

ASTRAL

All Atlantic Ocean Sustainable, ProfiTable and Resilient AquacuLture

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D1.1. Stakeholder Mapping and Value network

in the Atlantic Area



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1 Summary

This document describes ASTRAL's mapping activities of EU and non-EU Atlantic stakeholders, including identification, assessment and classification. In order to prepare this first draft, all ASTRAL project partners were consulted to identify the main stakeholders, primarily in the ASTRAL partner countries (Argentina, Brazil, France, Ireland, Nigeria, Norway, Portugal, Spain, South Africa and the United Kingdom), but also including an effort to involve stakeholders from other relevant countries to the Belém Statement¹. This is a dynamic process and this report presents the initial approach. Additional information is expected to be added throughout the project, as new stakeholders will gradually join the Atlantic Aquaculture Alliance.

¹ https://ec.europa.eu/research/iscp/pdf/belem_statement_2017_en.pdf



2 Introduction

The ASTRAL project focuses on integrated multi-trophic aquaculture (IMTA) farming and defines, supports and promotes this type of sustainable aquaculture production in the Atlantic area. Its main goal is to develop new, sustainable, profitable and resilient value chains for IMTA production within the framework of existing, emerging and potential Atlantic markets. In addition, it aims to build an open and interactive platform to discuss and improve IMTA production systems. Thereby, it intends to bring together all actors and players implicated in the production chain related to sustainable aquaculture. We emphasize that stakeholder identification is a complex and continuous process, and it aims to represent all sectors involved in the aquaculture production chain. The purpose of the stakeholder mapping is to describe the building of the ASTRAL project stakeholders' network and the general approach that will be taken for their involvement and engagement. In this context, we identified five main groups of stakeholders (Figure 1):

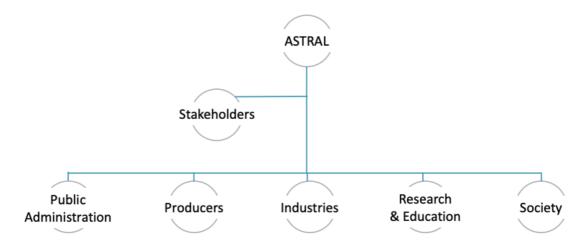


Figure 1. Main stakeholder groups identified by partners in the ASTRAL project

- Public Administration: composed of national/regional and local actors responsible for policy, the legal and official framework for aquaculture (aquaculture licenses and regulation), and assessment and control of environmental impacts.
- 2) Aquaculture producers: those who are directly or indirectly interested in the new production system, IMTA; with a view to environmentally friendly production. But also, other producers that might be interested in IMTA divers' co-products, such as, biotechnology industry, cosmetics, healthcare, nutrition, others.
- Industries related to Aquaculture: represented by suppliers like feed factories, food processing, equipment and service developers.

- 4) Research and education centres: stakeholders are responsible for the environmental matters and development of research applied to the production sector and for training & qualification courses to be offered to different sectors of the society.
- 5) **Society in general**: represented by local communities that are directly involved with aquaculture activity, consumers and NGOs.

Within the main stakeholder groups, sub-groups were created in order to be more informative during mapping activities, as shown in Figure 2.

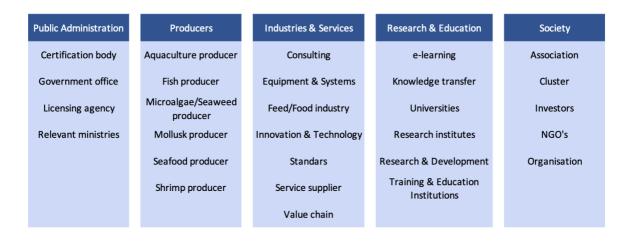


Figure 2. Categorization of stakeholders in the ASTRAL project

3 Interconnection with other Deliverables, Tasks & Project Activities

As previously briefly mentioned, ASTRAL aims to develop new, sustainable, profitable and resilient value chains for IMTA production focusing on Atlantic markets; providing a collaborative ecosystem to bring together and connect stakeholders in order to promote data exchange, knowledge sharing and business opportunities. The identification of stakeholders in the ASTRAL project will help the consortium partners to establish collaborations, build-up a strong network and conduct dissemination, communication and exploitation actions aimed at the most relevant stakeholders in the project context. Hence, several Deliverables and activities will be strongly or somehow interconnected with this D1.1. The list of stakeholders will be exploited within the project and continuously updated and reviewed. New members will be added as a result of the various activities proposed in the project such as meetings, workshops, courses, etc., as well as the communication, dissemination and exploitation



of the results. Therefore, the final list of stakeholders will include links to WPs 2 (Case studies in different countries), 3 (IoT development), 4 (Circularity and zero waste), 5 (Climate change), 6 (Business development) and 7 (Communication and dissemination).

3.1 Other Deliverables

The list of stakeholders will be exploited within the project whenever there is a need to gather and/or communicate with relevant actors, more specifically:

- WP2 will organise workshops gathering stakeholders growing new species aiming to assess new cultivation opportunities within an IMTA context. With the knowledge gathered, a "Species for the future" catalogue (D2.7) will be delivered with the information on the best species to be cultivated within partner countries & regions.
- 2) WP3 will produce a Technology User Guide (D3.6) for training courses and apprenticeships. The target audience will be , but not only, those included within the Research & Education stakeholder group and industry.
- 3) WP6 will deliver a Business Model (D6.3) towards feasible and profitable circular aquaculture management and operation. A review and selection of potentially interested stakeholders will be conducted to ensure an efficient and successful implementation.

3.2 Other Tasks & Activities

Stakeholders will be invited to join the Aquaculture Helix platform (Task 1.3.) which will act as a collaborative platform, and to participate in several events and workshops (within WP1, WP2, WP3, WP4, WP5, WP6 and WP7) to discuss relevant opportunities and challenges, some are listed below:

- 1) Alternatives for integrated production of fish, molluscs, crustaceans and macroalgae;
- 2) Best practices for IMTA cultivation (WP3, WP4);
- 3) Main bottlenecks observed by the production sector in different countries;
- 4) Climate change impact on Atlantic coastal ecosystems (WP5);
- 5) What species can be integrated in each region, aiming at economic viability (WP2, WP6);
- 6) Establish contacts among stakeholders, providing new business opportunities (WP6).

In addition, WP7 will disseminate information on IMTA crops to society in general and, specifically, to interested producers, investors and the industry. This study aims to establish the bases for the dissemination of an alternative way of producing safe and high-quality seafood that guarantees both economic and environmental viability.



4 Stakeholder Mapping Process

The stakeholder mapping process strategy was built considering:

- 1) Contribution of the consortium partners to the stakeholders mapping.
- 2) Stakeholders' needs, interest and influence on the ASTRAL project and/or on each WP.
- 3) Relevant groups of stakeholders.
- 4) Levels of the stakeholders' groups (local, regional, national, EU, international).

5) Personal data protection policy for the handling of private information of the stakeholders (ASTRAL deliverable D.9.2)

4.1 Steps of the mapping process

Each partner involved in the ASTRAL project was invited to fill out a spreadsheet with stakeholders' information (namely organization name & website, if applicable) considering their own professional network. All individual mappings were sent to the task leader, who gathered all the inputs, checked the information provided and ensured that there were no recurrences in the list. The compiled list of stakeholders can be found in Annex 1. This list is a first attempt to map stakeholders and will be continuously updated to ensure a wide and balanced coverage within each group and each geographies.

4.2 Stakeholders Classification

Taking into account the previous stakeholder categorization, eleven specific sectors were identified in our mapping.

- 1) Licensing agency (environmental, concessions);
- 2) Aquaculture producers;
- 3) Equipment/Service supplier;
- 4) Feed/Food industry;
- 5) Association/Organization;
- 6) Ministry (Environment);
- Related peripheric/non-food activities (such as industry related to microalgae for biofuel, wastewater treatment);
- 8) R&D Institution and Training Education (including capacity building);
- 9) Investors (existing and potential);
- 10) Certification body (food safety, ecolabel);
- 11) Other.



4.3 Geographic Representation

The ASTRAL project includes representatives from Europe (Norway, Ireland, Scotland, France, Spain, and Portugal), South America (Brazil and Argentina), and Africa (Nigeria and South Africa). The composition of stakeholders, however, is meant to include a wide geographic range of actors who work within the Atlantic Area, namely countries within the Belém and Galway statement but also other representatives of the Atlantic region and Europe, as well as representatives of other Horizon 2020 projects (AquaVitae, AtlantEco, among others).

This first attempt to map stakeholders included 32 countries: 18 from Europe (56%), 1 from North America (3%), 5 from South America (16%), 3 from Central America (9%) and 5 from Africa (16%).

The basis for this stakeholder network is the ASTRAL consortium, consisting of the following partners (Figure 3):

- CONICET National Council of Scientific and Technical Research (Argentina)
- FURG Federal University of Rio Grande (Brazil)
- MOP M&O Partners Representacoes Ltda (Brazil)
- BIO BiOceanOr (France)
- EGM Easy Global Market (France)
- PMBA Pôle Mer Bretagne Atlantique (France)
- MI Marine Institute (Ireland)
- NIOMR Nigerian Institute for Oceanography and Marine Research (Nigeria)
- NORCE Norwegian Research Centre (Norway)
- AIR Atlantic International Research Centre (Portugal)
- CSIR Council for Scientific and Industrial Research South Africa (South Africa)
- UCT University of Cape Town (South Africa)
- VIK Viking Aquaculture (South Africa)
- LEITAT LEITAT Technological Center (Spain)
- CHX CrowdHelix (United Kingdom)
- SAMS The Scottish Association for Marine Science (United Kingdom)

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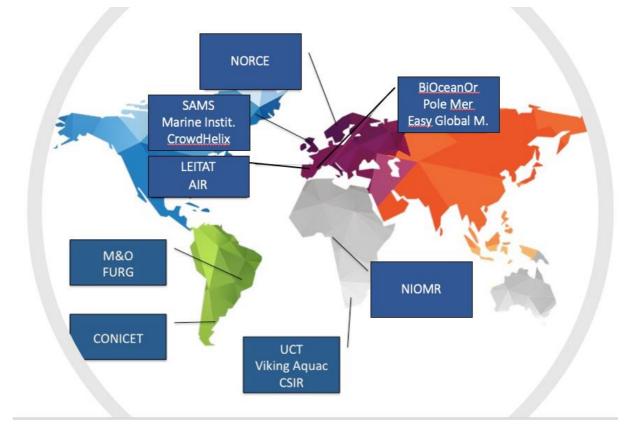


Figure 3. Partners from different countries in the ASTRAL project

5 Value Network in the Atlantic Region

The Atlantic region encompasses a wide range of geographies with different climates, culture and needs & challenges. By bringing together all the components of the production chain related to sustainable aquaculture, this mapping exercise will allow us a better understanding about all the key stakeholders in different sectors and regions in the Atlantic and how one can support the other. This mapping will explore the synergies, challenges and most importantly the benefits that ASTRAL can offer and how it can impact on building a more sustainable production of aquatic food and, more specifically, to foster IMTA production systems, together with promoting food and nutrition security in the Atlantic region.

5.1 Value proposition of ASTRAL

The overall objective of ASTRAL is to develop new, sustainable, profitable and resilient value chains for IMTA production within the framework of existing, emerging and potential Atlantic markets. Consequently, contributing to the production of sustainable resources for food security and economic



growth. ASTRAL will promote the implementation of IMTA practices through its technical developments, its work focusing on circularity and zero waste, and the project structure based on hands-on activities in the IMTA labs. The motivation is to promote sustainable seafood production by supporting companies to establish promising business cases, to train young professionals and empower women, and spread the word of valuing IMTA practices to authorities and governments, through exchange of contacts for collaboration or cooperation or even investment, know-how and capacity building. In particular, the stakeholders subscribed to the ASTRAL Helix will benefit from the wide set of resources made available through the project, not only limited to the project's results (such as be updated with new technology and new species for culture) but also opportunities to network and participate in workshops and IMTA courses that will be offered (namely, technical workshops, apprenticeships and hands-on training courses at IMTA sites), allowing an efficient entry into the benefits and state-of-the-art practices in IMTA and a collection of major players in the field.

5.2 Stakeholders Assessment

ASTRAL's network will provide a platform for co-creating and co-developing solutions with the stakeholders for collective impact and contribute to an integrated informed policy-making process. Stakeholders will be informed and invited to participate in the discussion since the early stages of the ASTRAL's IMTA value chain and technology developments in order to address their societal & technical needs in different regions of the Atlantic. We have previously identified key sectors to be initially invited to be part of the ASTRAL network, in order to allow for a replication of proposed practices in other regions and beyond the ASTRAL consortium. Although stakeholders will not have a decisive influence on the well-defined technical objectives of the ASTRAL project, their participation, acknowledgement of activities and results and input into the ongoing discussions are vital to enable a wider implementation of the practices proposed through ASTRAL. This rationale is discussed briefly for each of the identified stakeholder groups and subgroups:

1) Licensing agency (environmental, concessions)

It is essential to engage key local authorities and licensing agencies with the developments of ASTRAL, since the beginning and along with the project, to improve the perception of licensing-relevant issues, and to ensure awareness of the current state-of-the-art and potentialities. This stakeholder group is essential not only for easing possible obstacles for IMTA practices obtaining the required permissions but also for always prioritizing sustainable aquaculture practices to come.



2) Aquaculture producer

The project will show that an IMTA system, despite its complexity and cost, provides better and healthier food as well as economic benefits. The products diversification and the reduction in the effluents emission can be a positive strategy for producers in economic terms, as well as obtaining bio-products to the pharmaceutical, cosmetics and biotechnological industry. The uniqueness of ASTRAL is that there are four IMTA labs demonstrating state-of-the-art practices and their improvement in different regions of the Atlantic, thus testing its feasibility within different environmental conditions. It is expected that this project delivers blueprints in response to the needs and challenges of different geographic realities.

3) Equipment / Service supplier

It is of mutual interest of suppliers and (potential) clients that are both up-to-date regarding the current needs of the client (in this case the IMTA practitioner), and the economic potential to address these needs. As opposed to some other sectors, any investment into innovation and technical improvement has to be carefully weighed against the capacity of production valuation. By bringing together both sides, the suppliers have a more solid baseline for shaping their offer, and the IMTA practitioners may get sooner access to affordable products and services.

4) Feed / Food industry

While the environmental footprint of feed and food products attains increasing attention for the product image and might soon be relevant for regulations or concessions, there is usually a tangible economic benefit related to IMTA practices. This circumstance and the updated insight through discussions and exchange with other stakeholders will accelerate the acceptance to adapt production practices and reduce concerns about potential risks for the security of supply.

5) Association / Organization

Both aquaculture associations and organisations related to adjacent sectors may benefit from the aquaculture alliance by increasing their impact on the sector, and by enabling new opportunities for their associates, respectively. In the case of aquaculture associations, capacity building and dissemination measures in line with ASTRAL can bring value to their network and position them as pioneering the change. For adjacent sectors, in particular, the fisheries associations should be involved, in order to contribute to their understanding that sustainable aquaculture practices will come to fill gaps and not compete with fishermen practices. In some instances, they may even find opportunities to be involved in the new commercial sector.



6) Ministry (environment and agriculture, food) / Government

It is important to involve governments on a ministerial level to ensure appropriate levels of support and sustainable economic policies, in line with national and international strategies and priorities. In particular, the regional and local reality of fisheries and ensuring that aquaculture will not damage local fisheries-dependent communities, is a concern to be met on the ministry level. This stakeholder group is essential to help define IMTA's common framework at an international level, contextualising it at a local, regional and national level.

7) Related peripheric / non-food activities

Aquaculture effluents and waste by-products can be a source of raw materials for different industries, such as biofuel and biofertilizer production. There may be a wide range of activities showing similarities concerning technical, administrational or societal challenges, and/or with capacities or strategies that are of interest to the topics in ASTRAL. Identified case-by-case by specific project partners, entities involved in such activities will be invited, according to the mutual benefit expected from involvement.

8) R&D Institution and Training & Education (including capacity building)

The driving force for increasing attention to IMTA has been the Research & Innovation community, leading to the present situation where significant know-how and assurance about practices exists, even though the industry has largely not taken up the concept so far. Due to the complexity of environmental and economic interactions, and the large number of choices for potential IMTA practices, it is vital to maintain a strong and diversified R&D portfolio in the project's ecosystem. R&D Institutions are also responsible for procedure and technological validations to assure commercialization readiness.

From the establishment of a solid base of professionals to an informed general public, it is vital to enhance the message to be spread from the ASTRAL findings to a wider audience, by relaying through local, regional and international entities specialised in training and education on all levels (from school to graduate and professional courses). Materials elaborated by ASTRAL, including scientific papers and manuals, will be of high value and easy use for a more widespread knowledge transfer and capacity building in all the ASTRAL scientific and applied aspects within classic aquaculture, IMTA, ecology and environmental matters and among others, both during and after the project.



9) Funding organizations/ investors (existing and potential)

Due to the largely untapped economic potential of IMTA, it is considered to be a highly relevant topic for drawing attention and attracting active involvement from investors. ASTRAL will validate IMTA-related technology and demonstrate that these production systems are at the end of the pipeline to leave the R&D space towards commercial success thus is important to engage with this stakeholder group to accelerate potential business cases.

10) Certification body (food safety, ecolabel)

Particularly the circular economy and zero-waste aspects of IMTA may have not only positive effects but can also be a concern for certification of food safety. From both the positive and potentially critical viewpoints, it is important to involve the relevant actors for food safety, eco labels and related certifications, in order to limit potential barriers proactively and aid consumers trust and acceptance.

11) Other

Similar to numeral 7 but without an immediate obvious link to the ASTRAL topics and activities, there may be stakeholders for which involvement in the ASTRAL ecosystem is of mutual interest. These are meant to be grouped here in order to exclude an undesirably narrow outcome.

5.3 Strategy to engage stakeholders

In this first approach building a framework for the Atlantic Aquaculture Alliance, all ASTRAL project partners were consulted to identify the main stakeholders, primarily in the ASTRAL partner countries, as mentioned earlier. In order to comply with GDPR regulations, the ASTRAL partners will make the first approach to their own contacts on the list, inviting them to join the Helix. In parallel, wider stakeholder participation will be encouraged through the below-mentioned events and the ASTRAL website contact form. Stakeholder engagement strategies will be adapted to local culture and realities.

Several participatory workshops will be organized among the ASTRAL network from the early stages of the IMTA value chain and technology developments within the project in order to address the societal needs of the key stakeholders in different Atlantic regions. These workshops will not only be multisectoral but also gender-inclusive, trans-disciplinary and multicultural. The workshops will be flexible enough to foster different alliances between the stakeholders and stimulate participatory groups beyond the workshops. To be more inclusive, all engagement activities (workshops and other



means of communication) will be in national languages. Results will be documented/reported in national language and English to be discussed with a broader community.

ASTRAL will participate in High-Level meetings to promote interest from key decision-makers and other academia and industry partners for further collaboration. Another important activity of ASTRAL is that it will involve academics, researchers, small and medium enterprises and entrepreneurs, local associations and authorities and others to participate and contribute to the capacity development of young professionals and women to promote the creation of jobs and gender equity. Finally, ASTRAL will organize social awareness activities with families and local schools. Local communities whose livelihood depend on the oceans are key to behavioural change concerning the protection of the environment and making better environmental choices. Awareness will be focused on environmental and ocean protection as well as on sustainable, circularity and zero waste food production and consumption.

5.4 Barriers and Drivers for Engagement

The stakeholder identification process is participatory and depends on the collaboration of all partners. The mapping of stakeholders does not imply that all those who were identified as such will be interested or play a significant role in the project activities and implementation. Each partner or country has a different background regarding participation in the discussion process about the new aquaculture production systems. In the specific case of Brazil, at first there was a reluctance of some actors to join the Aquaculture Helix platform, which is being overcome after further explanations about its benefits. In this sense, consistent, short and direct messages will be used with those who have or might have interest in taking part in an online community revolving around IMTA, circularity & cross-Atlantic collaboration. The Aquaculture Helix platform will be the connection among stakeholders and will play a key role in the communication and promotion of ASTRAL project's activities and outcomes.

Barriers for engagement will be different for each stakeholder group however lack of a clear message and stakeholder fatigue should be general ones. Efforts will be made to gain interest from policymakers by showing tangible benefits of IMTA systems for food and nutrition security, job creation and economic growth. Business models will need to be well structured and take into account different regional realities and needs for industry and local/regional stakeholders to be interested. Hence, ASTRAL's WP 1, 6 and 7 leaders will work together with the whole project consortium to coordinate the communication, dissemination and exploitation strategies accordingly with the specific targets and different actions. Overall, an early engagement and good understanding of each stakeholder's



motivations and needs, together with a clear communication of all the specific benefits of IMTA systems will most likely overcome barriers.

The results obtained in the case studies (WP2) carried out in Ireland, Scotland, South Africa and Brazil and the low-cost equipment developed (WP3) from this project will, likely, serve as a driver from the commercial perspective. From a socio-environmental standpoint, the improvement of the circular economy and the reduction of the ecological footprint (WP4 and 5) will certainly engender pertinent discussions within society. Awareness of climate change, ocean protection and the need for efficient and sustainable food production should be indeed the main driver for stakeholder engagement for groups beyond the general public. Showing systems and best practices that have been successful will be an important driver as well. Climate and food issues are global challenges and thus most, if not all, governments will be interested in supporting any type of food production that addresses those issues, and potentially accelerate laws and licenses accordingly. As a consequence, new funding channels could be created for research and new businesses resulting in new job and/or training opportunities. Again, WP1, 6 and 7 will work closely in regard to all these matters for efficient deliveries.

5.5 Needs and Expectations for Engagement

IMTA systems are multisectoral and thus needs for stakeholder engagements will include efficient communication targeted for different audiences (e.g. "translation" of scientific language), clear laws and regulations, new capacity development education programs (target at students and young professionals), business integration with science, social awareness, and clear costs-benefits, among others.

The main goal of this stakeholder mapping is to create a collaborative community to discuss challenges, solutions and business opportunities for an improved and sustainable aquaculture system. Expectations from stakeholders may therefore become too high and thus it will be important to identify which discussed topics can be integrated in the project and why others cannot, and for example, why producing certain high economic value species will work in a certain region but not in another. It is extremely important to deliver a consistent and clear message on the ASTRAL's goals, benefits and limitations to avoid failing to meet stakeholder's expectations.

With the implementation of the ASTRAL project, and with WP6 and WP7 collaboration, Exploitation and Communication and Dissemination Plans will be delivered to aid to continuously attract the attention of new stakeholders. Our disclosure actions are summarized in Figure 4.



Figure 4. Mechanisms for results dissemination and project actions

It should be noted that those interested in the development of IMTA will surely have different levels of involvement and will not necessarily be involved in all processes. Some stakeholders might engage more than others due to their own specific interests and needs. For instance, monoculture farmers interested in adopting IMTA will have more to learn and thus most likely be more engaged than those who have already adopted more than one species production. Likewise, some of ASTRAL's own research & development plans and activities will target different stakeholders groups throughout the project. Namely, technical workshops will target those who seek more and new technical knowledge in the aquaculture sector while High-Level events will target a wide range of stakeholders but mostly decision makers. Additionally, some stakeholders will prefer to just receive newsletters while others will engage in discussing legislation or new species production, as part of the ASTRAL Helix.

6 Conclusions

The ASTRAL stakeholders' list is dynamic and will be continuously updated throughout the duration of the project, according to the involvement of partners and stakeholder recruitment during the project activities. Therefore, it will reflect the preferences of society in general and the aquaculture production sector in particular. The final list of stakeholders and its assessment will be presented at the end of the project and will be available to project partners and the European Commission.

7 ANNEXES

Annex 1. Compiled list of stakeholders grouped by identified sectors

Organisation name	Website	Country	ASTRAL partner	Keyword***
Sec	ctor 1: Licensing agency (enviro	onmental, conc	essions)	
Fundação Estadual de Proteção Ambiental (FEPAM)	http://www.fepam.rs.gov.br	Brazil	FURG	Licensing agency
Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA)	https://www.gov.br/ibama/pt- br	Brazil	FURG	Government office
Department of Agriculture, Food and the Marine (DAFM)	https://www.gov.ie/en/organi sation/department-of- agriculture-food-and-the- marine/	Ireland	MI	Government office, licensing agency
Ministry of Fisheries and Marine Resources	https://mfmr.gov.na/	Namibia	ИСТ	Ministry
Federal Ministry of Agriculture and Rural Development	https://fmard.gov.ng/	Nigeria	NIOMR	Ministry
Nigerian Export Promotion Council	https://nepc.gov.ng/	Nigeria	NIOMR	Ministry
Agder Fylkeskommune	https://agderfk.no/	Norway	NORCE	Government office
Directorate of Fisheries	https://www.fiskeridir.no/Engl ish	Norway	NORCE	Government office
Innlandet Fylkeskommune	https://innlandetfylke.no/	Norway	NORCE	Government office
Møre og Romsdal Fylkeskommune	https://mrfylke.no/	Norway	NORCE	Government office
Nordland Fylkeskommune	https://www.nfk.no/om- nordland-fylkeskommune/om- nordland/in-english/	Norway	NORCE	Government office
Norwegian Environmental Agency	https://www.environmentage ncy.no/	Norway	NORCE	Government office
Norwegian Seafood Council	https://en.seafood.no/	Norway	NORCE	Government office, licensing agency
Oslo kommune/Fylke	https://www.oslo.kommune.n o/	Norway	NORCE	Government office
Rogaland Fylkeskommune	https://www.rogfk.no/	Norway	NORCE	Government office
Troms og Finnmark Fylkeskommune	https://www.tffk.no/	Norway	NORCE	Government office
Trøndelag Fylkeskommune	https://www.trondelagfylke.n o/	Norway	NORCE	Government office
Vestfold og Telemark fylke	https://www.vtfk.no/	Norway	NORCE	Government office
Vestland Fylkeskommune	https://www.vestlandfylke.no/	Norway	NORCE	Government office
Viken Fylkeskommune	https://viken.no/	Norway	NORCE	Government office
Directorate General for Natural Resources, Safety and Maritime Services (DGRM)	https://www.dgrm.mm.gov.pt	Portugal	AIR Centre	Government office, licensing agency
Crown Estate Scotland	https://www.crownestatescotl and.com/	Scotland	SAMS	Government office
Marine Scotland	https://www.gov.scot/policies /marine-and-fisheries- licensing/contact-information/	Scotland	SAMS	Licensing agency
DJ Environmental Consultants	http://djec.co.za/	South Africa	UCT	Consulting
Ecosense	http://www.ecosense.co.za/	South Africa	UCT	Consulting



Organisation name	Website	Country	ASTRAL partner	Keyword***
	Sector 2: Aquaculture	e producers		
Granja Marina San Julian	https://es- la.facebook.com/pages/catego ry/Grocery-Store/Granja- marina-San-Julian- 174342839293180/	Argentina	CONICET	Mollusk producer
Laurihue	http://www.laurihue.com.ar/	Argentina	CONICET	Fish producer
Piscicultura Puerto Moreno	https://puertomorenopiscicult ura.business.site/	Argentina	CONICET	Fish producer
Truchas Boca del Río	https://truchas-boca-del- rio.business.site/	Argentina	CONICET	Fish producer
Valdes SRL	https://www.facebook.com/a ustralmar.almanza	Argentina	CONICET	Aquaculture producer
Aquabel	http://www.aquabel.com.br/	Brazil	FURG	Fish producer
Aquamerica/Aquaporto	https://www.facebook.com/a quaamerica.genetica.superior/	Brazil	МОР	Fish producer
Aquatec	http://www.aquatec.com.br/	Brazil	FURG	Shrimp producer
Camanor	https://www.camanor.com.br/	Brazil	FURG	Fish producer, shrimp producer
Carcibras		Brazil	FURG	Fish producer, shrimp producer
Colpani	https://www.colpanipescados. com.br/	Brazil	МОР	Fish producer
Cristalina	https://cristalina.net.br/	Brazil	MOP	Fish producer
DaFonte Aquicultura	https://www.dafonteaquicultu ra.com.br/	Brazil	МОР	Fish producer
Ecomarine	https://www.facebook.com/ec omarinebr/	Brazil	FURG	Fish producer, shrimp producer
Grupo Ambar Amaral	http://www.grupoambaramar al.com.br/	Brazil	МОР	Fish producer
Lake's Fish	https://lakesfish.com.br/	Brazil	MOP	Fish producer
Primar	https://www.primarorganica.c om.br/	Brazil	FURG	Fish producer, shrimp producer
Puro Peixe	http://www.puropeixe.com.br	Brazil	МОР	Fish producer
SynbiAqua	https://blueconet.com/partne rs/171-synbiaqua-cultivos.html	Brazil	FURG	Fish producer, shrimp producer
Viveiros do Sul		Brazil	FURG	Fish producer, shrimp producer
Zaltana Pescados	https://zaltana.com.br/	Brazil	МОР	Fish producer
Algosource	https://algosource.com/	France	РМВА	Seaweed producer
Bezhin Breizh	https://www.linkedin.com/co mpany/wealsea	France	РМВА	Seafood producer
Symbiomer	https://www.symbiomer.com/	France	РМВА	Seaweed producer
Bradán Beo Teoranta	http://bradanbeo.ie/	Ireland	MI	Fish producer
Carlingford Oyster Company	https://carlingfordoystercomp any.ie/	Ireland	мі	Mollusk producer
Connemara Abalone	http://www.abalone.ie/index. html	Ireland	мі	Mollusk producer
Galway Bay Seafoods	https://www.thedocksidedelig alway.com/	Ireland	мі	Seafood producer
Harty Oysters	http://hartyoysters.com/	Ireland	MI	Mollusk producer
Killary Fjord Shellfish	http://killaryfjordshellfish.com /	Ireland	мі	Mollusk producer
Mannin Bay Salmon Ltd	https://www.manninbaysalmo n.com/	Ireland	мі	Fish producer
MOWI Ireland	https://mowi.com/contact/mo wi-ireland/	Ireland	мі	Fish producer
Murphys Irish Seafood	https://www.facebook.com/m urphysirishseafood/	Ireland	мі	Seafood producer

Ocean Farm Ltd	http://www.gallagherbros.ie/o cean farm.html	Ireland	МІ	Fish producer
Ocean Harvest Technology	https://oceanharvesttechnolo gy.com/	Ireland	МІ	Seaweed producer
Beira Aquaculture	Sylcomy	Namibia	UCT	Mollusk producer
FermarSeafoods CC	https://fermarseafoods.en.ecp laza.net/	Namibia	UCT	Aquaculture producer
Five Roses Aquaculture CC		Namibia	UCT	Mollusk producer
Hangana Abalone (Pty) Ltd	https://www.linkedin.com/in/	Namibia	UCT	Seafood producer
Lagoon Seafood CC	herman-theron-6003502a/	Namibia	UCT	Seafood producer
Luderiz Mariculture (Pty) Ltd	https://www.vikingaquacultur e.co.za/contact/	Namibia	UCT	Aquaculture producer
Nam Oyster CC	https://www.facebook.com/n amoyster/	Namibia	UCT	Mollusk producer
Oceangrown Namibia CC		Namibia	UCT	Mollusk producer
Tetelestai Mariculture CC	https://www.facebook.com/p ages/category/Agricultural- Cooperative/Tetelestai- Mariculture-Pty-Ltd- 837672629623519/	Namibia	UCT	Mollusk producer
Uis Aquaculture Farm		Namibia	UCT	Fish producer
Amuludun Oluwo Fish Farmers Association		Nigeria	NIOMR	Fish producer
Anuoluwapo Fish Farm	https://anuoluwapo- farms.business.site/	Nigeria	NIOMR	Fish producer
Aqua Green Integrated Farming Supporting Initiative (AGI)	www.aquagreenintegrated.co m.ng	Nigeria	NIOMR	Aquaculture producer, organisation
Atlantic Shrimpers Limited	www.fishshop.com.ng	Nigeria	NIOMR	Aquaculture producer
Bethel Farms		Nigeria	NIOMR	Aquaculture producer
Divine Covenant Buguma Farmers	https://www.facebook.com/ib igbenye.apiambo	Nigeria	NIOMR	Aquaculture producer, equipment , service supplier
Ejalonibu Fish		Nigeria	NIOMR	Fish producer
Fishful Thinking Consult	https://fishful-thinking- consult.business.site/	Nigeria	NIOMR	Equipment & Systems
FSF Limited	www.fsflimited.com	Nigeria	NIOMR	Fish producer
Mirus Farm Enterprises		Nigeria	NIOMR	Aquaculture producer
Nigerian Institute for Oceanography and Marine Research (NIOMR)	https://www.niomr.gov.ng/	Nigeria	NIOMR	Aquaculture producer, organisation, research institution
Petex Solution		Nigeria	NIOMR	Aquaculture producer
TEMIDIRE F.C.S		Nigeria	NIOMR	Seafood producer
Triton Aqua Africa Limited (TAAL)		Nigeria	NIOMR	Aquaculture producer
Yah Lateef Fish		Nigeria	NIOMR	Seafood producer
Bremnes Seashore	https://www.seashore.no/	Norway	NORCE	Seafood producer
Cermaq Norway AS	https://www.cermaq.com/	Norway	NORCE	Seafood producer
Grieg Seafood	https://griegseafood.com/	Norway	NORCE	Seafood producer
Lerøy Ocean Forest	https://www.leroyseafood.co m/en/sustainability/ocean- forest/	Norway	NORCE	Seafood producer
Lerøy Seafood	https://www.leroyseafood.co m/	Norway	NORCE	Seafood producer
Lerøy Vest AS	https://www.leroyseafood.co m/en/contact/our-offices/	Norway	NORCE	Seafood producer
Mowi ASA	https://mowi.com/	Norway	NORCE	Seafood producer
NRS Farming AS	https://www.norwayroyalsalm on.com/no	Norway	NORCE	Fish producer
SalMar Farming AS	https://www.salmar.no/en/	Norway	NORCE	Fish producer



Seaweed Solutions AS	https://seaweedsolutions.com /	Norway	AIR Centre	Seaweed producer
Sjøtroll Havbruk AS	https://www.sjotrollhavbrukas .com/	Norway	NORCE	Seafood producer
Urchinomics	https://www.urchinomics.com /	Norway	NORCE	Aquaculture producer
ALGAplus LDA	https://www.algaplus.pt/	Portugal	AIR Centre	Seaweed producer
AquaCria - Sea8	http://www.sea8.eu/es/	Portugal	AIR Centre	Fish producer
Aquicultura e Biotecnologias Marinhas dos Açores (Aquazor)		Portugal	AIR Centre	Innovation & Technology
Centro de Maricultura da Calheta	https://www.facebook.com/C entro-de-Maricultura-da- Calheta-107295569300977/	Portugal	AIR Centre	Knowledge transfer, service supplier, training
Finisterra	https://finisterrasa.pt/contacts /	Portugal	AIR Centre	Aquaculture producer
Jerónimo Martins Agro-Alimentar (JMA)	https://www.jeronimomartins. com/pt/sobre-nos/o-que- fazemos/agro-alimentar/	Portugal	AIR Centre	Food industry, investor
Mirabilis - Aquacultura Sustentavel	http://www.angulata.pt/	Portugal	AIR Centre	Mollusk producer
Testa e Cunhas	http://www.testacunhas.com/	Portugal	AIR Centre	Mollusk producer
Lochnell Oysters	http://www.spanglefish.com/l ochnelloysters/	Scotland	SAMS	Mollusk producer
AlgaEnergy	https://www.algaenergy.es/	Spain	LEITAT	Microalgae producer
Grup Balfegó	https://grupbalfego.com/	Spain	LEITAT	Fish producer
Monzón Biotech	https://mznbiotech.com/	Spain	LEITAT	Microalgae producer
Neoalgae	https://neoalgae.es/	Spain	LEITAT	Microalgae producer

Organisation name	Website	Country	ASTRAL partner	Keyword***
	Sector 3: Equipment / Se	ervice supplier		
AQAR - Aquaculture Solutions	https://www.aqar.com.ar/	Argentina	CONICET	Innovation, service supplier
Granjas Marinas	http://www.granjasmarinas.co m.ar/	Argentina	CONICET	Equipment
Hidroquil	https://www.hidroquil.com.ar /	Argentina	CONICET	Equipment
Indusol	https://www.indusol.com.ar/	Argentina	CONICET	Equipment & Systems
Indutra	http://www.indutra.com/	Argentina	CONICET	Equipment & Systems
José Moscuzza & Cía	http://www.moscuzzaredes.co m/web1/	Argentina	CONICET	Equipment & Systems
Mariscope	http://mariscope.com.ar/	Argentina	CONICET	Equipment
Netting	https://www.nettingsa.com.ar /	Argentina	CONICET	Equipment
Repicky	http://www.repicky.com.ar/	Argentina	CONICET	Equipment
Agricotec	http://www.agricotec.net/pt- br	Brazil	МОР	Equipment
All Aqua	https://www.all-aqua.pt/	Brazil	FURG	Equipment
Alta Mar	https://altamar.com.br/es- altamar-sistemas-acuaticos/	Brazil	FURG	Equipment & Systems
Branco Maquinas	https://www.brancomaquinas. com.br/	Brazil	МОР	Equipment
Brusinox	http://www.brusinox.com.br/	Brazil	МОР	Equipment
INVE Aquaculture	https://www.inveaquaculture. com/latest-news/map/inve- do-brasil/	Brazil	МОР	Systems

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Manzoni	http://www.manzoni.com.br/ produtos/	Brazil	МОР	Equipment & Systems
Multivac	https://br.multivac-shop.com/	Brazil	МОР	Equipment
Trevisan	https://www.trevisan.ind.br/	Brazil	FURG	Equipment
Wenger	https://www.wenger.com	Brazil	МОР	Equipment
Zanatta	http://www.zanatta.com.br/	Brazil	FURG	Equipment & Systems
AquaManager	https://www.aqua- manager.com/	Greece	AIR Centre	Innovation & Technology, service supplier
Aqaufact	http://www.aquafact.ie/	Ireland	MI	Consulting
Merc Environmental	http://www.mercenvironment al.com/	Ireland	МІ	Consulting
Amicam Farm & Fabrication	http://amefan.org/	Nigeria	NIOMR	Equipment & Systems
Gabrovic Agric Nig		Nigeria	NIOMR	Equipment, service supplier
Kingdom Aquarium	http://kingdomaquariumandfi sheries.com/	Nigeria	NIOMR	Equipment
KOAV		Nigeria	NIOMR	Aquaculture producer, service supplier
Ofontim Digital Services		Nigeria	NIOMR	Equipment, service supplier
Akva Group ASA	https://www.akvagroup.com/ home	Norway	NORCE	Technology
FoMAS – Fiskehelse og Miljø AS	https://fom-as.no/	Norway	NORCE	Service supplier
Imenco	https://imenco.no/	Norway	NORCE	Technology
Krüger Kaldnes	https://www.krugerkaldnes.no /en	Norway	NORCE	Technology
Mørenot Aquaculture	https://www.morenot.com/aq uaculture/	Norway	NORCE	Technology
Pharmaq	https://www.pharmaq.no/	Norway	NORCE	Aquaculture vaccines and innovation
Satpos AS	https://sams- norway.no/partners/satpos/	Norway	AIR Centre	Sensors and monitoring
Scale AQ	https://scaleaq.com/	Norway	NORCE	Aquaculture technology, equipment
in2sea LDA	https://www.in2sea.pt/	Portugal	AIR Centre	Innovation & Technology
OFISEQ – Offshore Fishfarming Equipment	https://ofiseq.com/contactos	Portugal	AIR Centre	Equipment
SeaForester	http://seaforester.org/	Portugal	AIR Centre	Research & Development
Marlow Ropes	https://www.marlowropes.co m/	υκ	SAMS	Equipment
Xylem Analytics Ltd.	https://www.xylem.com/en- uk/	υκ	SAMS	Equipment
Kames Fish Farming	https://kames.co.uk/	Scotland	SAMS	Aquaculture producer

Organisation name	Website	Country	ASTRAL partner	Keyword***
Sector 4: Feed / Food industry				
Bioceres Semillas	https://bioceressemillas.com.a r/	Argentina	CONICET	Feed industry
Bonggiovani	http://www.grupobongiovanni .com/	Argentina	CONICET	Feed industry
Gepsa Grupo Pilar	http://www.gepsa.com/	Argentina	CONICET	Feed industry
Molino Chacabuco	http://www.molinochacabuco. com.ar/	Argentina	CONICET	Feed industry
Newsan	https://www.newsan.com.ar/ unidades-de-negocio/newsan- food/	Argentina	CONICET	Food industry

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AquaQualy	http://aguagualy.com.br/	Brazil	МОР	Feed industry
Aquatec	http://www.aguatec.com.br/	Brazil	МОР	Feed industry
Escama Forte	https://www.escamaforte.com .br/	Brazil	МОР	Feed industry
Fosfish	https://www.fosfish.com.br/	Brazil	МОР	Feed industry
Guabi	http://www.guabi.com.br/	Brazil	FURG	Feed industry
Agriloops	https://www.agriloops.com/	France	РМВА	Shrimps production, Food industry
Mytilimer	https://www.linkedin.com/co mpany/la-cancalaisegroupe- mytilimer	France	РМВА	Seafood producer
Cargill Aqua Nutrition (EWOS)	https://www.cargill.com/anim al-nutrition/brands/ewos	Ireland	МІ	Aquaculture producer, organisation
Galway Bay Seafoods	https://www.thedocksidedelig alway.com/	Ireland	мі	Seafood producer
Hexafly	https://hexafly.com/	Ireland	MI	Food industry
Skretting	https://www.skretting.com/	Ireland	MI	Feed industry
Sustainable Protein Farms	https://www.sprofarms.com/	Ireland	MI	Food industry
Atlantic Shrimpers Ltd	http://www.primstar.com/	Nigeria	NIOMR	Seafood producer
Fudkraft Elite Global Concept Ltd.		Nigeria	NIOMR	Aquaculture producer, Feed industry
Idi-Onyara Farms		Nigeria	NIOMR	Aquaculture producer, Feed industry
Johnrise Venture		Nigeria	NIOMR	Aquaculture producer, Feed industry
Klassic Farms		Nigeria	NIOMR	Food industry
Radiation Agricultural Development and Investment Company West Africa Ltd	https://www.facebook.com/ra diationagric/	Nigeria	NIOMR	Feed industry, aquaculture producer
Sammani Consult Nigeria Ltd.		Nigeria	NIOMR	Aquaculture producers, Feed industry
Sejfarm	https://sejfarms.com.ng/	Nigeria	NIOMR	Aquaculture producer
Soulmark Farm		Nigeria	NIOMR	Aquaculture producers, food fish Industry, Investor
Triton	https://www.linkedin.com/co mpany/triton-group	Nigeria	NIOMR	Feed industry
Austevoll laksepakkeri AS	http://www.aufi.no/home/	Norway	NORCE	Fish producer
BioMarA.S.	https://www.biomar.com/	Norway	NORCE	Technology
EWOS AS	https://www.cargill.com/anim al-nutrition/brands/ewos	Norway	NORCE	Feed industry
Hordafor AS	http://www.hordafor.no/	Norway	NORCE	Aquaculture producer
Isfjord Norway AS	https://www.isfjordnorway.no	Norway	NORCE	Fish producer
Nordlaks produkter AS	https://www.nordlaks.no/	Norway	NORCE	Value chain
Norsk sjømat Stranda AS	https://www.norsksjomat.no/	Norway	NORCE	Value chain
Nova Sea AS	https://novasea.no/	Norway	NORCE	Value chain
Scanbio Ingredients AS	https://scanbio.com/	Norway	NORCE	Value chain
Sinkaberg-Hansen AS	https://sinkaberghansen.no/	Norway	NORCE	Value chain
Skretting AS	https://www.skretting.com/en /	Norway	NORCE	Feed industry
Vikenco AS	https://www.vikenco.no/	Norway	NORCE	Value chain
Sogal/Aquasoja	https://aquasoja.pt/	Portugal	AIR Centre	Innovation & Technology
SPAROS	https://www.sparos.pt/about- us/	Portugal	AIR Centre	Innovation & Technology



Organisation name	Website	Country	ASTRAL partner	Keyword***
	Sector 5: Association /	Organisation		
Argentina Submarina		Argentina	CONICET	Association
Asociación Argentina de Acuicultura	http://acuicultura.org.ar/	Argentina	CONICET	Association
Beagle Secretos del Mar	https://www.facebook.com/B eagle-Secretos-del-mar- 1441049466222061/	Argentina	CONICET	Organisation
Cluster de pesca artesanal Tierra del Fuego	https://es- la.facebook.com/clusterpescat df/	Argentina	CONICET	Cluster
Grupo PAIBA	https://grupopaiba.negocio.sit e/	Argentina	CONICET	Aquaculture producer, organisation
Aquabio	www.aquabio.com.br/	Brazil	MOP	Association
Associação Brasileira de Criadores de Camarão (ABCC)	https://abccam.com.br/	Brazil	FURG	Association
Bahia Pesca	http://www.bahiapesca.ba.go v.br/	Brazil	МОР	Organisation
Innovation Norway, Brazil office	https://www.innovasjonnorge. no/en/start-page/about/our- offices/offices-abroad/brazil/	Brazil	МОР	Innovation, organisation
Peixe BR	https://www.peixebr.com.br/	Brazil	FURG	Association
French Bioeconomy Cluster (IAR)	https://en.iar-pole.com/	France	РМВА	Association
Valorial	https://www.pole- valorial.fr/en/home/	France	РМВА	Innovation, organisation
Native Oyster Restoration Alliance (NORA)	https://noraeurope.eu/	Germany	SAMS	Association
Bord Bia	https://www.bordbia.ie/	Ireland	MI	Organisation
Irish Farmers Association (IFA)	https://www.ifa.ie/	Ireland	MI	Aquaculture producers, organisation
Anuoluwapo Cooperative Society	https://www.facebook.com/A nuoluwapo-Owotutu- Cooperative- 1844422872266411	Nigeria	NIOMR	Organisation
Babaagbo F.C.S.		Nigeria	NIOMR	
Eco Restoration Foundation	https://erf.ng/	Nigeria	NIOMR	Organisation
Fisheries Society of Nigeria (FISON)	https://fison.org.ng/	Nigeria	NIOMR	Association
Igbehin Adun Cooperative Society		Nigeria	NIOMR	Association
National Association of Fisheries Students (NAFIS)	https://www.facebook.com/N ational-Association-of- Fisheries-Students-NAFIS- 297290127439949	Nigeria	NIOMR	Association
Yoboyan Cooperative Society		Nigeria	NIOMR	Association
Bellona	https://bellona.org/	Norway	NORCE	Organisation
GCE Ocean Technology	https://www.gceocean.no/	Norway	NORCE	Organisation, technology
Naturvernforbundet	https://naturvernforbundet.no /	Norway	NORCE	Organisation
NCE Aquatech Cluster	https://aquatechcluster.no/	Norway	МОР	Cluster
NCE Blue Legasea	https://www.legasea.no/legas ea	Norway	NORCE	Innovation & Technology
NCE seafood innovation	https://seafoodinnovation.no/	Norway	NORCE	Innovation & Technology
Sjømatbedriftene	https://sjomatbedriftene.no/	Norway	NORCE	Organisation
The Norwegian Animal Protection Alliance (NAPA)	https://dyrevern.no/english/	Norway	NORCE	NGO
The Norwegian Seafood Federation	https://sjomatnorge.no/norwe gian-seafood-federation/	Norway	NORCE	Association
WWF Norway	https://wwf.panda.org/wwf_o ffices/norway/	Norway	NORCE	Organisation



Asociación Panameña de Acuicultores (ASPAC)	https://www.aspac.org.pa/	Panama		Association
Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (ARDITI) / Regional Agency for the Development of Research, Technology and Innovation	http://www.arditi.pt/	Portugal	AIR Centre	Government office, organisation, innovation
BlueBioAlliance	https://www.bluebioalliance.p t/	Portugal	AIR Centre	Value chain
Fishing Association of Azores	https://federacaopescasacores .pt/	Portugal	AIR Centre	Association
North Atlantic Salmon Conservation Organization (NASCO)	https://nasco.int/	Scotland	AIR Centre	Organisation
Scottish Seaweed Industry Association	https://www.seaweedscotland .org/	Scotland	SAMS	Association
Aquaculture Association of Southern Africa (AASA)	https://www.aasa-aqua.co.za/	South Africa	CSIR	Association
WWF South Africa	https://www.wwf.org.za/	South Africa	CSIR	Organisation
Association of Scottish Shellfish Growers	https://assg.org.uk/	UK	SAMS	Association
AlgaeUK	https://www.algae-uk.org.uk/	UK	SAMS	Association

Organisation name	Website	Country	ASTRAL partner	Keyword***
	Sector 6: Ministry (Enviror	iment, Sea, etc.	.)	
Benguela Current Commission (BCC)	https://www.benguelacc.org/i ndex.php/en/	Angola	UCT	Sustainable exploitation, conservation organisation
Government of Angola	https://governo.gov.ao/ao/	Angola	UCT	Government office
Ministry of Higher Education, Science, Technology and Innovation	https://mescti.gov.ao/ao/	Angola	AIR Centre	Ministry
Ministerio de Agricultura, Pesca y Alimentación	https://www.mapa.gob.es/es/	Argentina	CONICET	Ministry
Ministerio de Ambiente y Desarrollo Sostenible	https://www.argentina.gob.ar /ambiente	Argentina	CONICET	Ministry
Ministerio de Ciencia, Tecnología e Innovación	https://www.argentina.gob.ar /ciencia	Argentina	CONICET	Ministry
Subsecretaría de Pesca y Acuicultura TDF	https://www.argentina.gob.ar /agricultura/agricultura- ganaderia-y- pesca/subsecretaria-de-pesca- y-acuicultura	Argentina	CONICET	Government office, licensing agency
Secretaria de Aquicultura e Pesca (SAP/MAPA)	https://www.gov.br/agricultur a/pt-br/acesso-a- informacao/institucional/que m-e-quem/secretaria-de- aquicultura-e-pesca	Brazil	FURG	Government office, licensing agency
Ministry of Maritime Economy	https://www.governo.cv/gove rno/ministerios/ministro-da- economia-maritima/	Cabo Verde	AIR Centre	Ministry
Autoridad Nacional de Acuicultura y Pesca (AUNAP)	https://www.aunap.gov.co/	Colombia	AIR Centre	Government office, licensing agency
Dirección de Pesca y Acuicultura	https://www.minagricultura.g ov.co/ministerio/direcciones/P aginas/Direccion-de-Pesca-y- Acuicultura.aspx	Colombia	AIR Centre	Ministry,
Instituto Costarricense de Pesca y Acuicultura (INCOPESCA)	https://www.incopesca.go.cr/	Costa Rica	AIR Centre	Government office
Junta de Administración Portuaria y de Desarrollo Económico de la	http://www.japdeva.go.cr/ad ministracion_de_desarrollo/asi	Costa Rica	AIR Centre	Government office



Vertiente Atlántica de Costa Rica (JAPDEVA)	stencia_tecnica/pesca- acuicultura.html			
Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (OSPESCA)	https://www.sica.int/ospesca/	El Salvador	AIR Centre	Organisation
Ministry for the Ecological Transition	https://www.ecologie.gouv.fr/	France	РМВА	Ministry
Ministry of Agriculture and Food	https://agriculture.gouv.fr/fre nch-ministry-agriculture-and- food	France	РМВА	Ministry
Ministry of Higher Education, Research and Innovation	https://www.enseignementsu p-recherche.gouv.fr/	France	РМВА	Ministry
Ministry of the Sea / Ministère de la Mer	https://mer.gouv.fr/	France	РМВА	Ministry
Department of Agriculture, Food and the Marine (DAFM)	https://www.gov.ie/en/organi sation/department-of- agriculture-food-and-the- marine/	Ireland	МІ	Government office, licensing agency
Comisión Nacional de Acuacultura y Pesca (CONAPESCA)	https://www.gob.mx/conapes ca	Mexico	AIR Centre	Government office
Ministry of Environment, Forestry and Tourism	https://www.met.gov.na/	Namibia	UCT	Ministry
Agriculture Research Council of Nigeria (ARCN)	http://www.coraf.org/nigeria/	Nigeria	NIOMR	Government office
Federal Ministry of Agriculture and Rural Development	https://fmard.gov.ng/	Nigeria	NIOMR	Ministry
Federal Ministry of Water Resources	https://www.waterresources.g ov.ng/	Nigeria	NIOMR	Ministry
Lagos State Agricultural Development Authority (LSADA)	https://www.lsada.org/	Nigeria	NIOMR	Government office
Lagos State Ministry of Agriculture	https://agriculture.lagosstate. gov.ng/	Nigeria	NIOMR	Ministry
Minestry of Climate and Environment	https://www.regjeringen.no/e n/dep/kld/id668/	Norway	NORCE	Ministry
Ministry of Trade, Industry and Fisheries	https://www.regjeringen.no/e n/dep/nfd/id709/	Norway	NORCE	Ministry
Direcção Regional Ciencia e Tencologia - Azores	http://www.azores.gov.pt/Gra /CTacores	Portugal	AIR Centre	Government office
Directorate-General for Maritime Policy (DGPM)	https://www.dgpm.mm.gov.pt /	Portugal	AIR Centre	Government office
Regional Secretary Sea and Fisheries - Azores	https://portal.azores.gov.pt/w eb/srmp	Portugal	AIR Centre	Government office
Ministerio de Ganadería, Agricultura y Pesca	https://www.gub.uy/ministeri o-ganaderia-agricultura- pesca/tematica/acuicultura	Uruguay	AIR Centre	Ministry

Organisation name	Website	Country	ASTRAL partner	Keyword***
Sector 7: Related peripheric/	non-food activities (e.g. indust	try related to m	icroalgae for	biofuel, wastewater)
Petrobras	https://petrobras.com.br/en/	Brazil	FURG	Value chain, investor
Ceva	https://www.ceva.com/en	France	РМВА	Services supplier
Alginor	https://alginor.no/	Norway	NORCE	Value chain
Epax Norway	https://www.epax.com/	Norway	NORCE	Food industry
Tekslo Seafood	https://teksloseaweed.no/en/	Norway	NORCE	Seaweed producer
Hidromod	https://hidromod.com/	Portugal	AIR Centre	Consulting, innovation
WavEC	https://www.wavec.org/	Portugal	AIR Centre	Innovation
CSIR Environmental Management Services	https://www.csir.co.za/enviro nmental-impact-assessment	South Africa	CSIR	Consulting, services supplier



CyanoLakes	https://www.cyanolakes.com/	South Africa	CSIR	Consulting, services supplier
Lwandle Marine Environment Services	https://www.lwandle.co.za/	South Africa	CSIR	Consulting, services supplier
Veolia Water Technologies	https://www.veoliawatertechn ologies.com/en	South Africa	CSIR	Technology, services supplier

Organisation name	Website	Country	ASTRAL partner	Keyword***
Sector 8: R&D I	nstitutions and Training & Edu	cation (includi	ng capacity bu	ilding)
Centro de Investigación Aplicada y Transferencia Tecnológica en Recursos Marinos Almirante Storni (CIMAS)	https://cenpat.conicet.gov.ar/ cimas/	Argentina	CONICET	Research institution
Centro Para el Estudio de Sistemas Marinos (CESIMAR)	https://cenpat.conicet.gov.ar/ cesimar/	Argentina	CONICET	Research institution
Instituto de Biología de Organismos Marinos (IBIOMAR)	https://ibiomar.conicet.gov.ar /	Argentina	CONICET	Research institution
Instituto de Ciencias Polares, Ambiente y Recursos Naturales (ICPA-UNTDF)	http://www.untdf.edu.ar/insti tutos/icpa	Argentina	CONICET	Research institution, University
Instituto de Investigaciones en Biodiversidad y Biotecnología (INBIOTEC)	https://inbiotec- conicet.gob.ar/	Argentina	CONICET	Research institution
Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP)	https://www.argentina.gob.ar /inidep	Argentina	CONICET	Research institution
Instituto Nacional de Tecnología Industrial (INTI)	https://www.argentina.gob.ar /inti	Argentina	CONICET	Research institution
Red de Fortalecimiento de la Acuicultura (ReFACUA)	http://www.refacua.gob.ar/	Argentina	CONICET	Research institution
Universidad Nacional de Tierra del Fuego (UNTDF)	http://www.untdf.edu.ar/	Argentina	CONICET	University
Universidad Nacional del Comahue (UNCO-CRUB)	https://www.uncoma.edu.ar/	Argentina	CONICET	University
Universidad Tecnológica Nacional Chubut (UTNFRCH)	http://www.frtdf.utn.edu.ar/in dex.php/en/	Argentina	CONICET	University
Universidad Tecnológica Nacional Tierra del Fuego (UTNFRTDF)	http://www.frtdf.utn.edu.ar/in dex.php/en/	Argentina	CONICET	University
Empresa Brasileña de Investigación Agropecuaria (EMBRAPA)	https://www.embrapa.br/	Brazil	FURG	Research institution
Federação das Indústrias do Estado de São Paulo (FIESP)	https://www.fiesp.com.br/	Brazil	FURG	Association, organisation
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)	https://fapesp.br/en	Brazil	FURG	Research institution
Fundação de Amparo à Pesquisa e Inovação do Estado de Santa Catarina (FAPESC)	https://www.fapesc.sc.gov.br/	Brazil	FURG	Research institution
Fundação de Apoio a Preservação Ecológica (FAPE)		Brazil	FURG	Research institution
Fundação Instituto de Pesca do Estado do Rio de Janeiro (FIPERJ)	http://www.fiperj.rj.gov.br/	Brazil	FURG	Research institution
Marine Science Institute (Labomar - UFC)	https://labomar.ufc.br/pt/	Brazil	AIR Centre	Research institution, University
Universidade Estadual Paulista (UNESP)	https://www2.unesp.br/	Brazil	FURG	University
Universidade Federal de Santa Catarina (UFSC)	https://ufsc.br/	Brazil	FURG	University
Universidade Federal do Rio Grande (FURG)	https://www.furg.br/	Brazil	FURG	University
University of Waterloo - Department of Biology	https://uwaterloo.ca/biology/	Canada	СНХ	University



University ot Ottawa - Department of Biology	https://science.uottawa.ca/bio logy/	Canada	СНХ	University
Centro de Investigación de la Acuacultur (CENIACUA)	https://www.ceniacua.org	Colombia	AIR Centre	Research institution
Marine and Coastal Research Institute (INVEMAR)	http://www.invemar.org.co	Colombia	AIR Centre	Research institution
DVOKUT-ECRO Ltd.	https://dvokut-ecro.hr/home/	Croatia	СНХ	Consulting, Knowledge transfer
Agrocampus	https://international.agrocam pus-ouest.fr/	France	РМВА	Training & Education Institution
Laboratory of Marine Environmental Sciences (LEMAR)	https://www-iuem.univ- brest.fr/lemar/	France	РМВА	Research institution
National Institute for Ocean Science (IFREMER)	https://wwz.ifremer.fr/en/	France	РМВА	Research institution
Roscoff Marine Station (SBR-CNRS)	http://www.sb- roscoff.fr/en/roscoff-marine- station	France	AIR Centre	Research institution
Indigo-Med	http://www.indigo-med.com/	Greece	СНХ	Science communication, environmental education
AquaTT	https://www.aquatt.ie/	Ireland	AIR Centre	Consulting, Knowledge transfer
Bantry Marine Research Station (BMRS)	https://www.bmrs.ie/	Ireland	мі	Research institution
Bord lascaigh Mhara (BIM)	http://www.bim.ie/	Ireland	MI	IResearch institution, innovation, training
Galway-Mayo Institute of Technology (GMIT)	https://www.gmit.ie/	Ireland	MI	Training & Education Institution
NUI Galway	https://www.nuigalway.ie/	Ireland	AIR Centre	University
Trinity College Dublin - Natural Science	https://naturalscience.tcd.ie/	Ireland	СНХ	University
University College Cork (UCC)	https://www.ucc.ie/en/	Ireland	MI	University
University College Cork - Environmental Research Institute	https://www.ucc.ie/en/eri/	Ireland	MI	Research institution, University
Ca' Foscari University of Venice	https://www.unive.it/pag/135 26	Italy	СНХ	University
University of Malta - Research Innovation and Development Trust (RIDT)	https://researchtrustmalta.eu/	Malta	СНХ	University
Sam Nujoma Marine and Coastal Resources Research Centre (SANUMARC)	https://www.unam.edu.na/sa numarc	Namibia	AIR Centre	Research institution, University
University of Namibia	https://www.unam.edu.na/	Namibia	UCT	University
Abubakar Tafawa Balewa University	https://www.atbu.edu.ng/	Nigeria	NIOMR	University
African Regional Aquaculture Centre (ARAC)	http://aracniomrph.blogspot.c om/	Nigeria	NIOMR	Research Institution, Training & Education Institution, aquaculture producer
Agricultural Research Council of Nigeria	http://www.coraf.org/nigeria/	Nigeria	NIOMR	Research institution, training
Ahmadu Bello University, Zaria	https://www.abu.edu.ng/	Nigeria	NIOMR	University
Ambrose Alli University, Ekpoma	https://www.aauekpoma.edu. ng/	Nigeria	NIOMR	University
Badore Model College	http://lagosschoolsonline.com /schools/profile/1215	Nigeria	NIOMR	Training & Education Institution
Basil Internation Schools	http://www.basilschools.org/	Nigeria	NIOMR	Training & Education Institution
Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State	www.coou.edu.ng	Nigeria	NIOMR	University



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Chukwuemeka Odumegwu Ojukwu University, Uli	https://coou.edu.ng/	Nigeria	NIOMR	University
Delta State School of Marine Technology, Burutu, Delta State	www.dsmt.edu.ng	Nigeria	NIOMR	Training & Education Institution
Delta State University	https://www.delsu.edu.ng/	Nigeria	NIOMR	University
Department of Fisheries				
Technology Federal College of	www.fcaishiagu.edu.ng	Nigeria	NIOMR	Training & Education Institution
Agriculture, Ishiagu, Ebonyi State Federal College of Education,	http://www.foopoplahip.odu.p			Training & Education
Pankshin	http://www.fcepankshin.edu.n	Nigeria	NIOMR	Institution
Federal College of Fisheries and				Training & Education
Marine Research (FCFMT)	www.fcfmt.edu.ng	Nigeria	NIOMR	Institution
Federal College of Freshwater	https://www.fcfft-	Nigeria	NIOMR	Training & Education
Fisheries Technology	newbussa.edu.ng/			Institution
Federal Polytechnic Ekowe, Bayelsa State	www.federalpolyekowe.edu.n	Nigeria	NIOMR	Training & Education Institution
Federal University Dutse	https://fud.edu.ng/	Nigeria	NIOMR	University
Federal University of Agric,		Nissuis		
Makurdi	https://uam.edu.ng/	Nigeria	NIOMR	University
Federal University of Technology	https://futminna.edu.ng/	Nigeria	AIR	University
Minna (FUTMINNA)		Nigeria	Centre	oniversity
Federal University of Technology, Akure (FUTA)	www.futa.edu.ng	Nigeria	NIOMR	University
Good Shepherd Schools	http://www.goodshepherdsch ools.ng/	Nigeria	NIOMR	Training & Education Institution
King's College, Lagos	www.kingscollegelagos.com.n g	Nigeria	NIOMR	Training & Education Institution
Lagos State Polytechnic	https://mylaspotech.edu.ng/	Nigeria	NIOMR	Training & Education Institution
Meadow Hall Schools	https://meadowhalleducation. org/	Nigeria	NIOMR	Training & Education Institution
Michael Okpara University of Agriculture, Umudike, Abia State	www.mouau.edu.ng	Nigeria	NIOMR	University
Nassarawa State University, Keffi	https://nsuk.edu.ng/	Nigeria	NIOMR	University
National Agricultural Extension and Research Liaison, Ahmadu Bello University, Zaria	https://uss.abu.edu.ng/naerls. php	Nigeria	NIOMR	University
National Open University of Nigeria, Fas, Abuja	https://nou.edu.ng/faculties/f aculty-agricultural-sciences	Nigeria	NIOMR	University
Niger Delta University, Bayelsa State	https://www.ndu.edu.ng/	Nigeria	NIOMR	Research & Development, Training & Education Institution
Nigerian Institute for Freshwater Fisheries Research	http://niffr.blogspot.com/	Nigeria	NIOMR	University
Nigerian Institute for Oceanography and Marine Research	https://www.niomr.gov.ng/	Nigeria	NIOMR	Research Institution, training
Oyo State College of Agriculture and Technology, Igboora	http://www.oyscatech.edu.ng/	Nigeria	NIOMR	Training & Education Institution
Rivers State University	www.rsu.edu.ng	Nigeria	NIOMR	University
The Oke-Ogun Polytechnic, Fisheries Unit	https://www.tops.edu.ng/	Nigeria	NIOMR	Training & Education Institution
University of Africa, Toru-Orua, Bayelsa State	www.uat.edu.ng	Nigeria	NIOMR	University
University of Benin, Edo State	https://www.uniben.edu/	Nigeria	NIOMR	University
University of Ibadan	https://www.ui.edu.ng/	Nigeria	NIOMR	University
University of Ilorin, Ilorin	https://www.unilorin.edu.ng/	Nigeria	NIOMR	University
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University of Jos	https://www.unijos.edu.ng/	Nigeria	NIOMR	University



University of Lagos	https://unilag.edu.ng/	Nigeria	NIOMR	University
University of Maiduguri	https://www.unimaid.edu.ng/	Nigeria	NIOMR	University
University of Port Harcourt - Institute of Natural Resources, Environment and Sustainable Development (INRES)	https://www.uniport.edu.ng/i nstitutes/149-institute-of- natural-resources- environment-and-sustainable- development-inres.html	Nigeria	NIOMR	Research & Development, Training & Education Institution
University of Port Harcourt, Port Harcourt	https://www.uniport.edu.ng/	Nigeria	NIOMR	University
Akvaplan-niva	https://www.akvaplan.niva.no /en/home/	Norway	NORCE	Consulting, Research & Development
Applied research, technology and innovation (SINTEF)	https://www.sintef.no/en/	Norway	NORCE	Research institution
Blueplanet	https://blueplanetacademy.co m/en/	Norway	МОР	e-learning platform
Institute of Marine Research (IMR) / Havforskningsinstituttet	https://www.hi.no/en	Norway	NORCE	Research institution
Nord University, Faculty of Biosciences and Aquaculture	https://www.nord.no/en/abou t/faculties-and- centres/faculty-of-biosciences- and-aquaculture	Norway	NORCE	University
Nord University, Faculty of Social Sciences	https://www.nord.no/en/abou t/faculties-and- centres/faculty-of-social- sciences	Norway	NORCE	University
Norsk institutt for vannforskning (NIVA) / Norsk Institutt for Vannforskning	https://www.niva.no/en	Norway	NORCE	Research institution
Norwegian Institute for Nature Research (NINA) / Norsk institutt for naturforskning	https://www.nina.no/english	Norway	NORCE	Research institution
Norwegian Institute of Food, Fisheries and Aquaculture Research (NOFIMA)	https://nofima.no/en/	Norway	NORCE	Research institution
Norwegian University of Life Sciences (NMBU)	https://www.nmbu.no/en	Norway	NORCE	University
Norwegian University of Science and Technology (NTNU)	https://www.ntnu.edu/	Norway	СНХ	University
Norwegian Veterinary Institute / Veterinærinstituttet	https://www.vetinst.no/en	Norway	NORCE	Research institution
Skretting Aquaculture Research Centre (ARC)	https://www.skretting.com/en /research-innovation/	Norway	NORCE	Research institution
The Arctic University of Norway (UiT)	https://en.uit.no/startsida	Norway	NORCE	University
University of Agder	https://www.uia.no/en	Norway	NORCE	University
University of Bergen, Faculty of	https://www.uib.no/en/matna	Norway	NORCE	University
Mathematics and Natural Sciences University of Bergen, Faculty of Social Sciences	t https://www.uib.no/en/svf	Norway	NORCE	University
University of Oslo	https://www.uio.no/english/	Norway	NORCE	University
University of Stavanger	https://www.uis.no/en	Norway	NORCE	University
Western Norway University of Applied Science	https://www.hvl.no/en/	Norway	NORCE	University
Centro Interdisciplinar de Investigação Marinha e Ambiental (CIIMAR)	https://www2.ciimar.up.pt/	Portugal	AIR Centre	Research institution
DEIMOS	https://elecnor-deimos.com/	Portugal	AIR Centre	Innovation & Technology
Faculty of Sciences & Technology New University of Lisbon	https://fojo.org/	Portugal	AIR Centre	University



Hydrographic Institute / Instituto			AIR	
Hidrográfico	https://www.hidrografico.pt/	Portugal	Centre	Equipment & Systems
Instituto Superior Técnico (IST)	https://tecnico.ulisboa.pt/en/	Portugal	AIR Centre	University
Portuguese Institute for Sea and Atmosphere (IPMA)	https://www.ipma.pt/en	Portugal	AIR Centre	Research institution
Universidada dos Açores	https://www.uac.pt/en	Portugal	AIR Centre	University
University of Algarve	https://www.ualg.pt/en	Portugal	AIR Centre	University
University of Aveiro	https://www.ua.pt/en/	Portugal	UCT	University
University of Azores	https://international.uac.pt/	Portugal	AIR Centre	University
University of Coimbra	https://www.uc.pt/en	Portugal	СНХ	University
University of Lisbon	https://www.ulisboa.pt/en/uni dade-organica/faculty-sciences	Portugal	AIR Centre	University
Scottish Aquaculture Innovation Centre	https://www.sustainableaquac ulture.com/	Scotland	SAMS	Research & Development
University of Ljubljana - Biotechnical Faculty	https://www.bf.uni-lj.si/sl/	Slovenia	СНХ	University
Cape Peninsula University of Technology (CPUT)	https://www.cput.ac.za/	South Africa	UCT	University
Council for Scientific and Industrial Research (CSIR)	https://www.csir.co.za/	South Africa	UCT	Innovation, services supplier
Oceanic Platform of the Canary Islands (PLOCAN)	https://www.plocan.eu/en/	Spain	AIR Centre	Research & Development, Innovation & Technology
University of La Laguna	https://www.ull.es/en/	Spain	СНХ	University
KTH Royal Institute of Technology in Stockholm	https://www.kth.se/en	Sweden	СНХ	Research institution
Delft University of Technology	https://www.tudelft.nl/en/	The Netherlands	СНХ	University
Dokuz Eylul University - Institute of Marine Sciences and Technology	http://imst.deu.edu.tr/en/	Turkey	СНХ	University
Ege University - Microalgae Culture Collection	http://www.egemacc.com/en/	Turkey	СНХ	University
Cardiff University - School of Earth and Environmental Sciences	https://www.cardiff.ac.uk/eart h-environmental-sciences	UK	СНХ	University
Centre for Process Innovation	https://www.uk-cpi.com/	υκ	СНХ	Research institution, Innovation & Technology
Industrial Biotechnology Innovation Centre (IbioiC)	https://www.ibioic.com/	υκ	SAMS	Research & Development, innovation
National Oceanography Centre	https://noc.ac.uk/	UK	СНХ	Research institution
UHI Aquaculture Hub	https://www.uhi.ac.uk/en/res earch-enterprise/res- themes/mese/aquaculture/	ИК	SAMS	Research & Development
Ulster University - Geography and Environmental Sciences	https://www.ulster.ac.uk/facul ties/life-and-health- sciences/geography-and- environmental-sciences	UK	СНХ	University
University of Strathclyde - Naval Architecture, Ocean & Marine Engineering	https://www.strath.ac.uk/engi neering/navalarchitectureocea nmarineengineering/	UK	СНХ	University

Organisation name	Website	Country	ASTRAL partner	Keyword***			
Sector 9: Investors (existing and potential)							
Newsan	https://www.newsan.com.ar/	Argentina	CONICET	Innovation & Technology			
Mer Angels	www.mer-angels.org	France	РМВА	Investors			
Aquaspark	https://www.aqua-spark.nl/	Netherlands	AIR Centre	Investors			
Broodstock Capital Partners	https://www.broodstock.no/	Norway	МОР	Investors			
Katapult Ocean	https://katapultocean.com/	Norway	МОР	Investors			
Kverva	https://kverva.no/frontpage	Norway	МОР	Investors			
Aquaculture World		South Africa	UCT	Consulting			
Eastern Cape Development Corporation	http://www.ecdc.co.za/	South Africa	ИСТ	Investors			

Organisation name	Website	Country	ASTRAL partner	Keyword***		
Sector 10: Certification body (food safety, ecolabel etc.)						
Sello de Calidad Certificada Tierra del Fuego-Fin del Mundo	https://www.facebook.com/se llocalidadtdf/	Argentina	CONICET	Certification body		
SAI Global Compliance	https://saiassurance.ie/audit- and-certification	Ireland	МІ	Standards		
Namibia Standards Institution	https://www.nsi.com.na/	Namibia	UCT	Standards		
Standards Organisation of Nigeria (SON)	www.son.gov.ng	Nigeria	NIOMR	Standards		
Aquaculture Stewardship Council	https://www.asc-aqua.org/	Norway	NORCE	Standards		
Debio	https://debio.no/english/	Norway	NORCE	Certification body		
Mattilsynet	https://www.mattilsynet.no/la nguage/english/	Norway	NORCE	Standards		
Miljøfyrtårn	https://www.miljofyrtarn.no/	Norway	NORCE	Standards		
Soil Association	https://www.soilassociation.or g/our-work-in-scotland/	Scotland	SAMS	Standards, association		
Aquaculture Stewardship Council	https://www.asc-aqua.org/	The Netherlands	SAMS	Certification body, association		
Lloyds Register	https://www.lr.org/en-gb/	UK	SAMS	Standards		

Organisation name	Website	Country	ASTRAL partner	Keyword***		
Sector 11: Other						
Prevent	https://www.prevet.com.br/	Brazil	МОР	Research & Development, service supplier		
Bioresources Development Center, Bayelsa	http://www.biodec.gov.ng/	Nigeria	NIOMR	Government office		
Niger Delta Basin Development Authority, Port Harcourt	http://www.biodec.gov.ng/	Nigeria	NIOMR	Government office, aquaculture producers		
Ogun-Oshun River Basin	https://www.linkedin.com/co mpany/oorbda/	Nigeria	NIOMR	Government office		
Amanzi Biosecurity	http://www.amanzivet.co.za/	South Africa	UCT	Animal health		
Amathemba	http://amathemba.com/	South Africa	UCT	Consulting		
Anchor Environmental Consultant	https://www.anchorenvironm ental.co.za/	South Africa	UCT	Government office		
aQua-design	https://naturalswimmingpools .co.za/contact.shtml	South Africa	UCT	Consulting, systems		
Aquaculture Innovations	https://www.aquaafrica.co.za/	South Africa	UCT	Consulting, training		
AquaEco	https://www.aquaeco.co.za/	South Africa	UCT	Consulting		
Deep Blue Aquatic Systems	http://deepblueaqua.net/	South Africa	UCT	Systems, service supplier		

