research centres, developing innovative solutions and tailored training programmes.
- **Environmental Organisations:** emphasising marine biodiversity protection.
- **Society:** the ultimate beneficiaries, engaged actively through media and participation.

To manage this complexity, clusters require a solid legal and organisational foundation. The cluster statutes establish the mission, vision, and objectives, while clearly defining roles, responsibilities, and processes across governance bodies and members. Key elements to include are:

- **Governance Model:** Roles and responsibilities within governance structures such as the Board of Directors, General Assembly, and Cluster Manager.
- **Decision-Making Processes:** Procedures for voting, meetings, and member involvement.

- **Financial Management:** Budgeting, fundraising strategies, resource allocation, and transparency overseen by the Treasurer.
- **Operational Procedures:** Project management, resource distribution, and performance tracking.
- **Member Participation:** Responsibilities in meetings, projects, and contributions to cluster goals.

Strong governance combined with transparent decision-making, accountability, and inclusive participation builds trust and attracts public and private investment. Embedding good governance in statutes enables clusters to mobilise funding, secure partnerships, and deliver long-term value to members and the wider community.

The following section explores strategies for funding and resource mobilisation tailored to clusters' maturity levels and strategic objectives.

#### 4.5 Sources of Funding

Securing adequate and sustainable financial resources is fundamental for the development, growth, and long-term resilience of clusters. Given the diverse institutional, economic, and regulatory environments in which clusters operate, a multifaceted funding approach is required, combining a variety of sources tailored to the cluster's stage of maturity and strategic objectives.

At the **national and regional level**, public funding often constitutes a primary source of support. This includes allocations from **government budgets**, **sectoral programmes**, and **incentive schemes** designed to stimulate innovation, competitiveness, and sustainable development within targeted industries. However, clusters frequently face challenges such as complex administrative procedures, underdeveloped regulatory frameworks, and limited access to funds, especially during early development phases. Strengthening clusters' administrative and technical capacities is essential to improve their ability to secure and manage public resources efficiently.

Clusters can also access a broad range of **international funding opportunities**, including **programmes funded by regional bodies**, **development banks**, and **multilateral organisations**. These sources provide grants, technical assistance, and co-funding mechanisms to support projects with economic, social, or environmental impact. Effective engagement with these funding streams requires clusters to build competencies in proposal development, compliance,



and partnership formation to navigate bureaucratic requirements and optimise funding potential.

Private sector financing represents a growing component in cluster funding portfolios. This encompasses **membership fees, direct investments, public-private partnerships, venture capital, corporate social responsibility (CSR) contributions, and innovation funds**. While private investment is often more accessible to established clusters, emerging clusters can encourage private participation through pilot projects and by clearly demonstrating the value generated by the cluster approach.

Innovative **collaborative financing models**, such as **crowdfunding** and **co-investment schemes**, are gaining prominence as complementary tools to mobilise resources, particularly for projects with significant social or environmental benefits. Although these alternative mechanisms offer promising opportunities, they are still in developmental stages and necessitate targeted awareness-raising and capacity-building efforts among cluster stakeholders.



## 5. Guideline for cluster by maturity level

### 5.1 Embryonic cluster

The following section provides a practical guide tailored to maritime cluster development at different maturity stages: embryonic, emerging, and advanced. Each cluster typology is accompanied by specific recommendations structured around key areas essential for sustainable growth and resilience. These include **strategic action plans, transformation tools, financing mechanisms, governance** and **statutory frameworks**, as well as **measurable success indicators and monitoring practices**. By aligning cluster development efforts with these structured guidelines, stakeholders can systematically address challenges and harness opportunities appropriate to their current phase, fostering innovation, collaboration, and long-term impact within the blue economy<sup>8</sup>.

Aspect	Recommendations for Emerging Cluster	Suggested Metrics/Indicators
<b>Recommended Action Plan</b>	<ul style="list-style-type: none"> <li>- Establish informal coordinating structures and empower local champions.</li> <li>- Conduct awareness campaigns and foundational workshops.</li> <li>- Map stakeholders and facilitate networking.</li> </ul>	<ul style="list-style-type: none"> <li>- Number of coordinating structures established.</li> <li>- Workshop attendance rates.</li> <li>- Number of stakeholders identified and engaged.</li> <li>- Pilot projects initiated and completed.</li> <li>- Meetings held with authorities.</li> </ul>

<sup>8</sup> Use the action plan to prioritise initial activities, apply the recommended tools to strengthen governance, and monitor progress through the listed indicators



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<p><b>Transformation Tools<sup>9</sup></b></p>	<ul style="list-style-type: none"> <li>- Implement low-risk pilot projects.</li> <li>- Promote institutional dialogue.</li> <li>- Support access to funding sources.</li> <li>- Utilise the Cluster Starter Toolkit.</li> <li>- Participate in Learning Labs.</li> <li>- Conduct SWOT analysis.</li> <li>- Employ networking platforms.</li> <li>- Undertake market and feasibility studies.</li> <li>- Apply monitoring and evaluation frameworks.</li> </ul>	<ul style="list-style-type: none"> <li>- Funding secured.</li> <li>- Number of toolkit users.</li> <li>- Attendance at Learning Labs.</li> <li>- Number of strategic plans developed.</li> <li>- Active users on networking platforms.</li> <li>- Studies completed.</li> <li>- Monitoring reports produced.</li> </ul>
<p><b>Financing</b></p>	<ul style="list-style-type: none"> <li>- Access seed funding via EU pre-accession and neighbourhood programmes.</li> <li>- Diversify funding sources.</li> <li>- Train in proposal writing and fund management.</li> </ul>	<ul style="list-style-type: none"> <li>- Total funds raised.</li> <li>- Diversity of funding sources.</li> <li>- Number of personnel trained.</li> <li>- Bankable projects developed.</li> </ul>

<sup>9</sup> Once these transformation tools are in place, securing sustainable financing becomes the next critical step

	<ul style="list-style-type: none"> <li>- Engage financial and legal advisors.</li> </ul>	
<p><b>Governance and Statutes<sup>10</sup></b></p>	<ul style="list-style-type: none"> <li>- Develop formal or informal governance structures.</li> <li>- Define internal regulations and clear roles.</li> <li>- Ensure transparency and accountability.</li> <li>- Embed good governance principles.</li> </ul>	<ul style="list-style-type: none"> <li>- Existence of statutes or governance agreements.</li> <li>- Frequency of governance meetings.</li> <li>- Published reports.</li> <li>- Governance evaluations.</li> </ul>
<p><b>Success Indicators and Monitoring</b></p>	<ul style="list-style-type: none"> <li>- Track membership registration.</li> <li>- Monitor pilot project outcomes.</li> <li>- Measure stakeholder participation.</li> <li>- Record funding management.</li> <li>- Document institutional collaboration.</li> <li>- Conduct regular performance reviews.</li> </ul>	<ul style="list-style-type: none"> <li>- Number of active members.</li> <li>- Outcomes from pilot projects.</li> <li>- Participation rates.</li> <li>- Annual financial reports.</li> <li>- Number of partnerships.</li> <li>- Monitoring and evaluation reports.</li> </ul>

Table 7: “Strategic Guidelines and Monitoring for Embryonic Clusters” (Own elaboration)

<sup>10</sup> This governance structure lays the foundation for measurable outcomes, which are captured through clearly defined indicators of success.



## 5.2 Emerging cluster

Aspect	Recommendations for Emerging Cluster	Suggested Metrics/Indicators
<b>Recommended Action Plan</b>	<ul style="list-style-type: none"> <li>- Formalise cluster governance and establish legal entity.</li> <li>- Develop shared strategic roadmap.</li> <li>- Enhance cluster management capacities.</li> <li>- Promote joint R&amp;D and innovation projects.</li> <li>- Engage with policymakers for support.</li> <li>- Increase cluster visibility internationally.</li> </ul>	<ul style="list-style-type: none"> <li>- Legal registration completed.</li> <li>- Strategic plan approved.</li> <li>- Number of cluster managers trained.</li> <li>- Number of joint projects initiated.</li> <li>- Policy dialogues held.</li> <li>- Participation in international events.</li> </ul>
<b>Transformation Tools</b>	<ul style="list-style-type: none"> <li>- Apply Cluster Maturity Assessment Framework.</li> <li>- Use Governance Toolkit for formal structures</li> <li>- Attend advanced Learning Labs.</li> <li>- Utilise Joint Project Development Platforms.</li> <li>- Participate in benchmarking and peer exchanges.</li> <li>- Deploy Communication and Branding Toolkit.</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment reports produced.</li> <li>- Governance documents adopted.</li> <li>- Learning Lab attendance.</li> <li>- Projects developed via platform.</li> <li>- Benchmarking reports.</li> <li>- Branding materials produced.</li> </ul>
<b>Financing</b>	<ul style="list-style-type: none"> <li>- Secure challenge grants and private foundations support.</li> </ul>	<ul style="list-style-type: none"> <li>- Funds secured.</li> </ul>



	<ul style="list-style-type: none"> <li>- Design revolving funds and social impact investments</li> <li>- Strengthen proposal writing and fund management skills.</li> <li>- Foster public-private partnerships and co-investments.</li> </ul>	<ul style="list-style-type: none"> <li>- Number of public-private partnerships.</li> <li>- Personnel trained.</li> <li>- Social impact investment projects initiated.</li> </ul>
<p><b>Governance and Statutes</b></p>	<ul style="list-style-type: none"> <li>- Legally establish cluster management organisation.</li> <li>- Define internal regulations and decision-making processes.</li> <li>- Ensure stakeholder representation.</li> <li>- Promote transparency and accountability mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>- Governance body formally established.</li> <li>- Internal regulations documented.</li> <li>- Stakeholder participation rates.</li> <li>- Governance audits conducted.</li> </ul>
<p><b>Success Indicators and Monitoring</b></p>	<ul style="list-style-type: none"> <li>- Membership growth.</li> <li>- Number and impact of collaborative projects.</li> <li>- Stakeholder engagement metrics.</li> <li>- Funding diversity.</li> <li>- Policy influence indicators.</li> <li>- Regular evaluation and feedback mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>- Number of active members.</li> <li>- Project completion and impact data.</li> <li>- Engagement survey results.</li> <li>- Funding reports</li> <li>- Policy changes influenced.</li> <li>- Evaluation reports.</li> </ul>

Table 8: “Strategic Guidelines and Monitoring for Emerging Clusters” (Own elaboration)

### 5.3 Advanced Cluster

Aspect	Recommendations for Advanced Cluster	Suggested Metrics/Indicators
<b>Recommended Action Plan</b>	<ul style="list-style-type: none"> <li>- Invest in R&amp;D and foster technological leadership.</li> <li>- Promote cross-sector innovation and diversification.</li> <li>- Consolidate international positioning.</li> <li>- Institutionalise continuous learning and upskilling.</li> <li>- Expand tailored member services.</li> <li>- Act as regional mentors.</li> </ul>	<ul style="list-style-type: none"> <li>- Number of R&amp;D partnerships.</li> <li>- Cross-sector projects initiated.</li> <li>- International collaborations established.</li> <li>- Training sessions held.</li> <li>- Member satisfaction metrics.</li> <li>- Peer mentoring programmes active.</li> </ul>
<b>Transformation Tools</b>	<ul style="list-style-type: none"> <li>- Utilise Foresight and Strategic Intelligence Systems.</li> <li>- Deploy Cluster Innovation Platforms.</li> <li>- Establish Centres of Excellence.</li> <li>- Implement Global Positioning Toolkit.</li> <li>- Apply Monitoring and Impact Assessment Systems.</li> <li>- Facilitate Mentorship and Twinning Schemes.</li> </ul>	<ul style="list-style-type: none"> <li>- Trend reports generated.</li> <li>- Innovation projects launched.</li> <li>- Centres operational.</li> <li>- Market entry strategies developed.</li> <li>- Impact assessment reports.</li> <li>- Mentorship pairings completed.</li> </ul>
<b>Financing</b>	<ul style="list-style-type: none"> <li>- Diversify funding with EU projects, public contracts, and private membership fees.</li> <li>- Access innovation vouchers and performance-based grants.</li> <li>- Lead funding consortia.</li> <li>- Enhance financial management capacity.</li> </ul>	<ul style="list-style-type: none"> <li>- Funds mobilised.</li> <li>- Number of grants awarded.</li> <li>- Consortia formed.</li> <li>- Financial audit results.</li> </ul>



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**Governance and Statutes**

- Maintain advanced governance structures.
- Ensure inclusivity and broad stakeholder representation.
- Embed financial transparency and adaptability.
- Align statutes with regional and international frameworks.

- Governance meeting frequency.
- Stakeholder diversity statistics.
- Transparency reports.
- Statute revision records.

**Success Indicators and Monitoring**

- Innovation outputs.
- Economic impact (jobs, exports).
- Funding levels and diversity.
- Stakeholder engagement.
- Sustainability and green transition metrics.
- Continuous improvement through monitoring.

- Patent applications.
- Employment data.
- Funding diversification metrics.
- Engagement surveys.
- Environmental impact reports.
- Monitoring dashboards.

Table 9: “Strategic Guidelines and Monitoring for Advance Clusters” (Own elaboration)



## 6. Conclusions

This study shows that the development of maritime clusters in the Mediterranean region, particularly in the southern and eastern Mediterranean, follows a non-linear path that depends on economic, institutional, and relational factors unique to each territory.

The classification into three typologies - embryonic, emerging, and advanced - makes it possible to identify the characteristics, challenges, and opportunities of each stage, as well as to design strategies and tools suited to their level of maturity. In embryonic clusters, there is a predominance of fragmented actors, a limited culture of collaboration, and the absence of formal governance structures; nevertheless, there is latent potential in strategic blue economy sectors which, through awareness-raising actions, stakeholder mapping, and small pilot projects, can lay the foundations for evolution.

Emerging clusters exhibit a greater degree of organisation and begin to consolidate their governance, engaging multiple actors and generating joint projects, especially in innovation and technology transfer; at this stage, the main challenge is to strengthen the legal and operational structure, increase management and international projection capacities, and secure diversified sources of funding.

Advanced clusters, meanwhile, represent consolidated ecosystems, with solid governance, a high level of cooperation among their members, and the capacity for leadership in innovation, sustainability, and technological development; these structures not only boost the local and regional maritime economy, but also act as platforms for international cooperation and as benchmarks for other initiatives in earlier phases.

The analysis confirms that, regardless of the starting point, strengthening governance, diversifying funding sources, enhancing innovation capacity, and ensuring the active involvement of all stakeholders -under the quintuple helix approach- are decisive elements for progressing towards a resilient, competitive, and sustainable cluster model.

The proposed roadmap offers a transferable strategic and operational framework which, applied progressively and adapted to each context, can



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foster a more cohesive, innovative, and sustainable Mediterranean blue economy. In this regard, it is recommended to adapt interventions to the reality and maturity of each cluster, prioritising actions that strengthen governance and trust among stakeholders; systematically invest in management, digitalisation, and international cooperation capacities; promote innovation aimed at environmental challenges and economic diversification; and establish monitoring mechanisms with clear indicators to allow for the adjustment of strategies based on results. Only through the coordinated commitment of governments, businesses, academia, civil society, and environmental organisations will Mediterranean maritime clusters be able to become sustainable drivers of development, competitiveness, and regional cohesion.





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## Abbreviations

Term	Definition
CALLMEBLUE	Cluster Alliance MedBlue
CMMA	Andalusian Maritime Marine Cluster
WESTMED	Initiative to support actors from both sides of the Mediterranean to strengthen the Blue Economy
R&D	Research and Development

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# CallmeBLUE

Cluster ALLiance MEd BLUE

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