

A scenic landscape photograph of a calm lake surrounded by dense green forests. In the background, snow-capped mountains rise under a sky with scattered white clouds. A small, rectangular floating structure, possibly an aquaculture cage, is visible in the middle of the lake.

Indigenous and Multi-stakeholder Advisory Body on Aquaculture

February 12, 2020



IMAB Terms of Reference

- Provide **guidance** and receive reports from three Working Groups, which will focus on:
 - Area-Based Approaches to Aquaculture Management
 - Aquaculture Production Technologies
 - Marine Finfish and Land-Based Fish Health
- Provide a forum for participants to **discuss, advise** and **learn** about aquaculture management.
- Identify opportunities for **collaboration**.
- **Propose/advise** DFO of specific actions to improve aquaculture management in British Columbia.
- **Communicate** recommendations **publicly**.



Alternative Production Technologies



Alternative Production Technologies (APT TWG)

Terms of Reference:



1. Review **recent studies** on alternative technologies for aquaculture and provide recommendations;



2. Propose **objectives for alternative technologies** that the Government of Canada could establish to lower environmental risks associated with aquaculture production;



3. Identify **opportunities for collaboration** and partnership to assist adoption in the Pacific Region;



4. Identify key risk factors that hinder adoption of alternative technologies and propose solutions to minimize these risks; and



5. Propose actions to attract investment in B.C. sector.



APT TWG Deliberations to Date



Despite only two meetings, good progress to date;



Identification of hindrances to adoption and actions to overcome them;



Draft framework of final report and recommendations, including table on hindrances and incentives.



APT TWG Objective 1:

Review of relevant reports and info

- Group has reviewed 20+ relevant reports, papers and news articles from Canada, US, Norway and international organizations to inform discussions.
- Some main topics include: production systems, technologies, incentives, approaches in different jurisdictions and permitting.



APT TWG Objective 2:

Propose a series of objectives for alternative technologies which lower environmental risk factors

- Consensus to remain technology-neutral; all new production systems will improve environmental performance.
- Suggestion that the report include a fact vs. fiction section on alternative technologies, to help debunk the myths about aquaculture production processes.

APT TWG Objective 3:

Identify opportunities for collaboration and partnership

- Preliminary discussions to identify opportunities for collaboration have taken place, including the idea to create of a multi-stakeholder advisory board to create/evaluate a licensing regime for alternative technologies.
- Discussions also highlighted the multi-jurisdiction nature of such a licensing regime and thus the importance of federal/provincial/municipal collaboration.



APT TWG Objective 4:

Identify key risk factors that hinder adoption of alternative technologies and propose solutions to minimize these risks

- The group has focused much effort on identifying hindrances.
 - A comprehensive table has been created and will be included in final report. Notably, the issue of how to deal with effluent and solid waste has been identified as a key obstacle.
- Several key themes have emerged:
 - **Permitting and Licensing/Regulatory**
 - **Financial**
 - **Knowledge/R&D**
 - **Public Trust**



APT TWG Objective 5:

Propose actions that could attract investment into BC aquaculture sector, allowing for sustainable growth

- Draft report is in development and further discussions underway.
- There is consensus that the development of a permitting process with clear performance standards, is a priority.



APT TWG Next Steps



**February 19 and
March 11 meetings**



**Continued work on
draft report with a
focus on hindrances
and potential
actions to overcome**



**Development of
report &
recommendations**



Marine Finfish and Land-based Fish Health



Marine Finfish and Land-based Fish Health

Overall objectives:



1. Provide a forum for discussing Federal actions underway and planned related to aquaculture management



2. Promote dialogue and improve shared understanding of aquaculture management



3. Identify opportunities for collaboration and partnership to improve aquaculture management in the Pacific Region

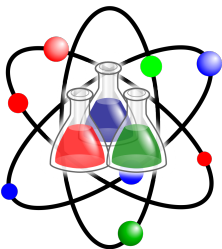
Marine Finfish and Land-based Fish Health

Deliberations to date:

The group has been very active, meeting a total of eight times to date.



Discussions have focused on DFO's overall framework for aquaculture fish health management and Departmental actions for specific fish health topics including PRV, HSML/Jaundice Syndrome and sea lice management.



Participants are highly engaged, but frequently hold strongly divergent views on these topics. Discussions are regularly challenging and the group has struggled to find common ground.



Although, some proposed enhancements have received general support, more work is required to achieve consensus on specific wording.

FH TWG Progress on Overall Objectives



1. Provide a forum for discussing Federal actions underway and planned related to aquaculture

- Vigorous discussions on; enhancements to the sea lice management conditions of licence (COL) for 2020 & 2022; on-farm monitoring for HSMI & Jaundice Syndrome; introduction of targeted audits in response to novel/high-risk occurrences at marine finfish farms;



2. Promote dialogue and improve shared understanding of aquaculture management

- Lots of information sharing on current Dept. aquaculture management framework and presentations on alternative approaches that stimulated dialogue;
- Additional work required to build shared understanding.



3. Identify opportunities for collaboration and partnership to improve aquaculture management in the Pacific Region

- Some collaboration opportunities identified to augment Dept. Information holdings through compilation & integration of data from external sources. e.g. wild salmon sea lice data



Marine Finfish and Land-based Fish Health

Specific tasks in Terms of Reference:



1. Undertake **a review of existing marine finfish aquaculture fish health management** regimes internationally;



2. Review **previous audits and assessments** of DFO's fish health management regime;



3. Recommend **improvements** to the Pacific Region's fish health management regime.



FH TWG Task 1:

Review existing fish health management regimes

- Limited literature on overall management frameworks from other jurisdictions;
- TWG reviewed specific health management issues across multi-jurisdictions, including PRV-HSML-Jaundice and sea lice management and related monitoring.
- HSML/Jaundice Syndrome definition, diagnosis and sub-clinical signs referred to qualified vets & vet, pathologists (Jan. 28-29 workshop) to inform TWG review and recommendations for managing these diseases.



FH TWG Task 2:

Review previous audits and assessments

- The 2017 Ausvet report on the DFO Fish Health Audit Program was discussed, progress against recommendations described and efforts to advance others were discussed.
- TWG made progress on identifying areas of focus for future enhancement (fish health reporting, communications, audit program goals and objectives, among others) but further deliberation is required to identify actionable specifics and timeframes for implementation.



FH TWG Task 3:

Recommend improvements to the Pacific Region's fish health management regime

- Some initial recommendations have been identified but specific language has not yet been developed, e.g.:
 - Increase FN participation in DFO's on-farm auditing and intelligence gathering
 - Strengthen adaptive management
 - Increase monitoring
 - Institute requirement for targeted audits of fish farms
 - Establish & implement measurable indices of fish health
 - Improve reporting and communications
- Outcomes of recently completed Vet Workshop expected to inform deliberations & recommendations at a future TWG meeting on how to create 'greater certainty' in fish health & reducing disease risk.



FH TWG - Veterinary Workshop

- Workshop objective: to review and, as appropriate, update DFO's case definitions for HSML and Jaundice Syndrome and related laboratory testing protocols
- Considerable debate amongst some members of the FHTWG on the workshop TORs; strongly polarized views on the topic of observers
- TWG members invited to nominate workshop participants & facilitator (Dr. Ian Gardner was preferred facilitator choice). To ensure a robust review critics of current DFO case definitions and reps from international jurisdictions were included.



Veterinary Workshop Preliminary Results

- Both participants and facilitator report that there was full engagement from all participants and lots of respectful challenge/questioning of evidence/ interpretations/opinions.
- The TOR's called for 5 deliverables and participants confirmed their support for each through voting. Full consensus was not achieved for any but, there was very strong support for all.
- Revised case definitions for both HSMI (population-level) and Jaundice Syndrome (fish- and population-level) were developed as well as a tool to identify a provisional case of HSMI and the steps for subsequent confirmation.
- A draft workshop report is expected by end Feb (target), however, facilitator provided a verbal summary of the workshop outcomes at the Feb 05 FH TWG meeting and entertained a Q&A session.
- The TWG will have opportunity to further consider the outcomes at their Mar meeting.



FH TWG Next Steps



**Friday, March 13,
Final TWG meeting.**



**Finalize
recommendations**



**Development of
report &
submission to
IMAB**



Area-based Approaches to Aquaculture Management





Area-based Management TWG

Terms of Reference:

Objective		Status
1. Review	Relevant examples of approaches to Area Based Management in a fisheries and aquaculture context.	Selective review near completion.
	Use of various geographic scales as management tools and assess their role in Area-based Management of Aquaculture.	In progress.
	Information management technologies used in other related initiatives.	In progress.
2. Develop a recommendation for a shared definition/vision for Area Based Management of Aquaculture within British Columbia.		Complete.
3. Recommend the use of appropriate scale/models for application of area based management of aquaculture in British Columbia.		In progress.
4. Recommend appropriate technologies or approaches that could support ABM.		Selected and limited review initiated.



ABM TWG Objective 1

1. Review relevant examples of **approaches to Area Based Management**;

- TWG has completed a selective review of domestic and international approaches to ABM based on advice/expertise of TWG members.
- Analysis included the identification of lessons learned and conditions for success.

2. Use of **geographic scales** as a management tool and assess their appropriate role in Area-based Management.

- Examination of various geographic scales from site-specific, to areas, to coast-wide and the associated governance considerations.

3. **information management technologies** used in other related initiatives.

- Initial examination of a wide range of potential tools.
- Further analysis to be undertaken.



ABM TWG Objective 2

Develop recommendations for a shared definition and vision for ABAM.

Proposed definition:

- Area Based Aquaculture Management is: a process where governments*, communities and industry work together to spatially plan, manage, monitor and continue to improve aquaculture activities at geographical scales that link jurisdictional, ecological, social, cultural and economic systems. It is a practice that aims to support economic viability while maintaining the long term sustainability of aquatic ecosystems and services.

*(Indigenous, federal, provincial, local)



ABM TWG Objective 2 (cont'd)

Proposed Vision:

“Aquaculture activities are spatially planned and managed at multiple scales as part of interconnected cultural, social and environmental systems through collaborative, integrated, and adaptive processes to achieve sustainability for generations to come.”



ABM Anticipated Outcomes

Anticipated Outcomes

Site-by-site planning & reactive management	⇒	Ecosystem-based planning & proactive management
Consultation with First Nations	⇒	Nation to Nation collaborative planning & management
Single stream science based	⇒	Inclusive knowledge
Closed decision-making process	⇒	Transparent decision-making
Single sector management (aquaculture alone)	⇒	Integrated with other uses (land and marine-based)
Fragmented accountability	⇒	Shared accountability
Food resources at risk	⇒	Enhanced food security and sustainability
Limited economic benefits for coastal and rural communities from aquaculture	⇒	Increased economic benefits for coastal and rural communities from aquaculture
Low public confidence	⇒	Increased social licence



ABM Guiding Principles:

1. Respecting Indigenous Rights and Title
2. Knowledge Based
3. Ecological Integrity
4. Sustainable
5. Resilient to Climate Change
6. Integrated
7. Collaborative
8. Accountable
9. Transparent
10. Precautionary
11. Adaptable
12. Human Well-being

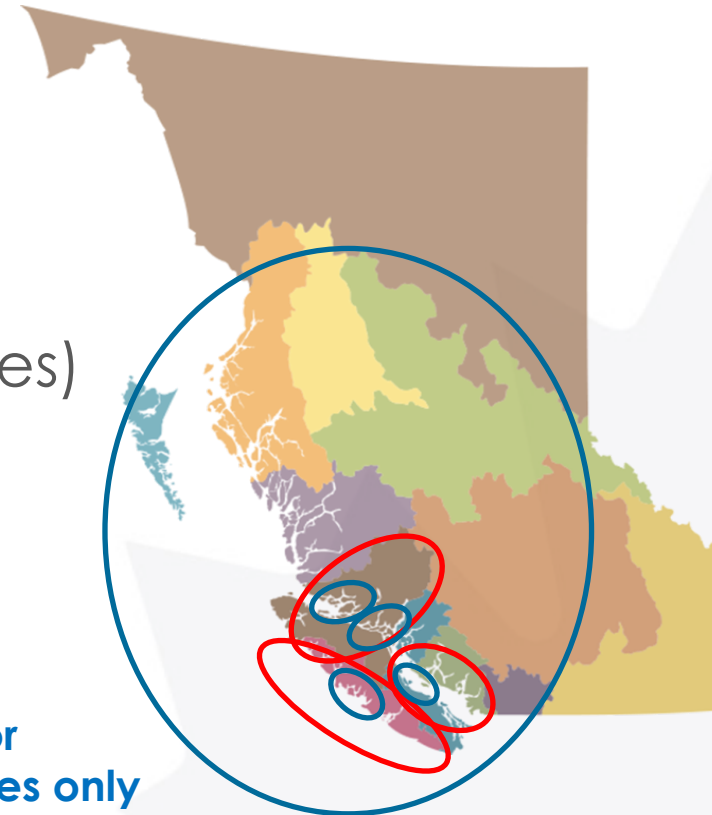


ABM TWG Objective 3

Develop recommendations for the use of appropriate scales/models

4 nested scales suggested:

- Site specific,
- Sound/Inlet scale,
- Area (based on FNFC boundaries)
- Regional (Provincial)



***Areas depicted for
illustrative purposes only**



ABM TWG Objective 3 cont'd

Develop recommendations for the use of appropriate scales/models

- Initial discussions on potential governance/management structures to support ABAM delivery.
- Conditions for successful governance identified based on lessons learned from review of similar ABM processes (Objective 1).
- Proposing government-to-government-management framework for aquaculture.
- Additional discussions on potential governance structures and associated roles and responsibilities planned for next meeting in early March.



ABM TWG Objective 4

Recommend appropriate technologies or approaches

- Preliminary examination of technologies and approaches initiated based on TWG member knowledge of select tools.
- Categories of potential tools identified.
- General agreement that a contract should be issued to undertake further analysis and develop options for use of appropriate tools.
- Recommendations to be included in final report.



ABM TWG Next Steps



**Continue review of
tools and
discussions on
Governance**



**Develop and finalize
recommendations**



**Finalize Report to
IMAB**



Thank you!

Questions?