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WGSEDA - Working Group on Socio-Economic Dimensions of Aquaculture

2023/MT/ASG01 The **Working Group on Social and Economic Dimensions of Aquaculture** (WGSEDA), chaired by Gesche Krause, Germany and Ramón Filgueira, Canada, will work on ToR and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2024	May 2024 (exact dates TBD)	University of Leeds, England	Interim e-evaluation	
Year 2025	TBD	University of Santiago de Compostela	Interim e-evaluation	
Year 2026	TBD	TBD	Scientific report by TBD	

ToR descriptors

ToR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Tools & Methods: Identify and develop methods to determine the social and economic effects of aquaculture	Continuous ToR to study the social, cultural, and economic implications of aquaculture production. Methods of how to capture and document observations on the social and economic effects of aquaculture development are still emerging, especially in relation to how to address these social effects across different scales and contexts of the industry. Links to Science plan topic "Sea and society".	7.1, 7.2	3 years	Summary within Report, and Research paper.

b	Trends & Trajectories: Identify trajectories and monitor emerging topics of social and economic concerns of aquaculture development	Continuous ToR to identify the emerging social and economic issues of aquaculture and related science advisory needs for maintaining the sustainability of living marine resources and protecting the marine environment. Further, factors causing an aquaculture system to garner social opposition/acceptance and if these factors are shared or differ across different aquaculture systems and countries. Links to Science plan topics “Seafood production”, “Emerging techniques and technologies” and “Sea and society”.	4.5, 5.8, 7.1	3 years	Summary within Report, and Policy Brief.
c	Transition to Sustainability: Explore governance and other social and economic interventions important for aquaculture development and the circular economy.	Continuous innovation and development in the aquaculture sector may pose new challenges to society or help to overcome issues. Further, new challenges arise as well due to climate change or broader societal and economic changes. Governance and other social and economic interventions need to adapt to provide a cost-effective and meaningful way to boost the sustainability of aquaculture. This ToR aims to identify trade-offs and suggest more contextualized aquaculture policies and measures to foster sustainability in a changing world. Links to Science plan topics “Conservation and management science” and “Sea and Society”.	6.2, 7.4	3 years	Summary within Report, and Research Paper.

d	Towards Transdisciplinarity: Foster collaboration with other ICES working groups	Aquaculture development requires transdisciplinarity to reach sustainability from a holistic standpoint. WGSEDA generates tools, methods, and recommendations that emphasize the social and economic dimensions of sustainability. WGs with potential synergies with WGSEDA will be identified, and chairs will be approached to discuss potential future collaborations. This will increase the impact of WGSEDA and may help each other to efficiently use resources and overcome lack of availability of social scientists to support advice and assessment in other areas of ICES. This ToR contributes to the Science Plan topic "Sea and Society".	7.6	3-years	Collaborative work with other WGs, and Online Workshop.
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Summary of the Work Plan

Year 1	Publish the perspective paper "Regionalisation alone will not make marine aquaculture more sustainable" (ToR a), finalize the Policy Brief " Exploring the gaps of aquaculture development policies through their social acceptability" (ToR b), discuss emerging topics of social and economic concerns of aquaculture development (ToR b), and interact with other working groups to explore WGSEDA synergies within ICES (ToR d).
Year 2	Publish the Policy Brief " Exploring the gaps of aquaculture development policies through their social acceptability" (ToR b), start working on the exploration of governance and economic interventions important for the social and economic dimensions of aquaculture (ToR c), discuss emerging topics of social and economic concerns of aquaculture development (ToR b), and keep fostering the interaction with other working groups (ToR d).
Year 3	Finalize deliverable on governance and economic interventions important for the social and economic dimensions of aquaculture (ToR c), start new deliverable related to ToR a or ToR b based on the discussion on emerging topics, discuss emerging topics of social and economic concerns of aquaculture development (ToR b), and keep fostering the interaction with other working groups (ToR d).

Supporting information

Priority	The current activities of this Group will lead ICES into issues related to the impacts of seafood production (aquaculture) on society focusing on economic and social aspects. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 8-16 members and guests. During the virtual meeting in 2020, 25 members/guest attended.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	ACOM, WGEIA
Linkages to other committees or groups	Through the shared ToR a close working relationship will be build up with WGAGFA. It is also very relevant to the Working Group on WGSOCIAL, WGSCENARIO, WGICZM, WGMSP.
Linkages to other organizations	

WGAGFA - Working Group on Application of Genetics in Fisheries and Aquaculture

Was transferred from ASG to DSTSG in 2024

WGREIA - Working Group on Risks assessment of Environmental Interactions of Aquaculture

2023/MT/ASG03 The Working Group on Risk assessment of Environmental Interactions of Aquaculture (WGREIA), chaired by Ellen Sofie Grefsrud, Norway will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2024	27-30 May	Coimbra, Portugal	E-evaluation	
Year 2025	TBD	TBD	E-evaluation	
Year 2026	TBD	TBD	Final report by TBD	

ToR descriptors

TO R	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
	This should capture the objectives of the ToR	Provide very brief justification, e.g. advisory need, links to Science Plan and other WGs	Use codes (<i>max 3 per ToR</i>)	1, 2 or 3 years	Specify what is to be provided, when and to whom
a	Workshop on risk assessment methodology. The group will choose one or two case studies and conduct risk assessments based on different methods aiming to identify the most efficient, understandable and useful way of doing environmental risk assessment of aquaculture impacts.	Various methodologies are used for environmental risk assessments (ERA) and it is a need (both by scientists and advisors) to develop a common platform for ERA in aquaculture. We will compare ERA methodology used by ICES countries and China and evaluate the usefulness, validity and reliability of the two methodological approaches.	5.5, 5.6, 6.3	Year 1, 2	Scientific paper based on the results of the workshop. Journal for publishing could be e.g. ICES Journal of Marine Science or similar

b	Establish common risk terminology for use in environmental risk assessments.	Common risk terminology is crucial for communicating risk between risk assessors and risk managers. Today there is a lack of common risk terminology, not just between risk assessors and risk managers, but also between risk assessors from different fields of research. Based on the latest thinking in risk science we aim to bridge this gap and further use the outcome as a starting point to improve risk communication between scientist, risk managers, decision makers and other stakeholders.	5.5, 6.1	Year 1, 2, 3	Technical report and ICES document guidance on common terminology for environmental risk assessments to improve communication with risk managers, decision makers and other stakeholders within the field of aquaculture. (Part 1)
c	Communication of uncertainty in environmental risk assessments.	The goal of a risk assessment is to create risk understanding and risk acknowledgement to support decision-making under uncertainty, but one of the major challenges is how to incorporate various dimensions of uncertainty in risk assessments.	6.4	Year 2, 3	Technical report and ICES document guidance on how to communicate uncertainty in environmental risk assessments to risk managers, decision makers and other stakeholders. (Part 2)

Summary of the Work Plan

YEAR	
Year 1	ToRa (Review of laws and regulatory standards for monitoring and prioritised research) will be reported as a peer-review paper, and ToR b (Risk assessment methods) will be initiated.
Year 2	Continue discussion on risk assessment methods aiming to make a foundation for a common understanding on best practice within risk assessment and risk analysis of environmental impact of aquaculture. Peer-review publication of when and how risk assessment is used for aquaculture
Year 3	ToRb will be reported included a TIMES publication detailing Risk assessment methods for environmental impacts of aquaculture

Supporting information

Priority	The current activities of this Group will continue to lead ICES into issues related to aquaculture including elucidating the legal structure under which the environmental interactions of aquaculture are managed in different ICES countries. Scientific work on ecosystem interactions will lay the scientific foundation for further sustainable aquaculture growth to meet or surpass legal requirements. Consequently, these activities are considered to have a high priority.
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Resource requirements	
Participants	The Group will be established of 15-25 experts of aquaculture - environment interactions, regulators, legal expertise, risk experts and others
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	This WG sets the stage for future advice products from ICES as governments need to do risk assessment of the growing aquaculture industry in Europe and North-America.
Linkages to other committees or groups	There is a very close working relationship with all the groups of the Aquaculture Steering Group. We will seek to form links with the Working Group on Socio-Economic Dimensions of Aquaculture (WGSEDA) Working Group on Pathology and Diseases of Marine Organisms (WGPDMO), Working Group on Application of Genetics in Fisheries and Mariculture (WGAGFM), Working Group on Scenario Planning on Aquaculture (WGSPAQ), and Working Group on Ecological Carrying Capacity (WGECCA)
Linkages to other organizations	National regulatory authorities in ICES countries and China, EU, FAO.

WKGNSAO - Workshop on the Greater North Sea ecoregion Aquaculture Overview

2023/WK/ASG04 Workshop on the Greater North Sea ecoregion Aquaculture Overview (WKGNSAO) chaired by Ellen Sofie Grefsrud, Norway*, Marnix Poelmann, Netherlands*, and Henn Ojaveer, ICES* will be established and meet (hybrid meeting) in Copenhagen, Denmark during September-October (dates TBD) 2024 to:

- a) Review and report the data and information collected for the Greater North Sea ecoregion aquaculture overview, identify the gaps and agree next steps to complete the draft overview;
- b) Collate datasets and information resources used in the development of the aquaculture overview by completing the ICES Data Profiling Tool (<https://www.ices.dk/data/tools/Pages/Data-profiler.aspx>); and
- c) Produce a workshop report detailing the conclusions of ToRs a and b. This report will serve as the foundation for the Greater North Sea ecoregion aquaculture overview.

WKGNSAO will report by TBD for the attention of the ACOM.

Supporting information

Priority	Aquaculture is a high-priority topic for ICES. ICES efforts on aquaculture is part of a wider portfolio of work that seeks to advance and share scientific understanding of marine ecosystems and the services they provide, and to use this knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals. The ICES Strategic Plan states: 'We will regularly publish, update, and disseminate overviews on the state of fisheries, aquaculture, and ecosystems in the ICES region, drawing as appropriate on analyses of human activities, pressures, and impacts, and incorporating social, cultural, and economic information.'
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Scientific justification	The process of establishing ICES AOs was initiated in 2019, with: i) forming a core group consisting of representatives from ACOM leadership, SCICOM and Secretariat, and ii) agreeing on the directions and procedure of further work of the core group. The objectives AOs are to: i) synthesise regional and temporal information on aquaculture activities, practices and production of the cultured taxa; ii) consider environmental and socioeconomic interactions of aquaculture activities and practices; iii) provide insights on cross-sectorial interactions of aquaculture; and, iv) consider future perspectives. The overview will have ten sections: 1) executive summary; 2) introduction; 3) description and location of marine aquaculture activities and practices; 4) production over time; 5) policy and legal foundation; 6) management frameworks; 7) ecosystem/environment interactions; 8) social and economic context; 9) interaction of environmental, economic and social drivers; and 10) future projections, and emerging threats and opportunities.
Resource requirements	There are already suggested experts from several countries (Norway, England, Scotland, Denmark, Netherlands, Germany and France). The lead authors of the Greater North Sea ecoregion AO have started establishing contacts with these experts.
Participants	The WK will be attended by experts contributing to the Greater North Sea ecoregion AO, as well as other interested scientists from ASG.
Secretariat facilities	Setting up conference calls and hosting physical meeting.
Financial	No financial implications.
Linkages to advisory committees	Direct link to ACOM.
Linkages to other committees or groups	ASG, HUDISG, WGAGFA, WGECCA, WGOOA, WGPDMO, WGREIA, WGSEDA, WGEEL, WGSOCIAL, WGECON, SICCME.
Linkages to other organizations	DGMARE

Resolutions approved in 2022

WKBBoBICAO - Workshop on the Bay of Biscay and Iberian Coast ecoregion Aquaculture Overview

2022/WK/ASG01 Workshop on the Bay of Biscay and Iberian Coast ecoregion Aquaculture Overview (WKBBoBICAO) chaired by Myriam Callier, France*, and Francis O’Beirn, Ireland*, will be established and meet (hybrid meeting) in Sète, France (Ifremer Station) in 3–5 October 2023 to:

- d) Review and discuss the data and information collected for the Bay of Biscay and Iberian Coast ecoregion aquaculture overview, identify the gaps and agree next steps to complete the draft overview;
- e) Collate datasets and resources for the aquaculture overview by completing the ICES Data Profiling Tool (<https://www.ices.dk/data/tools/Pages/Data-profiler.aspx>); and
- f) Produce a workshop report detailing the conclusions of ToRs a and b. This report will serve as the foundation for the Bay of Biscay and Iberian Coast ecoregion aquaculture overview.

WKBBoBICAO will report by January 2024 for the attention of the ACOM.

Supporting information

Priority	<p>Aquaculture is a high-priority topic for ICES. ICES work on aquaculture is part of a wider portfolio of work that seeks to advance and share scientific understanding of marine ecosystems and the services they provide, and to use this knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals.</p> <p>The ICES Strategic Plan states: ‘We will regularly publish, update, and disseminate overviews on the state of fisheries, aquaculture, and ecosystems in the ICES region, drawing as appropriate on analyses of human activities, pressures, and impacts, and incorporating social, cultural, and economic information.’</p>
Scientific justification	<p>The process of establishing ICES AOs was initiated in 2019, with: i) forming a core group consisting of representatives from ACOM leadership, SCICOM and Secretariat, and ii) agreeing on the directions and procedure of further work of the core group. The objectives AOs are to: i) synthesise regional and temporal information on aquaculture activities, practices and production of the cultured taxa; ii) consider environmental and socioeconomic interactions of aquaculture activities and practices; iii) provide insights on cross-sectorial interactions of aquaculture; and, iv) consider future perspectives. The overview will have ten sections: 1) executive summary; 2) introduction; 3) description and location of marine aquaculture activities and practices; 4) production over time; 5) policy and legal foundation; 6) management frameworks; 7) ecosystem/environment interactions; 8) social and economic context; 9) interaction of environmental, economic and social drivers; and 10) future projections, and emerging threats and opportunities.</p>
Resource requirements	<p>There are already several confirmed experts (as suggested by ACOM members) from France, Spain and Portugal to agree to contribute to the work. The lead author of the Bay of Biscay and Iberian Coast ecoregion AO (Myriam Callier) has already started establishing contacts with these experts.</p>
Participants	<p>The WK will be attended by experts contributing to the Bay of Biscay and Iberian Coast ecoregion AO, as well as other interested scientists from ASG.</p>
Secretariat facilities	<p>Setting up conference calls.</p>
Financial	<p>No financial implications.</p>

Linkages to advisory committees	Direct link to ACOM.
Linkages to other committees or groups	ASG, WGAGFA, WGECCA, WGOOA, WGPDMO, WGREIA, WGEDA, WGSPA, WGEEL, WGSOCIAL, WGECON, SICCME, SIHD
Linkages to other organizations	DGMARE

WGOOA - Working Group on Open Ocean Aquaculture

2022/MA2/ASG03 A **Working Group on Open Ocean Aquaculture** (WGOOA), chaired by Tyler Sclodnick, Canada, and Bela H. Buck, Germany, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2023	9–12 May	Portland, ME, USA	Interim report by July 7, 2023	
Year 2024	21–23 August	Malmo, Sweden	Interim report by July 26, 2024	
Year 2025	TBD	TBD	Final report by July 30, 2025	

ToR descriptors

TO R	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Describe the effect of OOA on ecosystem health, ecosystem services, carbon footprint, carrying capacity, and resource value relative to alternative uses including traditional nearshore farming	Uncompleted ToR from 2018 resolution. This ToR remains an important area of investigation as aquaculture of all forms is frequently criticized for negative environmental impacts and held to higher standards than incumbent ocean uses and protein producers. A thorough understanding of these factors is essential to industry planning and the effective communication and promotion of open ocean farming.	5.6, 5.7, 5.8, 6.6	Years 1 & 2	Review paper

b	Review the regulatory environment for several key ICES countries to assess their effectiveness at encouraging industry development, protecting natural resources, and accomodating competing ocean user groups	As an emerging industry, aquaculture, and open ocean aquaculture in particular, is subject to a diverse array of regulatory environments, many of which are still developing. The effectiveness of these regulatory systems in encouraging development while protecting resources and managing competing uses is widely varied. Many of these challenges are unique to open ocean operations. Providing a review, through a scientific and industry-development lense, would enable the WG to make a recommendation to ICES on how the industry can be most effectively managed.	5.5, 5.7, 5.8, 7.5	Year 1 & 2	Position paper
c	Investigate and describe key differences in capital expenses, operations, and production efficiencies between open ocean farms and traditional nearshore farms to characterise financial potential of open ocean aquaculture in different environments.	Several open ocean facilities for each major species group (seaweed, bivalve, and finfish) have been in operation for several years, creating an opportune time for new insights. Aquaculture is ultimately a business activity and it is critical to consider the economic potential of open ocean farming, especially relative to other farming methods.	5.7, 5.8, 7.3	Years 2 & 3	Review paper
d					

Summary of the Work Plan

Year 1	THE FIRST PRIORITY IS TO COMPLETE EFFORTS OF THE PREVIOUS TORs. WE WILL ENSURE WE HAVE THE NECESSARY EXPERTISE WITHIN THE GROUP TO COMPLETE THE CURRENT RESOLUTION AND RECRUIT NEW MEMBERS TO FILL ANY GAPS. RESEARCH AND ANALYSIS WILL BEGIN ON TORs A & B.
Year 2	Work will continue on TORs A & B as well as coordinating publication. Efforts will begin on TOR C.
Year 3	Complete and publish remaining work.

Supporting information

Priority	Open ocean aquaculture is an important and growing industry in the ICES region and is likely to become a major ocean use and significant producer of sustainable seafood. As a new sector, the industry is at a critical junction and can benefit greatly from expert analysis.
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Resource requirements	The working group operates mainly on the volunteered time of its membership. Although obtaining time commitment can be challenging, the team is committed to the completion of this work. Additional resource requirements are negligible. The group will cooperate and engage with funded research projects to extent resource usage where specific opportunities allow.
Participants	The working group is normally attended by 20–25 members consisting of biologist, farmers, engineers, economists, and spatial analysts from academia and industry.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	This project sets the stage for future advice products from ICES as governments need to manage open ocean aquaculture development.
Linkages to other committees or groups	There is a close working relationship with all the groups of the Aquaculture Steering Group. We will seek to form links with the Working Group on Socio-Economic Dimensions of Aquaculture (WGSEDA), Working Group on Pathology and Diseases of Marine Organisms (WGPDMO), Working Group on Application of Genetics in Fisheries and Mariculture (WGAGFM), Working Group on Environmental Interactions of Aquaculture (WGEIA), Working Group on Scenario Planning in Aquaculture (WGSPA), and Working Group on Ecological Carrying Capacity in Aquaculture (WGECCA). There are also likely linkages to other groups not listed.
Linkages to other organizations	EFARO, EATiP, DGMARE, AORA, EAS (European Aquaculture Society), WAS, NOAA, DFO, SINTEF, Cawth. Industry – aquaculture businesses and producer groups, marine management organizations.

Resolutions approved in 2020/2021

WGECCA - Working Group on Ecological Carrying Capacity in Aquaculture

2021/FT/ASG01 A Working Group on Ecological Carrying Capacity for Aquaculture (WGECCA), chaired by Carrie J. Byron, USA, and Dror Angel, Israel, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2022	26 September (monthly meetings)	Online	Interim e-evaluation	
Year 2023	Monthly	Online	Interim e-evaluation	
Year 2024	TBD	TBD	Final report by date TBD to SCICOM	

ToR descriptors

TO R	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
	This should capture the objectives of the ToR	Provide very brief justification, e.g. advisory need, links to Science Plan and other WGs	Use codes (<i>max 3 per ToR</i>)	1, 2 or 3 years	Specify what is to be provided, when and to whom
a	Estimate the development potential of underutilized lower trophic level aquaculture species in ICES countries including (i.e. macroalgae, invertebrates, detritivores) towards understanding carrying capacity thresholds. Identification of social, economic and environmental advantages, barriers and knowledge gaps; recommendations for research.	The cultivation of lower trophic level (LTL) species has been proposed as the most sustainable approach to optimize biomass extraction from the ocean. Many of the LTL species, e.g., macroalgae, invertebrates are not widely cultivated in Europe and the Americas. This review will identify social, economic and environmental barriers, priorities, advantages, and knowledge gaps within LTL aquaculture.	5.5	year 1-2	ICES report to inform future research proposals.

b	A review of the transfer of energy and nutrients between farm sites (e.g., algae, bivalves, finfish) and the surrounding ecosystem as it influences carrying capacity limits; Identification of knowledge gaps and recommendations for research.	It is not clear if energy and nutrients derived from aquaculture sites is a net benefit or detriment to wild populations. There is a need to provide an overview of the transfer of energy between farm sites and the surrounding environment and the implications of this to the greater ecosystem and associated organisms. The review will include the identification of knowledge needs and priorities in this new ToR.	5.6, 1.3, 1.4	Year 1-2	Manuscript for publication
c	Review Ecological Carrying Capacity (ECC) monitoring techniques with potential to identify more efficient applications to support ECC as a management strategy.	Given the current levels of understanding and experience in the implementation of ECC monitoring, there is now a need to explore the possibility of developing guidelines for more cost effective, less data intensive ECC monitoring techniques. It is important that these guidelines draw on expert knowledge to (i) identify the environmental drivers relevant to the types of aquacultures being monitored and the waterbody they occur in (ii) provide guidance on the choice of proxy for ECC and (iii) guide the establishment of the ECC thresholds.	6.1	Year 3	ICES report of identified knowledge gaps for future research

Summary of the Work Plan

Year 1	Gather background information and begin typing summaries of findings for ToR a & b.
Year 2	Write report and manuscript for ToR a & b. Begin preliminary work for ToR c.
Year 3	Synthesize information and write report for ToR c.

Supporting information

Priority	The current activities of this Group will inform ICES on issues related to the ecological carrying capacity for different aquaculture species in different regions. Consequently, these activities are considered to have a very high priority.
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Resource requirements	None at this time.
Participants	The Group is normally attended by a dozen members.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	There are no obvious direct linkages.
Linkages to other committees or groups	There is a very close working relationship with all the working groups in ASG.
Linkages to other organizations	

WGPDMO - Working Group on Pathology and Diseases of Marine Organisms

2021/FT/ASG02 A Working Group on Pathology and Diseases of Marine Organisms (WGPDMO), chaired by Richard Paley (United Kingdom) will work on ToR and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS
Year 2022	TBD			Change of chairs: Ryan Carnegie (US) will step down and be replaced by Richard Paley (United Kingdom)
Year 2023	7-10 March	ICES, HQ	Interim report by 1 May to ASG	
Year 2024	TBD	TBD	Final report by 1 May to ASG	

ToR descriptors

TO R	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Summarize new and emerging disease trends in wild and cultured fish, molluscs and crustaceans based on national reports.	New disease conditions and trends in diseases of wild and cultured marine organisms will be reviewed. This is an annual, ongoing ToR for WGPDMO and will provide information for ToRs b-e.	Code 1.7, 5.2, 5.6	3 years	Summary in annual reports
b	Deliver leaflets on pathology and diseases of marine organisms.	A number of ICES publications currently in preparation will be reviewed by WGPDMO. This is an ongoing, annual ToR.	Code 1.7, 5.6	3 years	Publications in ICES Identification Leaflets for Diseases in Fish and Shellfish

c	Continue to refine application of the Fish Disease Index (FDI).	Results of assessment of the FDI will be reviewed as it continues to be applied to new fish systems, and data harmonization and quality assurance will be addressed as refined guidelines are produced for FDI application.	Code 1.7, 2.5	3 years	Summary in annual reports
d	Provide expert knowledge and management advice on fish and shellfish diseases, if requested, and related data to the ICES Data Centre.	This is an annual ToR in compliance with requests from the ICES Data Centre.	Code 6.4	3 years	Reporting as requested
e	Develop a synthesis integrating pathogen life history and ecology and the approaches to, and effectiveness of, management of different pathogens	Understanding the effectiveness of different approaches to disease management in aquaculture and fisheries is critical for disease control. Yet the pathogens of key resource species vary greatly in their biology and their ecological roles, with some management strategies likely to be more effective than others given the biological and functional diversity of host-pathogen relationships. This ToR will use a global synthesis of these relationships as well as approaches to management to identify strategies most likely to be effective for different types of disease systems.	Code 1.4, 1.7, 5.6	Year 1	Peer-reviewed journal article

Summary of the Work Plan

Year 1	Complete annual work on ToRs a-c, and if necessary ToR d. Complete ToR e. Consider proposal of new ToRs as necessary. Complete interim report.
Year 2	Complete annual work on ToRs a-c, and if necessary ToR d. Consider proposal of new ToRs as necessary. Complete interim report.
Year 3	Complete annual work on ToRs a-c, and if necessary ToR d. Consider proposal of new ToRs as necessary. Complete final report for the cycle.

Supporting information

Priority	The current activities of this Group provide essential perspective on diseases of economic and ecological significance in the ICES, including intersections with fisheries and aquaculture industries. Identifying strategies for aquatic animal health management through a better understanding of diseases is a fundamental interest. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 15-20 members and guests.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	There are no obvious direct linkages.
Linkages to other committees or groups	There is a close working relationship with all the groups in the ASG.
Linkages to other organizations	

EGs dissolved in 2023

Res. Code	EG name	Chairs
2022/WK/ASG04	Workshop on the Faroes ecoregion Aquaculture Overview	Gunnvør á Nordi and Henn Ojaveer