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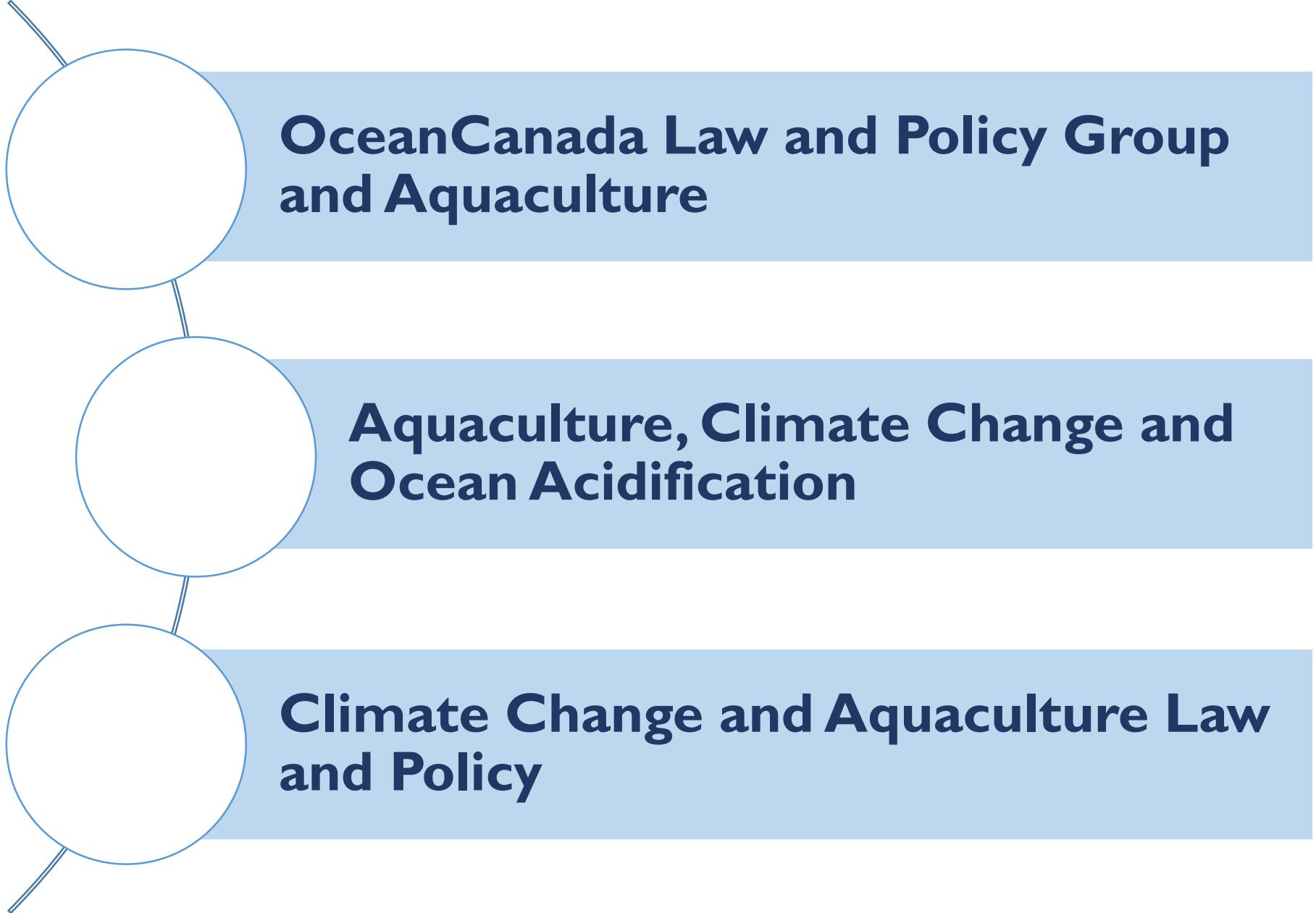
**OCEAN**  
**CANADA**

# **AQUACULTURE IN CHANGING WATERS**

**Cecilia Engler**  
**PhD Candidate, Schulich School of Law**  
**Dalhousie University**

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**Schulich School of Law**  
**Halifax, NS**

# Outline

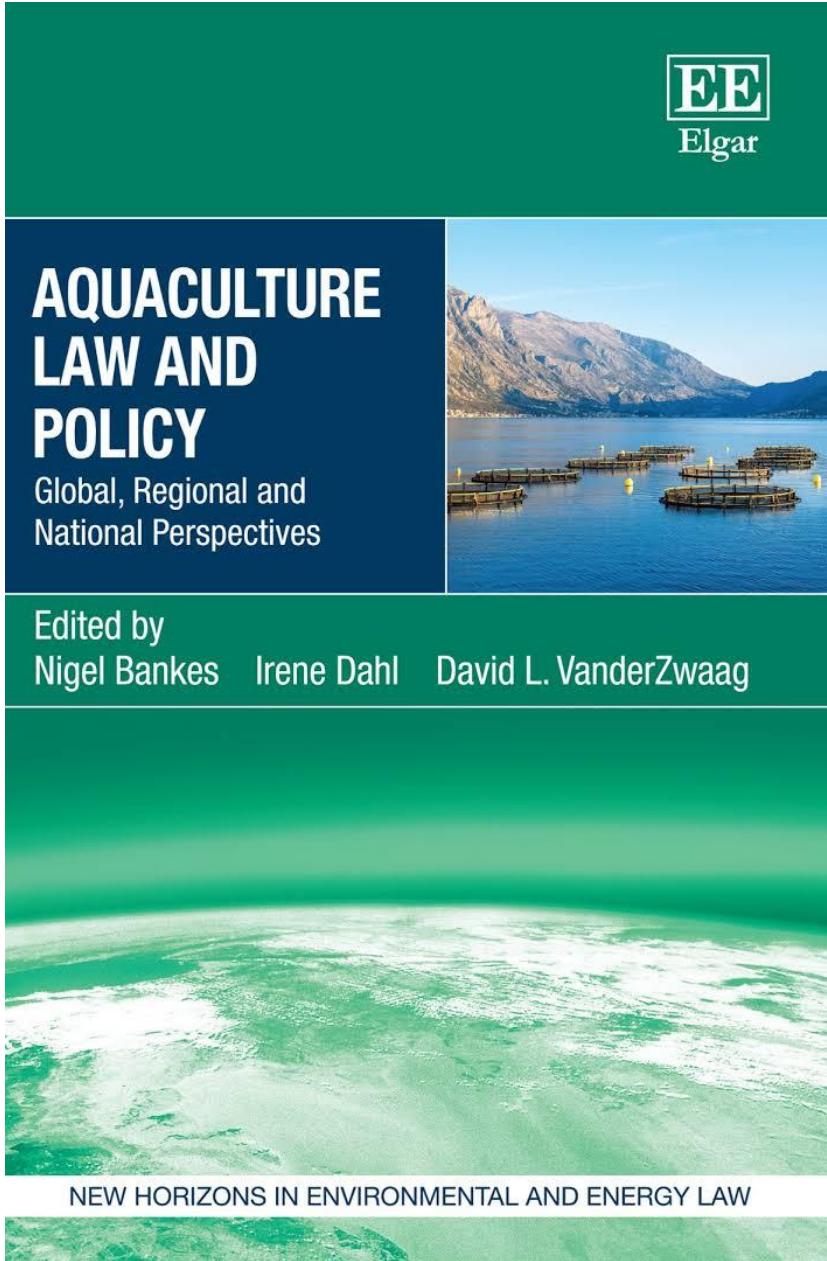


# I. OceanCanada Law and Policy Group and Aquaculture

## *Aquaculture Law and Policy: Global, Regional and National Perspectives*

(in collaboration with K. G. Jebsen Centre for the Law of the Sea at the  
University of Tromsø)

- Aquaculture Law and Policy Workshop, Oslo, 21-22 April 2015
- Publication: Edward Elgar, 2016



## **Part I. Global perspectives**

- International law and policy: navigating tangled currents
- Aquaculture and trade
- Access and benefit sharing in aquaculture

## **Part 2. Regional perspectives**

- Regional approaches to aquaculture and a case study of **NASCO**
- EU aquaculture law and policy

## **Part 3. National perspectives**

**Australia**

**China**

**New Zealand**

**South Africa**

**Canada**

**Iceland**

**Norway**

**U.S.A.**

**Chile**

**India**

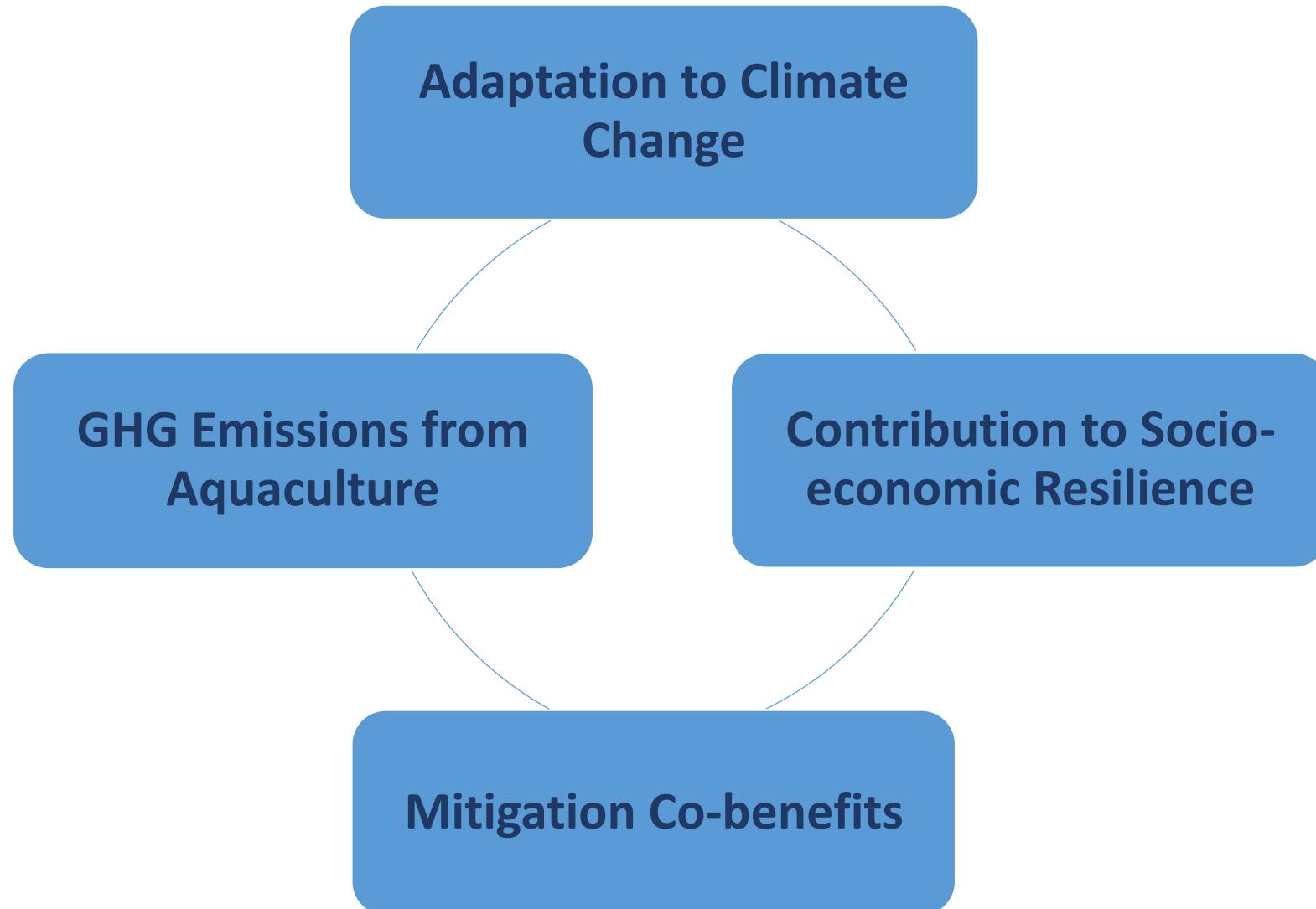
**Philippines**

**U.K.**

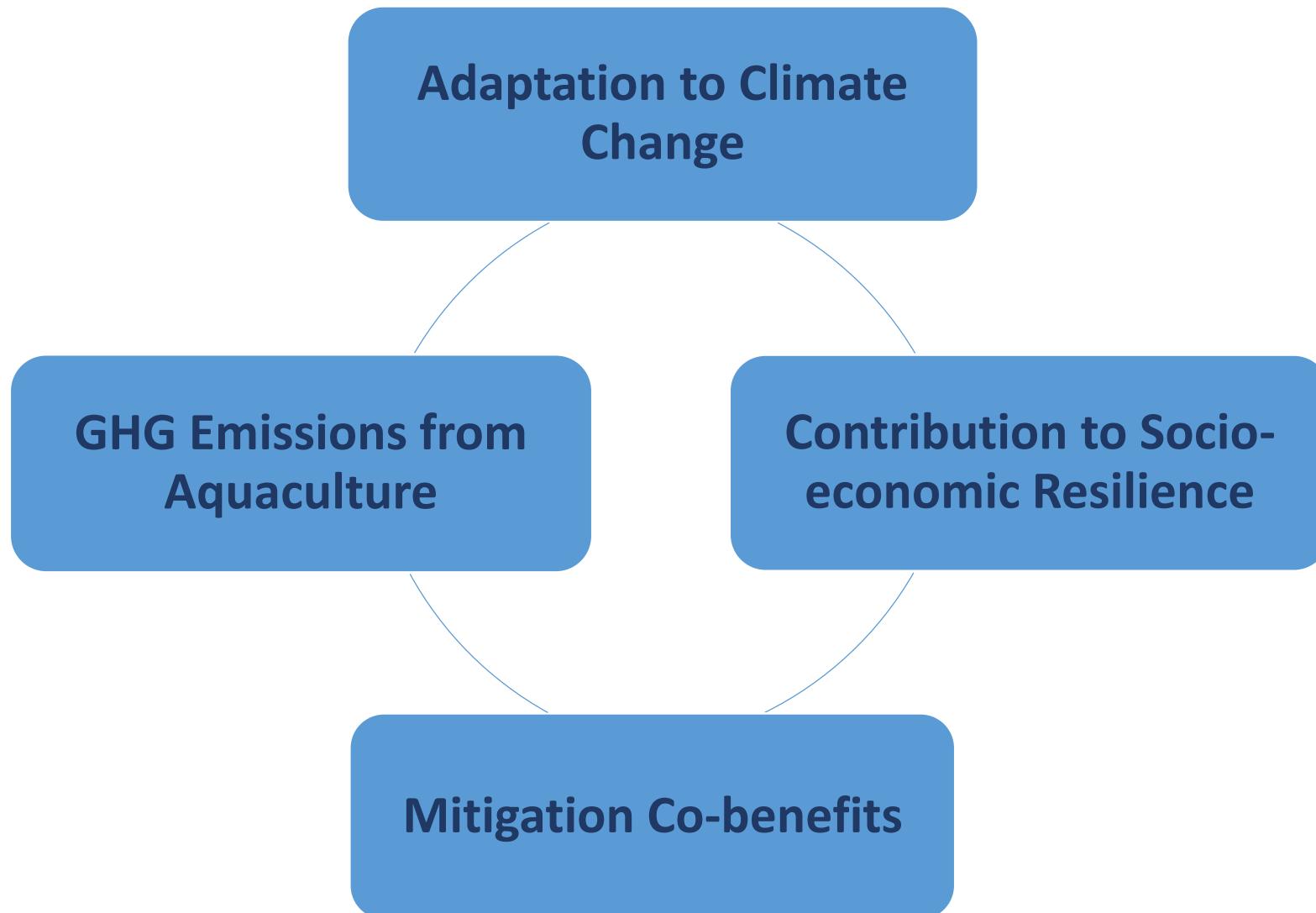
# Aquaculture in OceanCanada

- M.A. Oyinlola, G. Reygondeau, C.C.C. Wabnitz, M. Troell, W.W.L. Cheung, “Global estimation of areas with suitable environmental conditions for mariculture species” (2018) PLoS One <https://doi.org/10.1371/journal.pone.0191086>
- R. McIver, I. Milewski, R. Loucks and R. Smith, “Estimating nitrogen loading and far-field dispersal potential from background sources and coastal finfish aquaculture: a simple framework and case study in Atlantic Canada” (2018) 205 Estuarine, Coastal and Shelf Science 46-57.
- I. Milewski, R.H. Loucks, B. Fisher, R.E. Smith, J.S.P. McCain and H.K. Lotze, “Sea-cage aquaculture impacts market and berried lobster (*Homarus americanus*) catches” (2018) 598 Marine Ecology Progress Series 85-97.
- L.Q.J. Yu, Y. Mu, Z. Zhao, V.W.Y. Lam and U.R. Sumaila, “Economic challenges to the generalization of integrated multi-trophic aquaculture: an empirical comparative study on kelp monoculture and kelp-mollusk polyculture in Weihai, China” (2017) 471 Aquaculture 130-139.
- L.V. Watherdon, A.K. Magnan, A.D. Rogers, U.R. Sumaila and W.W.L. Cheung, “Observed and Projected Impacts of Climate Change on Marine Fisheries, Aquaculture, Coastal Tourism, and Human Health: An Update” (2016) Front. Mar. Sci. 3, <https://doi.org/10.389/fmars.2016.00048>

## II. Aquaculture, Climate Change and Ocean Acidification



## II. Aquaculture, Climate Change and Ocean Acidification



### **III. Climate Change and Aquaculture Law and Policy**

#### **Research Themes**

- 3.1 Aquaculture in Climate Change Law and Policy**
- 3.2 Climate Change in Aquaculture Law and Policy**

## 3.1 Aquaculture in Climate Change Law and Policy

**How is aquaculture considered in the climate change regime and mitigation and adaptation strategies and plans?**

Review of primary sources of climate change regime:

- IPCC, UNFCCC
- NDCs, Adaptation Communications, National Communications

Review of secondary sources (FAO; academic literature)

## 3.2 Climate Change in Aquaculture Law and Policy

### a) Does aquaculture law and policy allow for adaptation to:

- unpredictable, short-term “anomalies” (in temperature, pH, droughts, storms)
- slow-onset changes in the marine environment?

Critical review of legal primary and secondary sources of selected jurisdictions\*, with focus on:

- Planning instruments (e.g. aquaculture zoning, area-based management, lease tenure and relocation, diversification)
- Management instruments (e.g. early warning systems; insurance)

(\* Canada, Chile, Norway, U.K-Scotland)

## 3.2 Climate Change in Aquaculture Law and Policy

**b) How does aquaculture law and policy need to change to allow for required adaptation?**

Broader theoretical framework: ecosystem law, adaptive law

(J.B. Ruhl, J.C. Nagle, K. Robbins, B. Cosens, R.K. Craig, K. Bosselman, E. Biber, C. Voigt, C.A. Arnold)



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