

# Innovation Narratives in Norwegian Aquaculture

Emil Lindfors | January 20, 2024

---

The Norwegian salmon farming industry has undergone significant transformation over the past decades. This post explores the narratives that shape innovation pathways in the sector.

## The Greening Narrative

Research by Christiansen & Jakobsen (2017) has identified diverse narratives surrounding the greening of Norwegian salmon farming. These narratives range from technological optimism to more cautious approaches emphasizing ecosystem limits.

The industry faces what Osmundsen et al. (2017) describe as a “wicked problem” - where environmental regulations, market demands, and production goals create complex trade-offs that resist simple solutions.

## Innovation Pathways

According to Afewerki et al. (2022), innovation in Norwegian aquaculture follows distinct patterns:

1. Incremental improvements in feed efficiency and fish health
2. Radical innovations like closed containment systems
3. Systemic changes in value chain organization

The policy environment plays a crucial role. Afewerki et al. (2023) show how innovation policy has reshaped production networks, creating new opportunities for technology providers and research institutions.

## Sustainability Certification

The operationalization of sustainability through certification schemes has been analyzed by Osmundsen et al. (2020). They find that different schemes emphasize different aspects of sustainability, leading to varied interpretations of what “sustainable aquaculture” means in practice.

## Regional Development

The aquaculture industry's role in regional development cannot be understated. Production costs and competitiveness vary significantly across salmon-producing countries (Iversen et al., 2020).

## Conclusion

Understanding these narratives is essential for developing effective policies that balance economic growth with environmental protection. The industry continues to evolve, with new technologies like land-based farming (Misund et al., 2024) offering potential solutions to current challenges.

## References

- Afewerki, S., Asche, F., Misund, B., Thorvaldsen, T., & Tveteras, R. (2022). Innovation in the Norwegian aquaculture industry. *Reviews in Aquaculture*, raq.12755. [doi:10.1111/raq.12755](https://doi.org/10.1111/raq.12755).
- Afewerki, S., Osmundsen, T., Olsen, M. S., Størkersen, K. V., Misund, A., & Thorvaldsen, T. (2023). Innovation policy in the Norwegian aquaculture industry: Reshaping aquaculture production innovation networks. *Marine Policy*, 152, 105624. [doi:10.1016/j.marpol.2023.105624](https://doi.org/10.1016/j.marpol.2023.105624).
- Christiansen, E. A., & Jakobsen, S. (2017). Diversity in narratives to green the Norwegian salmon farming industry. *Marine Policy*, 75(October 2016), 156-164. [doi:10.1016/j.marpol.2016.10.020](https://doi.org/10.1016/j.marpol.2016.10.020).
- Iversen, A., Asche, F., Hermansen, Ø., & Nystøyl, R. (2020). Production cost and competitiveness in major salmon farming countries 2003–2018. *Aquaculture*, 522(January 2019), 735089. [doi:10.1016/j.aquaculture.2020.735089](https://doi.org/10.1016/j.aquaculture.2020.735089).
- Misund, A., Thorvaldsen, T., Strand, A. V., Oftebro, T. L., & Dahle, S. W. (2024). Opportunities and challenges in new production systems for salmon farming in Norway—Industry perspective. *Marine Policy*, 170, 106394. [doi:10.1016/j.marpol.2024.106394](https://doi.org/10.1016/j.marpol.2024.106394).
- Osmundsen, T. C., Almklov, P., & Tveterås, R. (2017). Fish farmers and regulators coping with the wickedness of aquaculture. *Aquaculture Economics & Management*, 21(1), 163-183. [doi:10.1080/13657305.2017.1262476](https://doi.org/10.1080/13657305.2017.1262476).
- Osmundsen, T. C., Amundsen, V. S., Alexander, K. A., Asche, F., Bailey, J., Finstad, B., Olsen, M. S., Hernández, K., & Salgado, H. (2020). The operationalisation of sustainability: Sustainable aquaculture production as defined by certification schemes. *Global Environmental Change*, 60, 102025. [doi:10.1016/j.gloenvcha.2019.102025](https://doi.org/10.1016/j.gloenvcha.2019.102025).