Working Group on Scenario Planning on Aquaculture (WGSPA)

2018/MA2/ASG01 A **Working Group on Scenario Planning on Aquaculture (WGSPA)**, chaired by Ben **Halpern**, USA, will be established and will work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2018	8–10 November	ICES HQ, Copenhagen, Denmark	Interim report by 1 March	Seminar/ scoping meeting
Year 2019	7-8 September	Gothenburg, Sweden	Interim report by 30 November	
Year 2020	15-16 October	By correspondence	Interim report by 13 November	
Year 2021			Final report by Date	

ToR descriptors

ToR	Description	Background	Science Plan codes	Duration	Expected Deliverables
a	A review of the application of Scenario planning for aquaculture, Identification of knowledge gaps and recommendations for research	There is a need to determine the state of the art in scenario planning and how this has been applied in aquaculture. It can be done through an exhaustive literature revision including "grey" material and the results of previous aquaculture scenarios. In addition to reviewing the use and application of scenario planning in other areas. The review will include the identification of knowledge needs and priorities in this new area and develop a coherent proposal for research and funding.	5.5, 6.1, 7.1	Yr 1 & 2. (2018, 2019)	To be reported on as a review.
b	Develop Scenario plan for one region in the ICES area (potentially the same region as choosen for the first atlas)	Encourage the development of one international project on scenario planning to complement the work under ToR a. Will require planning in yr 2 from the position paper, identification of potential resourcing and proposal development.	5.5, 6.1, 7.1	Yr 3-4 (2020-2021)	To be reported scenario planning for aquaculture.
c	Integration of Scenario planning and Atlas approaches to one product capable of communicating the	Encourage the development of one international project building on the products and techniques developed in ToR a, b and c to an example of a	5.5, 5.7 ,7.6	Yr 3-4 (2020-2021)	2020 – Submit proposal for Viewpoint to SCICOM/ACOM 2021 - Publish paper

environmental, economic and social options of marine aquaculture development in one region in the ICES area.	complete science-based analysis of the potenital and consequences of marine aquaculture development for one region in the ICES area .	for focus region.

Summary of the Work Plan

Year 1	Hold a seminar as part of the first Working Group meeting to establish this area of science and identify additional experts to join the WG.
Year 2	Develop an outline for an Atlas of marine aquaculture potential for one region in the ICES area. Provide a review and position paper on Scenario Planning in aquaculture together with knowledge gaps and recommendations for research.
Year 3	Further ToR to be developed out of the position paper. To include a scenario to be chosen in yr 2. Expand and improve Atlas to an opperational level for one example region in the ICES area .
Year 4	Integrate two approaches. International cooperation through a research project on aquaculture potential analysis. Publish paper for focal region.

Supporting information

Priority	There is a high priority for scientifically informed planning for marine aquaculture. This has been successfully applied in other areas by the use of scenario planning where potential multiple future scenarios are possible that provide uncertainty regarding the stability of policies or conditions and where adaptation is likely to be required and yet unpredictable. Information from multiple points of view (economic, environmental, social, geographical, oceanographical and so on) that is both general and specific to a place is needed for planning to be meaningful. There are now some marine spacial analysis approaches that allow potential to be analized for specific locations (see Kapetsky et al 2013, Gentry et al 2017 and Lester et al 2018) e.g. not only what could happen, but where, what inputs would be needed and what outputs could be expected. While there has been some application of scenario planning and spacial analysis in aquaculture this has yet to be evaluated in scientifc terms and applied in a consistant way. For example, scenario planning has been used in evaluating investment opportunities and predicting returns on investment but not in a particularly robust way. It is proposed that the working group develop the methodologies for spacial analysis and scenario planning for Aquaculture in the ICES area that enables: 1. Researchers to develop realistic options for industry development and to evaluate the impact of different policies. 2. Future Experts Groups to further develop tools to evaluate resilience to environmental change, diseases and parasites, resouce needs, implications of managemnet decisions and so on focused on a specific geography. 2. Governments and populations from a variety of jursdictions to understand the implications and options of marine aquaculture development in their areas. 4. Industry and local populations to have a discription of the production potential in a format that will allow meaningful econmic impact modelling for a specific jurisdiction. This is not about predicting the future but evaluating what different future scenarios mean, trade-offs among scenarios and for example, how scenarios interact with the different policies, changes and demands likely to happen in the future, within a realistic place-based context.
Resource requirements	There is limited current work in this area and part of the ToR are to evaluate the requirements. It is envisaged that an international project will be developed by the

	working group which could consider how to cooperate on currently funded research but more likely need to develop and seek resources to work on specific scenarios. Modelling and GIS capacity could be limiting and it will be important to engage other relevant ICES experts in this area and bring together the knowledge and technical expertise.
Participants	This is a new group and expected attendance is 15-20 members.
Secretariat facilities	Standard secretarial support. Meeting room at ICES HQ.
Financial	No financial implications envisaged for ICES.
Linkages to ACOM and groups under ACOM	This project sets the stage for future advice products from ICES as governments need to manage aquaculture development based upon knowledge of the economic and social benefits and risks.
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 andAquaculture (WGAGFA) and proposed Working Groups on Environmental Interactions of Aquaculture (WGEIA) and Ecological Carrying Capacity in Aquaculture (WGECCA).
Linkages to other organizations	EFARO, EATiP, Industry – aquaculture businesses and producer organisations, marine mangement organisations, EAS (European Aquaculture Society), WAS, NOAA, DFO.