



# Data sharing, shared value and lowering the thresholds for collaboration in aquaculture

From farm to fjord to global sustainability ecosystems

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# Aquaculture is becoming a real-time industry

*From reactive → predictive management.*

- Climate variability is increasing
- Disease and parasites spread faster
- Pressure for sustainability documentation
- Insurance and financing becoming risk-based
- Food security depends on resilient aquaculture





# The real bottleneck is not AI — it's fragmented data ecosystems

*Most aquaculture companies already generate huge volumes of data. The challenge is interoperability and incentives.*

## **Data lives in disconnected silos**

- Farmers
- Feed companies
- Sensor vendors
- Public authorities
- Insurers
- Satellite / ocean data

## **Why sharing stalls**

- Different standards
- Unclear ownership and value
- Cybersecurity concerns
- Low trust between parties
- Uneven digital maturity



# Shared data → shared intelligence → shared resilience

## HAB early warning

### Combine:

- Satellite data
- Fjord sensors
- Farm biology data
- AI predictions

### → Outcomes:

- Earlier mitigation decisions
- Reduced mortality

## Sea lice pressure

### Combine:

- Shared regional data between farms
- Predictive spread modelling
- Coordinated mitigation

### → Outcomes:

- Lower treatment costs
- Improved fish welfare



# Different relationships create different kinds of value

## Farmer ↔ Farmer

- Regional sea-lice forecasting
- Shared environmental intelligence
- Coordinated mitigation

*Threshold: Fear of competitive disadvantage; lack of neutral governance*

## Farmer ↔ Supplier

- Better feed optimization
- Predictive maintenance, tailored services
- Lower insurance premiums via documented risk

*Threshold: Vendor lock-in concerns*

## Farmer ↔ Public authorities

- Faster disease / HAB response
- Digital twins for fjords & coastal planning
- Better governance

*Threshold: Reporting burden; trust & transparency*

## Industry ↔ Global initiatives (EDITO, etc.)

- Climate resilience
- Cross-border environmental forecasting
- Ocean sustainability monitoring

*Threshold: Scale, harmonized standards*



# Data sharing only works if the infrastructure exists

## Infrastructure

- IoT sensors
- Edge computing
- Cloud / federated systems
- Open APIs
- Offshore connectivity

## Standards

- FAIR principles
- Interoperability
- Common ontologies
- Sensor standards
- Metadata standards

## Data spaces

- Trusted exchange environments
- Federated governance
- Role-based access
- Shared value creation

**Existing initiatives to build on:** AquaCloud · EU Data Spaces · Ocean data initiatives



# Without trust, there is no data sharing

## Building blocks of trust

- Cybersecurity by design
- Data sovereignty
- Role-based access
- Federated data architectures
- Secure AI pipelines
- Clear governance frameworks

## Companies do not need to share raw data

Trusted alternatives:

- Share derived insights
- Share metadata
- Share risk indicators
- Share anonymized trends
- Use federated AI / on-device learning



# How do we make sharing easier?

## Technical

- Plug-and-play APIs
- Shared standards
- Lower integration cost

## Economic

- Shared-value business models
- Insurance incentives
- Sustainability financing

## Governance

- Trusted neutral platforms
- Clear data ownership
- Transparency

## Cultural

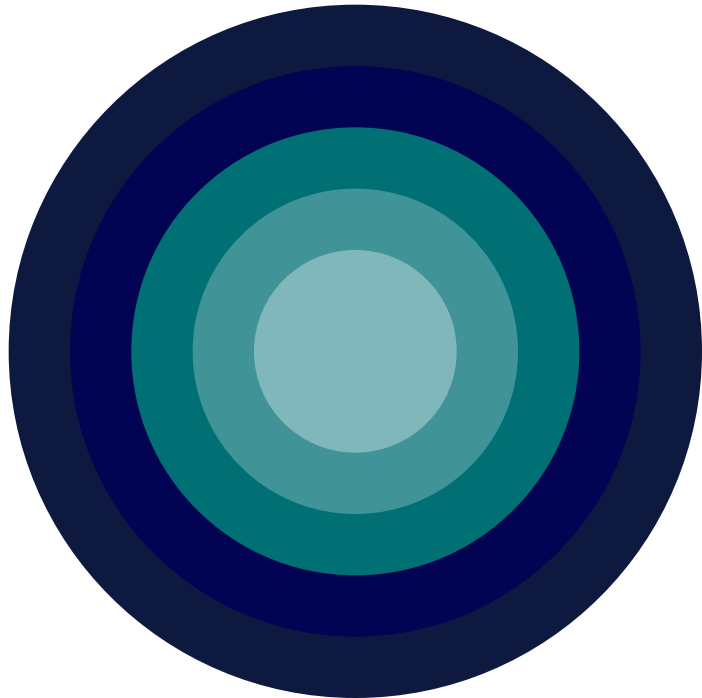
- Shift from "data ownership"
- → to "shared resilience"
- Industry-wide mindset change



From farm → fjord → region →  
nation → global ocean

### Data sharing enables

- Better sustainability
- Faster innovation
- Lower risk
- Stronger food security
- More resilient ocean economies



● Farm    ● Fjord    ● Region    ● Nation    ● Global ocean

*The future competitive advantage may not be who owns the most data — but who collaborates best across trusted ecosystems.*

Thank you. Takk.  
Merci. Gracias. Obrigado.

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