

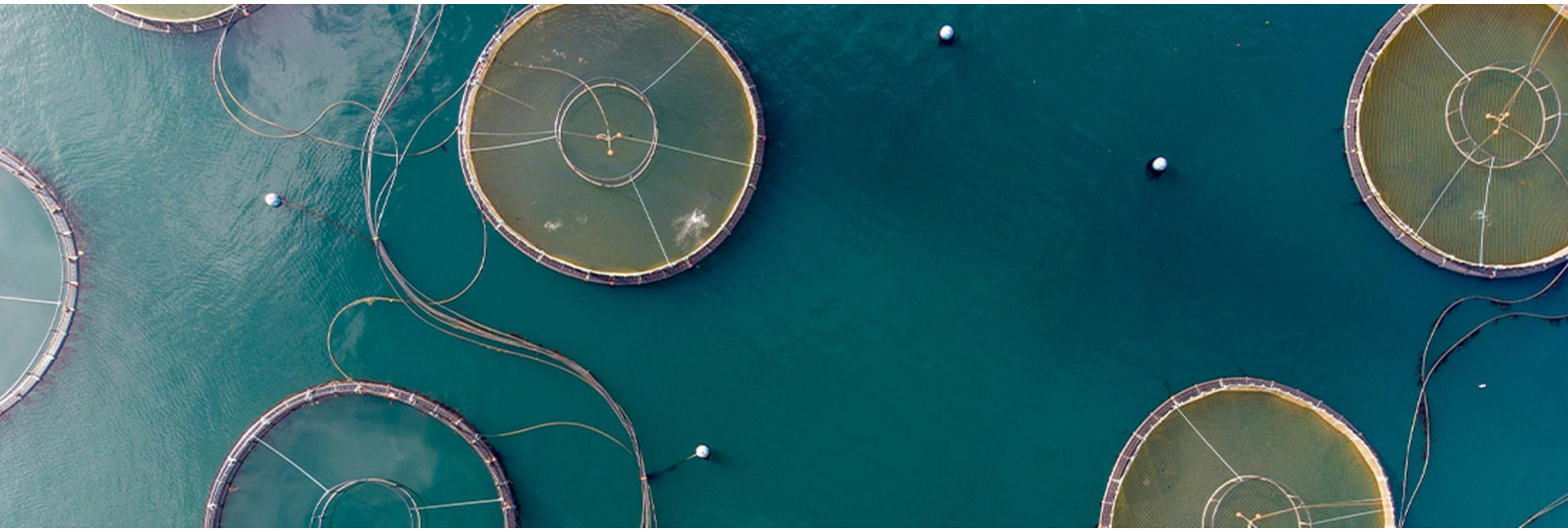


AZA4ICE

**Interreg
Euro-MED**



Co-funded by
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June 2025

COMMON TRANSNATIONAL STRATEGY FOR DRAFTING THE AZA4ICE ACTION PLANS

<https://aza4ice.interreg-euro-med.eu>



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Deliverable ID

Project acronym	AZA4ICE
Project title	Allocated Zones for circular to trigger the transition to an Inclusive and Circular Economy in the aquaculture sector fostering new business opportunities and eco consciousness society
Project mission	Strengthening an innovative sustainable economy
Project priority	Greener MED
Specific objective	RSO2.6 – Promoting the transition to a circular and resource efficient economy
Type of project	Test project (Thematic Project)
Project duration	01/01/2024 – 30/09/2026 (33 months)
Deliverable title	Common transnational strategy for drafting the AZA4ICE Action Plans
Deliverable number	Deliverable 3.2.1
Deliverable type	Strategy
Work package number	WP3
Work package title	Transition to Inclusive and Circular Economy (ICE) in the aquaculture sector
Activity name	Delivery of Action Plans for the transition to Inclusive and Circular Economy in the aquaculture sector
Activity number	Activity 3.2
Partner in charge (author)	University of Patras
Partners involved	-



Document history

Versions	Date	Document status	Delivered by
Version 1.0	30/04/2025	Draft	University of Patras – Konstantina Marousi, Thanasis Koukounaris
Version 2.0	17/06/2025	Final	University of Patras



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Abbreviations

AZA	Allocated Zones for Aquaculture
C-AZA	Circular- Allocated Zones for Aquaculture
IMTA	Integrated Multi-Trophic Aquaculture
LiRRIE	Living Responsible Research Innovation Ecosystem
RAS	Recirculating Aquaculture Systems



Executive Summary

This document presents the Common Transnational Strategy for drafting the AZA4ICE Action Plans aimed at fostering an Inclusive and Circular Economy in the Euro-Mediterranean aquaculture sector. The Strategy outlines a structured, participatory approach for the development of regional, multi-stakeholder-driven Action Plans that integrate circular aquaculture practices. It draws on the insights and methodologies developed through the project's Living Responsible Research Innovation Ecosystems (LiRRIEs), ensuring the inclusion of diverse stakeholders and alignment with local needs. The Strategy emphasizes transferability and scalability, offering a flexible framework that can be adapted to other regions and sectors. Key outcomes include a well-defined methodology, effective stakeholder engagement, and mechanisms for long-term implementation and sustainability of the Action Plans. This document serves as a practical guide for stakeholders involved in the transition to a sustainable, circular aquaculture system across the Euro-Mediterranean region and beyond.



Introduction

The transition to an Inclusive and Circular Economy in the aquaculture sector is essential for ensuring environmental sustainability, economic resilience, and social inclusiveness in the Euro-Mediterranean region. However, achieving this transition presents significant challenges, including regulatory fragmentation, resource limitations, and the need for cross-sectoral collaboration. Addressing these challenges requires a structured and coordinated approach, and this is precisely what AZA4ICE project aims to provide. This document presents a Common Transnational Strategy to guide project partners and key stakeholders in developing their local/regional AZA4ICE Action Plans. The Action Plans will serve as roadmaps for implementing circular practices in aquaculture in the area, valorising the results of the AZA4ICE methodology testing actions in the 8 pilot areas and the multi-participatory co-creative work carried out in the Living Responsible Research Innovation Ecosystems (LiRRIEs).

Purpose of the document

The purpose of this Strategy is to outline a structured approach for drafting the local/regional AZA4ICE Action Plans by detailing:

- ✓ The steps to be followed in the drafting process.
- ✓ The actors involved, their roles, and their interactions before and after drafting.
- ✓ Methods to ensure inclusiveness, co-creation, and successful Action Plan development.
- ✓ The transferability of the strategy to different regional contexts.

Scope and objectives

This Strategy applies to all project partners and their stakeholders engaged in the project activities and in general in the aquaculture sustainability efforts across the Euro-Mediterranean region. It aims to provide a coherent and replicable framework for drafting the local/regional AZA4ICE Action Plans that support the transition to an Inclusive and Circular Economy in aquaculture. By fostering multi-stakeholder collaboration through the participatory approaches in LiRRIEs, the strategy ensures that diverse perspectives are integrated into the planning process. Additionally, it emphasizes the importance of aligning the AZA4ICE Action Plans with regional and EU policy frameworks to enhance their relevance and impact. Beyond guiding the drafting process, this Strategy also focuses on ensuring that the proposed circular solutions are scalable and transferable, allowing for their broader application across



different regional contexts and contributing to long-term sustainability in the sector.

Target audience (who will use this strategy)

This document is designed for a wide range of stakeholders involved in the transition to an Inclusive and Circular Economy in the aquaculture sector. Primarily it is aimed at AZA4ICE project partners who are responsible for leading the development of the project's local/regional Action Plans. Additionally, it serves policy and regulatory bodies shaping sustainability policies within the sector, as they play a crucial role in creating the enabling environment for circular economy practices. The private sector and in particular aquaculture industry stakeholders - including producers, processors and technology providers - are also key users of this strategy, since they are directly involved in implementing sustainable practices. Furthermore, researchers and NGOs with expertise in circular economy principles and aquaculture sustainability are encouraged to engage with the strategy to ensure that the AZA4ICE Action Plans reflect the latest knowledge, scientific achievements and best practices. In few words, the target audience is the 5-Helix stakeholders, already identified and invited to be engaged in the LiRRIEs, which have been providing the participatory framework for stakeholder engagement in the project.

The development of the Strategy is closely linked to the LiRRIE phases and leverages the work carried out in the LiRRIE events.



Framework for the Action Plans

The AZA4ICE Action Plans are the core outputs of the project, representing the concrete steps that will drive the transition to a more Inclusive and Circular Economy within the aquaculture sector in the Euro-Mediterranean region. These Action Plans will serve as detailed, region-specific roadmaps for implementing circular practices, with an emphasis on sustainability, economic resilience, and social inclusiveness. In addition to addressing local needs, the present Common Transnational Strategy used to develop these Action Plans has high transferability potential, meaning it can be adapted and applied across the entire Euro-Mediterranean region, ensuring a harmonized and impactful approach to circular economy in aquaculture.

When drafting the Action Plans, pilot results from the implementation of the AZAA4ICE methodology, and especially the C-AZA, will play a crucial role. Specific attention will be paid in the Action Plans for the effective use and management of these high-potential zones within the pilot areas. The Plans will also account for the adoption of legal and licensing frameworks that are essential for integrating circular aquaculture into the broader regulatory environment.

Furthermore, the Action Plans will focus on promoting innovative circular production models, such as Integrated Multitrophic Aquaculture (IMTA) and Recirculating Aquaculture Systems (RAS). These models are integral to achieving sustainability in aquaculture, allowing for more efficient use of resources and reducing environmental impacts. The plans will also encourage the adoption of circular business practices, such as aquaculture waste management and reduction, nets' reuse, business symbiosis, reducing plastic use, and facilitating business development to foster a sustainable aquaculture economy.

Lastly, the Action Plans will be aligned with wider relevant EU Strategies, Directives, and Smart Specialization Strategies (S3), ensuring that they contribute to broader regional and EU-level sustainability goals.

Definition of an Action Plan in the project context

In the context of the AZA4ICE project, an Action Plan is a strategic document that outlines the key actions, stakeholders, timelines, and resources required to transition to a circular economy within the aquaculture sector. The Plans will be developed through the co-creative, participatory process of LiRRIEs, involving stakeholders from diverse backgrounds, ensuring that they address the specific challenges and opportunities of each region while maintaining a common focus on circular economy principles.



Core principles

The Action Plans will be structured around several core principles that guide the transition to an Inclusive and Circular Economy. These principles include:

- *Sustainability*: Ensuring that aquaculture practices contribute to environmental protection, resource efficiency, and the long-term viability of the sector.
- *Inclusiveness*: Engaging a broad range of stakeholders in the planning process, ensuring that the voices of marginalized or underrepresented groups are heard, and promoting social equity in the transition.
- *Innovation*: Encouraging the use of new technologies, practices, and business models that contribute to circularity and sustainability in aquaculture.
- *Collaboration*: Fostering partnerships across different sectors, regions, and scales to build synergies and ensure effective implementation of circular economy practices.

Expected outcomes

The development and implementation of the Action Plans will lead to several key outcomes. Each participating region will have a clear and actionable roadmap that outlines the concrete steps needed to achieve circular economy in aquaculture. These plans will help identify region-specific challenges and opportunities, guiding the development of targeted actions and solutions. Additionally, the project will foster enhanced collaboration and knowledge exchange between stakeholders across the Euro-Mediterranean region, creating a network of circular economy practitioners within the aquaculture sector. The Action Plans will also result in the creation of scalable and transferable solutions, enabling their adoption beyond the participating regions and contributing to a broader shift toward circular economy practices in aquaculture at a broader scale.



Interactions and Coordination Mechanisms

The successful development and implementation of the Action Plans require effective coordination, continuous stakeholder engagement, and structured interactions at different phases of the process. These mechanisms ensure that the plans are well-informed, inclusive, and aligned with real needs while facilitating knowledge-sharing and long-term sustainability. The coordination mechanisms can be divided into two key stages: ***before drafting and after drafting the Action Plans.***

Before Drafting: Data Sharing, Needs Assessment and Stakeholder Engagement

Prior to drafting the Action Plans, gathering relevant data, assessing regional needs, and engaging stakeholders are critical steps to ensure that the Plans are based on concrete evidence and practical requirements. These interactions will be facilitated primarily through the LiRRIEs. The main coordination activities include:

- ✓ *Data Collection and Sharing:* Gathering insights from pilot activities, scientific research, regulatory frameworks, and best practices in circular aquaculture. This data will inform decision-making and help define priority areas for action.
- ✓ *Needs Assessment and Gap Analysis:* Identifying region-specific challenges, opportunities, and regulatory barriers that must be addressed within each Action Plan.
- ✓ *Stakeholder Consultations:* Engaging aquaculture producers, policy-makers, researchers, technology providers, and local communities to ensure that diverse perspectives are considered from the outset.
- ✓ *Consensus-Building Events:* Facilitating discussions through the LiRRIE events to align stakeholders on key objectives and strategic priorities for the Action Plans.

These pre-drafting interactions will enhance inclusivity and co-ownership, ensuring that the final Action Plans reflect the shared vision of all relevant actors.



After Drafting: Review Cycles, Capacity-Building and Dissemination

Once the Action Plans have been drafted, a set of post-drafting interactions will ensure their refinement, successful adoption, and long-term implementation. These mechanisms will focus on validating the plans, equipping stakeholders for implementation, and promoting knowledge transfer beyond the project consortium. The key coordination activities include:

- ✓ *Review and Validation Cycles:* Organizing peer reviews and expert consultations to refine the Action Plans, ensuring feasibility, clarity, and alignment with regulatory and market conditions.
- ✓ *Capacity-Building Initiatives:* Delivering training programs, technical workshops, and knowledge exchange sessions to help stakeholders acquire the skills needed for implementation.
- ✓ *Dissemination and Knowledge Transfer:* Sharing the finalized Action Plans through regional and international networks, policy dialogues, and public events to promote uptake and replication in other regions.
- ✓ *Ongoing Stakeholder Engagement:* Keeping the LiRRIEs active beyond the drafting phase to support continuous collaboration, feedback collection, and adaptive improvements.



Transferability and Scalability Potential

The Common Transnational Strategy and the resulting Action Plans are designed to be adaptable and applicable beyond the initial pilot regions, ensuring a broader impact across the Euro-Mediterranean aquaculture sector and beyond. The transferability and scalability potential of these outputs lie in their ability to be replicated in different geographical, regulatory, and operational contexts while maintaining their core principles of inclusivity, circularity and sustainability.

Transferability: Applying the Strategy to Other Regions and Sectors

One of the primary objectives of this strategy is to enable other territories and stakeholders to adopt similar approaches when developing Action Plans for circular aquaculture or related sectors. Several factors contribute to its transferability:

- **Structured, Yet Flexible Framework:** The strategy provides a clear methodology that can be adapted to the specific needs and conditions of different regions while maintaining the essential steps and guiding principles.
- **LiRRIE Model as a Scalable Participatory Tool:** The LiRRIE methodology ensures stakeholder involvement and co-creation, making it a versatile mechanism that can be applied in other regions and policy domains.
- **Alignment with EU Strategies and Policies:** By integrating EU directives, Sustainable Blue Economy principles, and Smart Specialization Strategies (S3), the strategy ensures relevance and coherence with broader policy frameworks, making it easier for other regions to adopt.
- **Knowledge Exchange and Best Practices:** The documentation of lessons learned, case studies, and successful implementation stories will provide concrete examples for other stakeholders looking to replicate or adapt the approach.

By leveraging these elements, the Strategy and Action Plans can serve as a reference for other projects, local authorities, and aquaculture stakeholders aiming to implement circular economy solutions in their regions.



Scalability: Expanding the Impact of Circular Aquaculture Practices

Beyond direct replication, the scalability of the approach ensures that circular economy principles in aquaculture can be progressively expanded and integrated into broader strategies. Scalability will be achieved through:

- **Integration into Regional and National Policies:** Encouraging policy-makers to embed circular aquaculture strategies into territorial development plans and regulatory frameworks, ensuring long-term support and institutional backing.
- **Expansion to New Geographic Areas:** Encouraging uptake in additional coastal and inland aquaculture zones, including those not directly involved in the project, by demonstrating the benefits of circular practices.
- **Industry-Wide Adoption and Business Engagement:** Promoting circular aquaculture models, such as Integrated Multitrophic Aquaculture (IMTA) and Recirculating Aquaculture Systems (RAS), among private sector actors and investors to encourage market-driven scalability.
- **Cross-Sectoral Synergies:** Applying circular economy principles to related sectors to maximize environmental and economic benefits.
- **Technology and Innovation Diffusion:** Facilitating the development and deployment of innovative circular aquaculture technologies, such as waste valorization systems and bio-based packaging, through cross-sector collaboration and investment.

By ensuring both transferability and scalability, this Strategy will contribute to a wider systemic shift towards sustainable, inclusive, and circular aquaculture practices, reinforcing the long-term impact of the project across the Euro-Mediterranean region and beyond.



Step-by-Step Strategy for Drafting Action Plans

The development of an Action Plan is a demanding process which requires a structured and participatory methodology, a strategy. The strategy must ensure that all relevant stakeholders are actively involved throughout the process and that the Action Plan is fully aligned to the state of the art and the current policy and regulatory framework.

In the case of AZA4ICE, the co-creation of the Common Transnational Strategy and the co-development of the AZA4ICE Action Plans are integral part of the multistakeholder and participatory methodology of **LiRRIEs**. The LiRRIE methodology has been designed to facilitate co-creation and knowledge exchange, while it provides the space and the means for stakeholders' dialogue and collection of feedback. Thus, the step-by-step Strategy described in this section and the specific actions described in each step have been integrated to the LiRRIE methodology by the design phase of the methodology. For this reason, in each of the following steps there is a clear reference to the corresponding phase of the LiRRIE methodology, through which the AZA4ICE partners reached the step's result.

The Common Transnational Strategy consists of 6 steps, the main points of which are summarized in Figure 1. The Strategy is accompanied by the template for the AZA4ICE Action Plans, which can be found in Annex I of this document. This template will serve as a common tool to be used by the Project Partners during the collaborative work with the stakeholders in the LiRRIE events to co-develop the Action Plans.

A key priority in developing this Common Transnational Strategy was to ensure its replicability and transferability. The aim was to create a strategy that could serve as a practical guide for other projects and stakeholders interested in drafting Action Plans, whether in the aquaculture sector or other relevant fields. This focus on transferability aligns fully with the overarching principle of the AZA4IC project, which emphasizes making all outputs and deliverables adaptable and widely applicable. The same principle was carefully integrated into the development of the LiRRIE methodology, ensuring that partners and stakeholders beyond the project consortium can effectively utilize both resources. By having access to the LiRRIE methodology and this Common Transnational Strategy, external actors can establish their own multi-stakeholder, highly participatory, and collaborative environments to co-develop Action Plans in their areas of interest. Both documents provide a clear and detailed description of all phases and steps, ensuring the effective implementation of the methodology. Ultimately, this structured approach facilitates the creation of inclusive Action Plans that reflect current needs, integrate diverse perspectives, and leave no stakeholder behind.



Step 1: Stakeholder Mapping & Engagement

Identify and map relevant stakeholders
Methodology for participatory engagement
Stakeholders engagement as members of LiRRIE forum

Step 2: Analysis of current Needs and Challenges

Identify key challenges and opportunities
Collect baseline data
Map legal and regulatory context and licensing processes
Draft LiRRIE vision

Step 3: Cross-fertilisation of ideas and data

Final LiRRIE vision
Increase stakeholders capacity
Exchange about the AZA4ICE methodology and the C-AZA results

Step 4: Co-Creation of Action Plan Drafts

Presentation and exchange on C-AZA results
Discussion and finalise the common transnational Strategy
Structuring and drafting the Action Plan

Step 5: Finalisation and Validation

Stakeholder review and feedback mechanisms
Open public consultation
Final version of the Action Plan

Step 5: Monitoring and Feedback Mechanisms

Monitoring and evaluation mechanisms
Ensuring transferability and scalability

Figure 1- Steps of the Common Transnational Strategy



Step 1: Stakeholder Mapping and Engagement

The first step in developing the Action Plans involves the **mapping** of the relevant stakeholders within each region with interest and appropriate skills to participate in the LiRRIE, ensuring the representation of the 5-Helix. The main types of stakeholders to be targeted are public sector, policy makers, SMEs/clusters/networks, professional associations including clusters/networks, business support organisations, NGOs, citizens' associations, environmental agencies, research and academia. These stakeholders should have time, resources and interest to participate in LiRRIE. (*Linkage to LiRRIE methodology: Phase 1-Identify and Map, Step 3-Map Stakeholders*)

Then, the project Partners address an open invitation as well as targeted invitations to the stakeholders inviting them to become members of the LiRRIE forum and thus **engage** them in the process. (*Linkage to LiRRIE methodology: Phase 2-Motivate and Connect*)

Stakeholder mapping and engagement help ensure that the Action Plans reflect the diverse needs and perspectives of all involved parties.

Step 2: Analysis of current Needs and Challenges

In this step, a thorough analysis of **challenges, needs, barriers and opportunities** related to Circular Economy in the aquaculture sector is conducted. This identification process is carried out based on partners' experience, work done in AZA4ICE completed activities, knowledge gained in previous projects, desk research, stakeholders' consultations, interviews with PAs and SMEs and brainstorming events, etc. Then, the project Partners define a user driven problem/opportunity to be tackled by the Action Plan. The problem/opportunity leads the Partners to draft the LiRRIE vision. (*Linkage to LiRRIE methodology: Phase 1-Identify and Map, Step 2- identify common problem or opportunity and draft LiRRIE vision*)

The analysis also includes reviewing **current legal and regulatory context and licensing processes** that frame aquaculture development activities and relevant innovative circular production systems.

Last but not least, the analysis includes the **current status of aquaculture businesses** in the region. This data can be collected via the application of the BLUEfasma circularity self-assessment tool, which measures stakeholders' circularity. The tool is applicable for SMEs and companies acting in the any stage of the value chain of the aquaculture sector. (*Linkage to LiRRIE methodology: Phase 3-Frame and Cross-fertilise, Step 3-Cross-fertilise ideas and data*)



Step 3: Cross-fertilisation of ideas and data

Step 3 involves the cross-fertilisation of ideas and data among the LiRRIE members under the coordination and guidance of the project Partners with the ultimate scope to co-create the Action Plan drafts. Through the 1st and the 2nd LiRRIE events stakeholders collaboratively work for the preparation of the Action Plans.

In particular, during the events, the LiRRIE members fine-tune LiRRIE vision and shape its final version. The project Partners present the **AZA4ICE methodology** for testing and the expected results, emphasizing on the Allocated Zones for Circular Aquaculture, the **C-AZA results**, in the pilot area and the potential of the circular aquaculture practices like IMTA. The stakeholders provide data on the AZA4ICE pilot area. (*Linkage to LiRRIE methodology: Phase 3-Frame and Cross-fertilise, Step 3-Cross-fertilise ideas and data*)

Also, through educational, training and mentoring sessions, the **capacity** of the stakeholders is increased; thus facilitating the co-development of the AZA4ICE Action Plans. (*Linkage to LiRRIE methodology: Phase 4-Deepen*)

Step 4: Co-Creation of Action Plan Drafts

In this step, the first version of the Action Plan is collaboratively drafted during the 3rd LiRRIE event. (*Linkage to LiRRIE methodology: Phase 5-Co-decide and Co-construct*)

The organisation of the 3rd LiRRIE event is the core of the LiRRIE, since in this event the co-decision of two main project outputs, the C-AZA results and the AZA4ICE Action Plan, takes place.

The 3rd LiRRIE event begins with the **presentation of C-AZA results**, as these are produced from the implementation of the AZA4ICE methodology in the pilot area. After the results presentation, project Partners launches a discussion among stakeholders facilitating them to express their opinion and objections (if any) on the C-AZA results.

Next, the project Partners present the **common transnational Strategy for drafting the AZA4ICE Action Plans**, as it is drafted by the AZA4ICE partnership. A round of discussion follows with the active participation of stakeholders. Their suggestions and comments are being incorporated in the Strategy and thus the final version is co-decided.

After the collaborative work carried out by the LiRRIE members on the Strategy, the co-development of **the first version of the AZA4ICE Action Plan** ensues. LiRRIE cumulative knowledge and experience gained by the analysis of the current territorial needs; the legislative and licensing framework; the educational, training,



mentoring events; discussions and exchanges between the members and external sources; best practices from other areas inside and outside Euro-MED; are valorised for drafting the AZA4ICE Action Plan for the transition to Inclusive and Circular Economy in aquaculture sector. Business opportunities and the society's perception should be also incorporated.

Step 5: Finalisation and Validation

After the initial drafts are developed, a final round of validation and consultation is held. Project Partners launch an **open public consultation** to get feedback for the final delivery of the Action Plans. The consultation can be done in a digital mode or to be accompanied with one more face-to-face (4th LiRRIE event). The validation of the Plans can also involve reviewing the plans with a broader group of stakeholders, including external experts and policy-makers, to ensure that the Action Plans are comprehensive, feasible, and aligned with EU sustainability objectives. The **final Action Plans** are refined based on feedback from this validation process and then finalized for implementation. (*Linkage to LiRRIE methodology: Phase 6-Evaluate and Adjust and Phase 7-Intensify and Disseminate*)

Step 6: Monitoring and Feedback Mechanisms

To ensure the successful implementation of the Action Plans, continuous monitoring and feedback mechanisms should be established. These will track progress, assess the effectiveness of implemented actions, and provide opportunities for adjustments and improvements. A good practice is that LiRRIEs will continue to serve as key spaces for ongoing dialogue and collaboration among stakeholders throughout the implementation phase of the Action Plans.



Conclusion and Recommendations

The transition towards an Inclusive and Circular Economy in the aquaculture sector presents both opportunities and challenges, particularly in the Euro-Mediterranean region, where environmental, economic, and regulatory conditions vary significantly. The Common Transnational Strategy for drafting the Action Plans has been designed to provide a structured yet adaptable framework, ensuring the development of regional, multi-stakeholder-driven Action Plans aimed at fostering sustainable and circular aquaculture practices.

The Strategy's key outcomes include the establishment of a well-defined methodology that integrates stakeholder engagement, policy alignment, and circular business models into the Action Plan development process. Additionally, the LiRRIE framework has proven to be an effective participatory tool, enabling inclusiveness, co-creation, and knowledge exchange among stakeholders. A strong emphasis on transferability and scalability ensures that the strategy is applicable to different regions and relevant for a broad range of stakeholders, from policymakers to industry actors. Finally, the strategy indicates an implementation and follow-up approach, which includes mechanisms for monitoring, evaluation, and the long-term sustainability of the Action Plans. Despite these achievements, the successful adoption and long-term impact of circular aquaculture practices require continued efforts and commitment. Based on the project's findings, the following recommendations are proposed:

1. Strengthening Policy Support and Regulatory Integration

To ensure that circular aquaculture principles are widely adopted, it is essential to:

- Advocate for the inclusion of circular aquaculture models (such as IMTA and RAS) in regional and national policies.
- Promote harmonization of legal and licensing frameworks to facilitate the implementation of innovative circular practices.
- Encourage policymakers to integrate allocated zones for aquaculture with circular economy principles, ensuring responsible resource management.

2. Enhancing Stakeholder Engagement and Capacity-Building

The effectiveness of Action Plans depends on the active participation and commitment of diverse stakeholders. To achieve this:

- Continue fostering collaborative networks through the LiRRIEs and other participatory platforms.
- Organize training programs, workshops, and knowledge exchange



initiatives to equip stakeholders with the necessary skills for implementation.

- Support the creation of regional and transnational alliances, strengthening cooperation across the Euro-Mediterranean region.

3. Promoting Financial and Market-Based Incentives

For circular aquaculture practices to be widely adopted, financial and market-driven mechanisms must be in place. Recommended actions include:

- Facilitating access to funding from EU programs, national funds, and private investments to support the transition.
- Encouraging public-private partnerships (PPPs) to develop circular aquaculture solutions.
- Promoting market incentives for sustainable products, including eco-labeling and certification schemes for circular aquaculture products.

4. Ensuring Long-Term Monitoring and Knowledge Sharing

The impact of the Action Plans must be continuously evaluated and adapted to ensure long-term sustainability. This can be achieved by:

- Establishing a monitoring and evaluation framework to track progress and measure the effectiveness of implemented actions.
- Strengthening data collection and information-sharing mechanisms to support decision-making and adaptive management.
- Leveraging digital platforms and networks to maintain knowledge exchange and dissemination beyond the project's lifespan.



Annexes

Annex 1 – Template for Action Plans Option #1

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