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Title of Talk: What does it takes to get seaweed on the menu?

About Dorothy Dankel

Dorothy Dankel is a Senior Research Scientist at SINTEF Ocean in Bergen, Norway, with a PhD in fisheries biology and management in 2009 from the University of Bergen. Her research addresses responsible research and innovation and transdisciplinarity in marine science and policy, with a focus on the conditions under which scientific knowledge is translated into institutional and societal change. She leads several work packages and tasks in various EU Mission Ocean projects and is Chair of the Nordic Marine Think Tank, current member of the ICES Working Group on Maritime Systems, and leads a Nordic Council of Ministers project on transformative change to support coexistence among fisheries, aquaculture and offshore wind in Nordic waters.

Abstract

Background: European seaweed cultivation is characterised by a persistent and widening gap between assessed potential and realised production. Olafsen et al. (2012) identified a Norwegian potential of 20 million tonnes of cultivated macroalgae annually by 2050, corresponding to some NOK 40 billion in annual value creation; recorded Norwegian cultivated production in 2023 was approximately 600 tonnes, with fewer than half of more than 500 issued licenses in operation. The European Commission's target of eight million tonnes of algae by 2030 implies an approximately thirty-fold increase from a base that remains predominantly wild-harvested. The United Kingdom supports nine cultivation sites and imports an estimated 95 percent of its seaweed. By contrast, Norwegian wild kelp harvesting has sustained approximately 200,000 tonnes annually for decades within an established alginate value chain. This asymmetry indicates that the principal constraint on cultivation is neither biological nor technological, but institutional and cultural.

Approach: I present a storyline of the enabling and constraining conditions for seaweed cultivation across four European jurisdictions — Norway, Denmark, the United Kingdom and Ireland — structured using the three spheres of transformation framework (O'Brien and Sygna, 2013), which distinguishes practical, political and personal domains of change.

Findings: Each jurisdiction exhibits constraint in a different domain. Norway demonstrates the insufficiency of political-sphere reform in isolation: the unanimous extension of the fish export act to macroalgae in 2023 conferred a marketing mandate and access to research funding, yet cultivated production has not increased and macroalgae are absent from the 2025 national seafood export strategy. England exhibits institutional fragmentation, with cultivation consent requiring determination by eight separate public bodies. Evidence from Cornwall and Scotland indicates binding social license constraints. Ireland presents an active contestation of harvesting rights, in which approximately 2,500 appurtenant rights holders in Galway alone oppose commercial license applications — an explicit conflict over legitimate representation. The Danish sector has itself identified four principal barriers, of which three are non-technical. I analyse where the problem stops being technical and becomes a question about people — who decides, who benefits, and who was never invited.



Implications: Taken together, I argue that the cases indicate systematic over-investment in the practical sphere and correspondingly weak capacity in the political and personal spheres, with the consequence that technical advances do not propagate through the system. I outline the interventions each sphere requires and their necessary sequencing and how each one of us in the room can work together to get seaweed on the menu, with a focus on Mission Ocean synergies and the upcoming EU Ocean Act.

