

Smart Aqua4 FuturE

IMPROVING ECONOMIC VIABILITY THROUGH SMARTER FISH GRADING

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Why Economic Viability Matters in Aquaculture

- ✓ Rising operational costs
  - ✓ Labour, energy and daily operations
- ✓ Production efficiency
  - ✓ Making the most of existing resources
- ✓ Limited tank capacity
  - ✓ Tank space and stocking-density limits
- ✓ Better planning
  - ✓ Using farm data to support decisions

Small improvements in daily farm decisions can improve production efficiency.

About OxyGuard

INNOVATION SINCE 1987



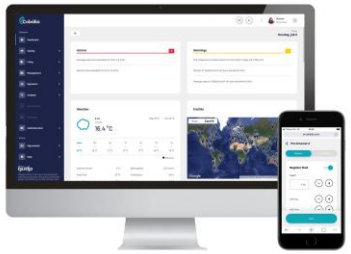
WATER QUALITY PROBES



HAND-HELD METERS



COMPLETE MONITORING AND CONTROL SYSTEMS



CLOUD BASED MANAGEMENT SYSTEMS

The Economic Challenge of Fish Grading

- ✓ Labour costs
  - ✓ Grading requires staff, equipment and time
- ✓ Fish handling
  - ✓ Frequent handling can increase stress and the risk of losses
- ✓ Uneven growth
  - ✓ Different fish sizes complicate production planning
- ✓ Tank utilisation
  - ✓ Poor grading timing can affect available capacity
- ✓ Operational decisions
  - ✓ Limited data makes it harder to plan ahead

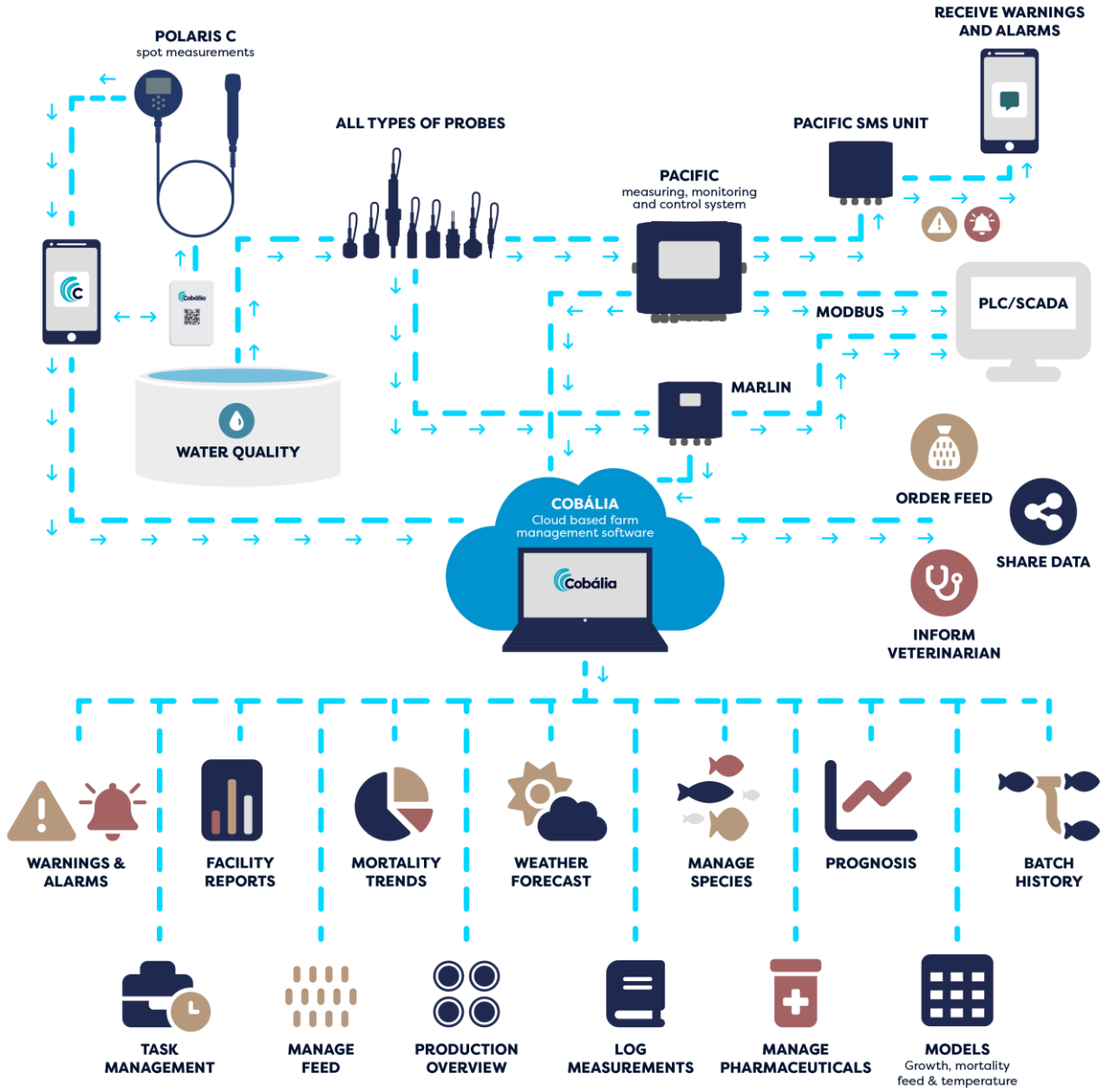
The challenge is not simply how to grade fish, **but when to grade and how to redistribute them efficiently.**

Cobália - From Farm Data to Better Decisions

Cobália is OxyGuard's digital aquaculture management platform.
It brings together production information to support daily farm operations, including:

- ✓ Monitoring and production records
- ✓ Biomass and growth information
- ✓ Farm management and planning

Within SAFE, we have added a new Digital Fish Grading Module to Cobália.



Digital Fish Grading: What We Developed within SAFE

Developed and demonstrated in Cobália at TRL 4.

WHAT WE DEVELOPED	WHAT IT HELPS FARMERS DO
✓ Growth and biomass forecasting	✓ Anticipate changes in fish biomass
✓ Stocking-density assessment	✓ Identify tanks approaching capacity limits
✓ Grading timing recommendations	✓ Plan when grading may be needed
✓ Tank allocation recommendations	✓ Consider how fish could be redistributed
✓ Cobália integration	✓ Access recommendations within the farm management platform

From Traditional Grading to Data-Driven Decisions

From reactive decisions to better planning.

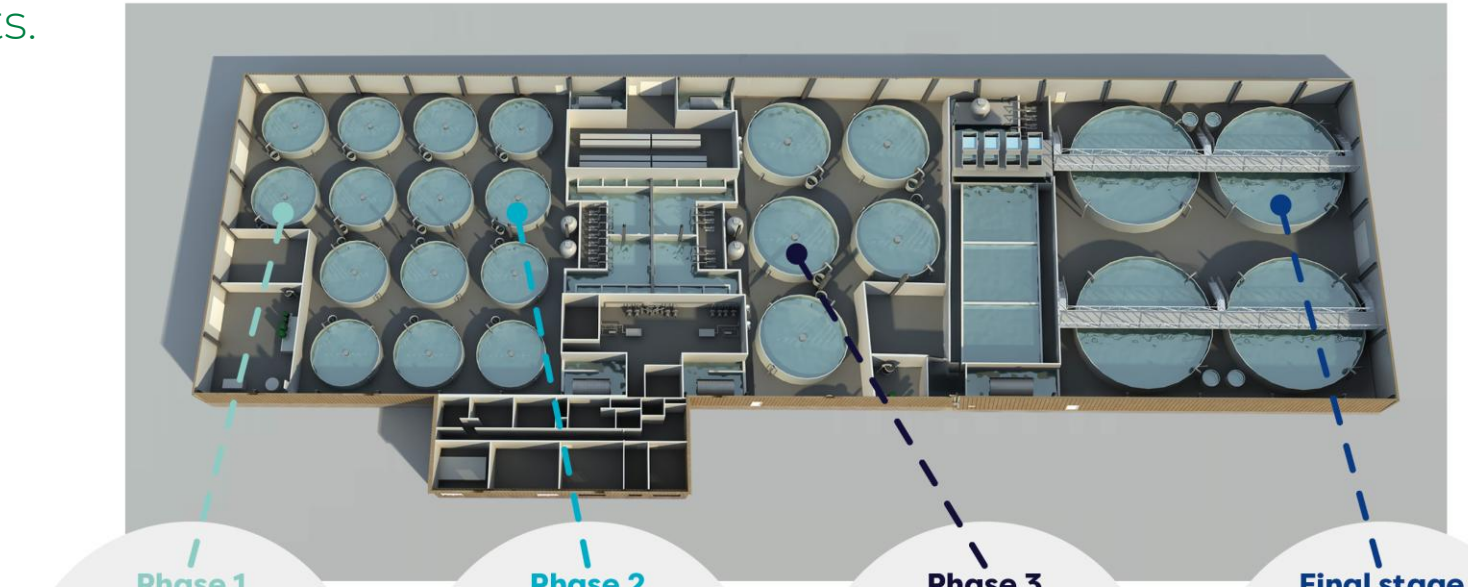
Traditional Fish Grading	Digital fish grading with Cobália
Decisions based on experience and observations	Recommendations based on production data
Grading when a need is identified	Anticipating grading needs using growth forecasts
Tank allocation based on current conditions	Planning tank allocation using expected biomass
Limited overview of future capacity needs	Better visibility of future tank requirements

Better Tank Utilisation and Production Planning

Better grading and tank allocation can help farms make more efficient use of existing infrastructure and avoid unnecessary operational costs.

Economic potential:

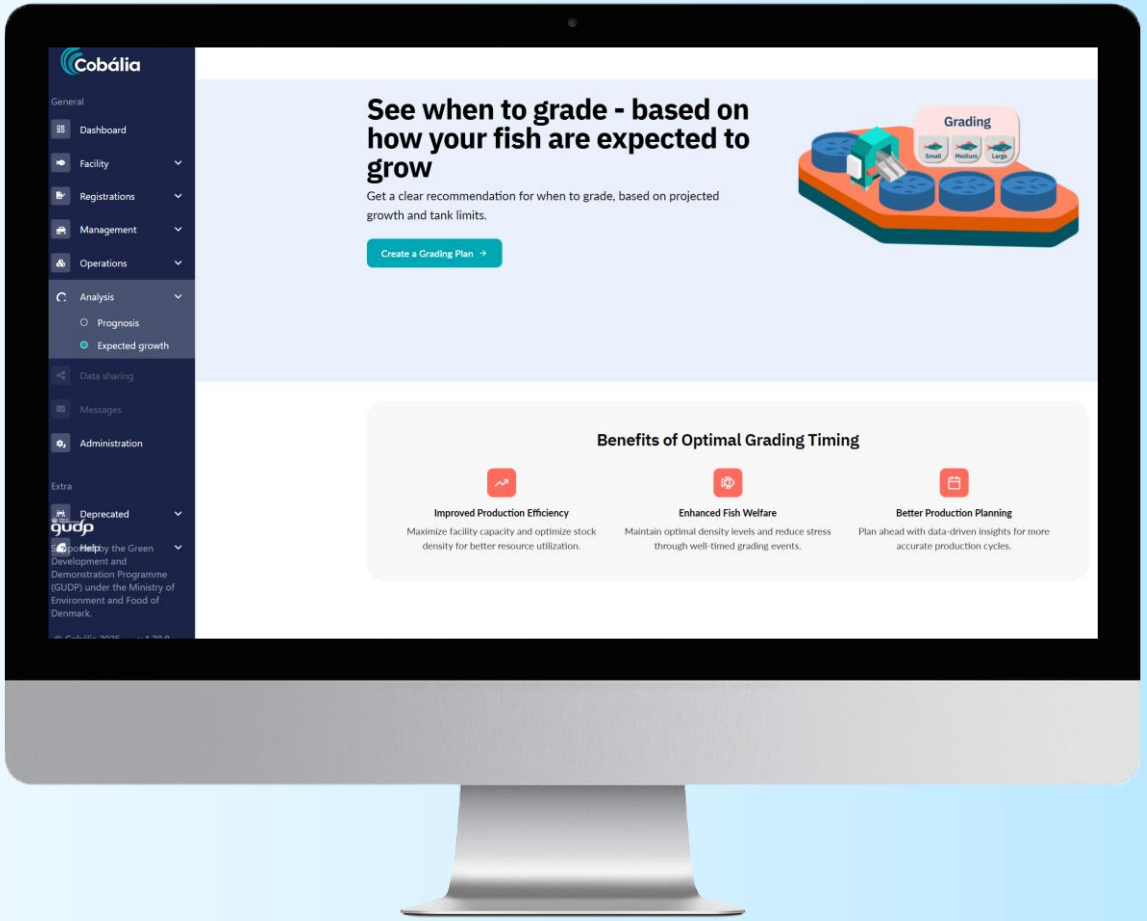
- ✓ Better tank utilisation
- ✓ Fewer unnecessary transfers
- ✓ More efficient production planning



How the Digital Fish Grading Module Works

- ✓ Collect grading and biomass data
- ✓ Analyse fish size distribution
- ✓ Forecast growth and stocking density
- ✓ Recommend grading and tank allocation
- ✓ Support farm planning

The module is designed to support grading and tank allocation decisions using farm production data, growth forecasts and stocking-density assessments.



Digital Fish Grading Demonstration



Where Could Digital Grading Improve Economic Viability?

Potential benefits – not yet quantified through farm validation.

AREAS	POTENTIAL ECONOMIC BENEFIT
✓ Lower operating costs	✓ Potentially reduce labour and unnecessary grading operations.
✓ Better use of existing investments	✓ Improve tank utilisation without immediately expanding infrastructure.
✓ More efficient production	✓ Improve grading schedules and reduce capacity-related disruptions.

Next Steps: Validation and Commercialisation

The next priority is demonstrating the module's value under real farming conditions.

Developed	Next: Farm validation	Commercial potential
Digital Fish Grading Module developed within Cobália	Test with representative production data	Additional digital service within Cobália
Functionality demonstrated at TRL 4	Assess reliability and economic benefits	Potential subscription-based offering

Take Home Message

- ✓ Better grading decisions
- ✓ More efficient tank utilisation
- ✓ Less unnecessary fish handling
- ✓ Potential operational cost savings

Better information can lead to better decisions – and potentially more efficient production.









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Thank you for your attention

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Your opinion matters

Which improvement would make the biggest economic difference for a fish farm?

A. Reducing grading labour and operating costs
B. Making better use of existing tank capacity
C. Improving production planning

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