



Bioplan

How AI from different domains come together  
to improve fish economics and welfare

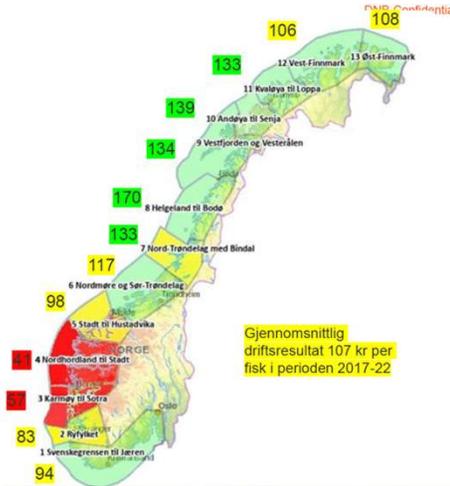
Get started



## Driftsresultat per fisk satt i sjøen, målt i kroner (2017-22)

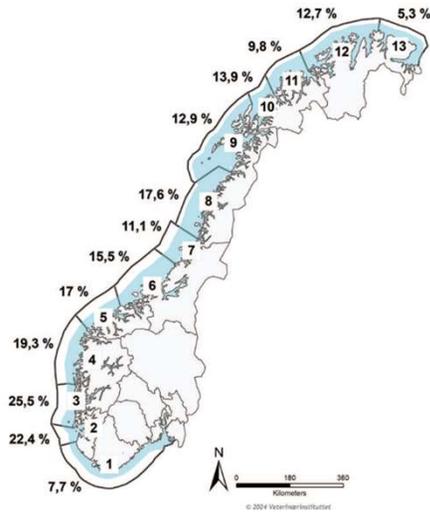
Viktige regionale forklaringsfaktorer for ulik lønnsomhet

- Biomassetetthet
- Antall selskaper
- Antall lokasjoner
- Men det er også store forskjeller mellom selskaper i samme region basert på drift



B

Kilde: The Quality Report fra DNB Markets aksjeanalyse

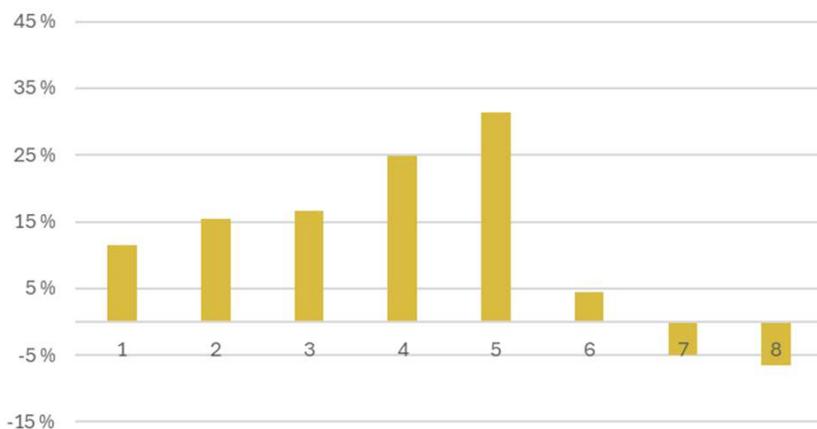


# Large span in

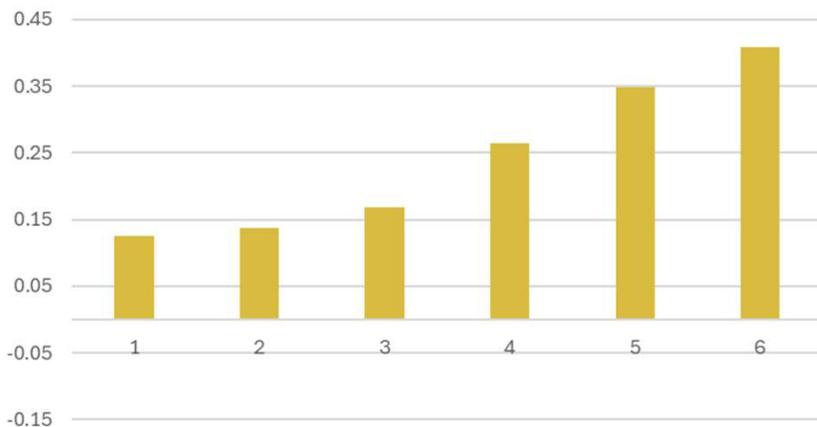
- EBIT
- Mortality
- Lice



PO 3: Karmøy til Sotra

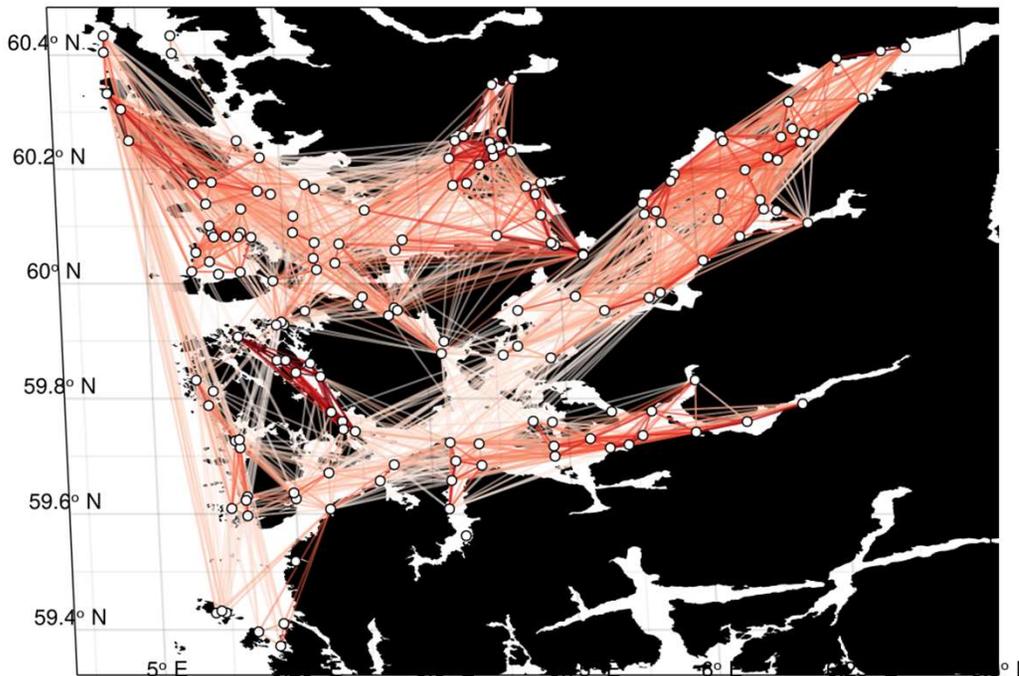


PO 8: Helgeland til Bodø



Large variation in EBIT  
also within  
production areas

Where does this  
difference come  
from?



Nature/geography?

Some of it is due to  
geography

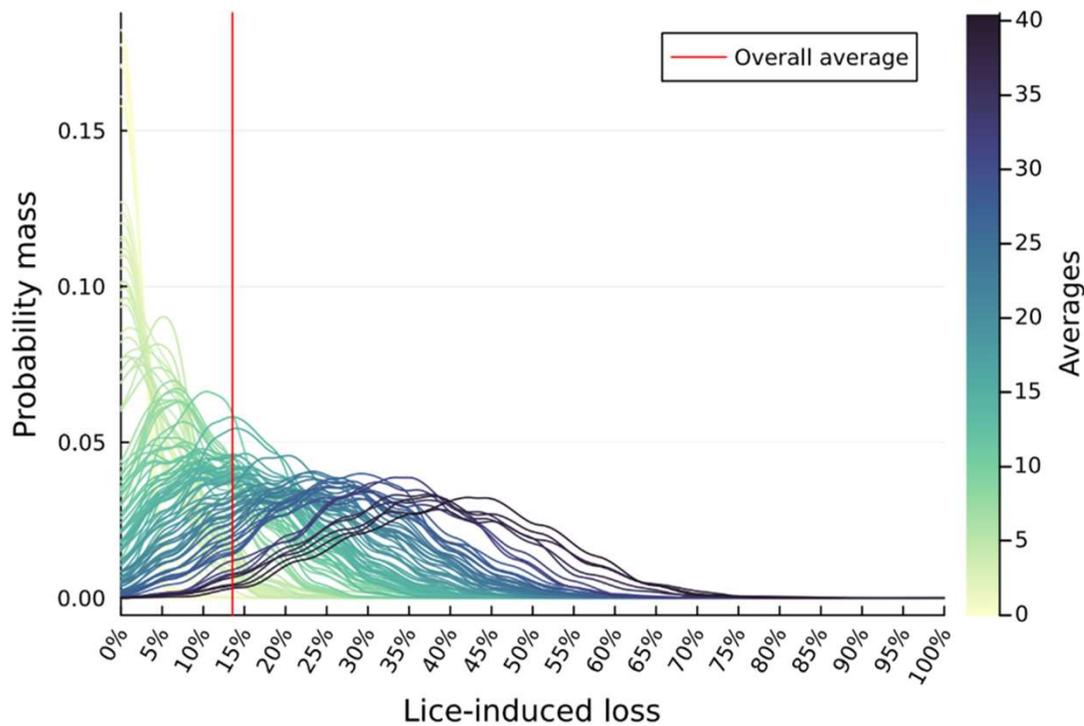
Sites unique  
conditions

+

Site closeness to  
other site



## Loss due to treatment



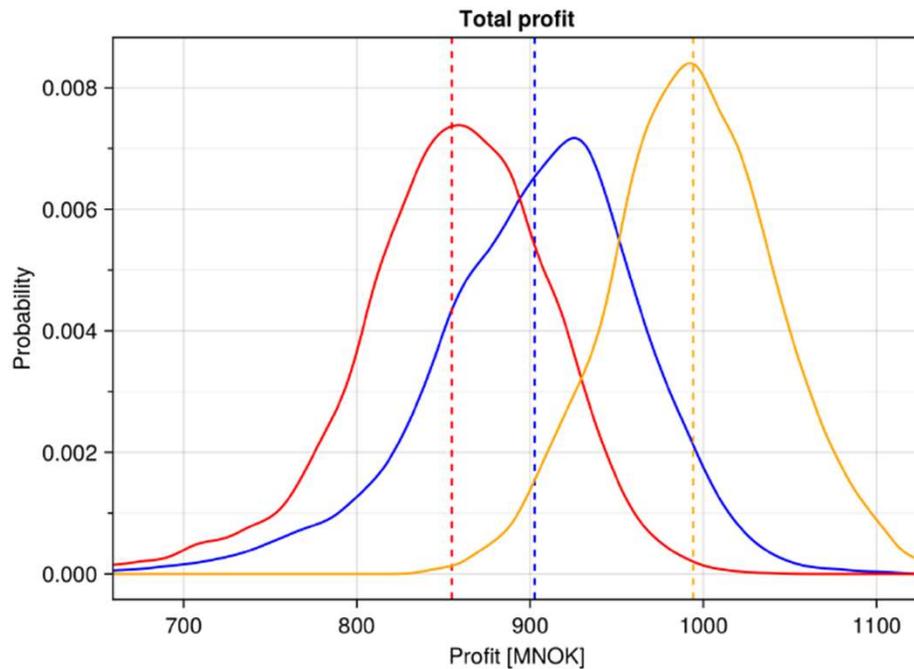
## Choices!

A lot is due to choices from the board room to the cage edge

- Genetics/species
- Feed and feeding
- Equipment
- Wellboat
- Delousing strategy
- Harvest strategy
- Stocking strategy

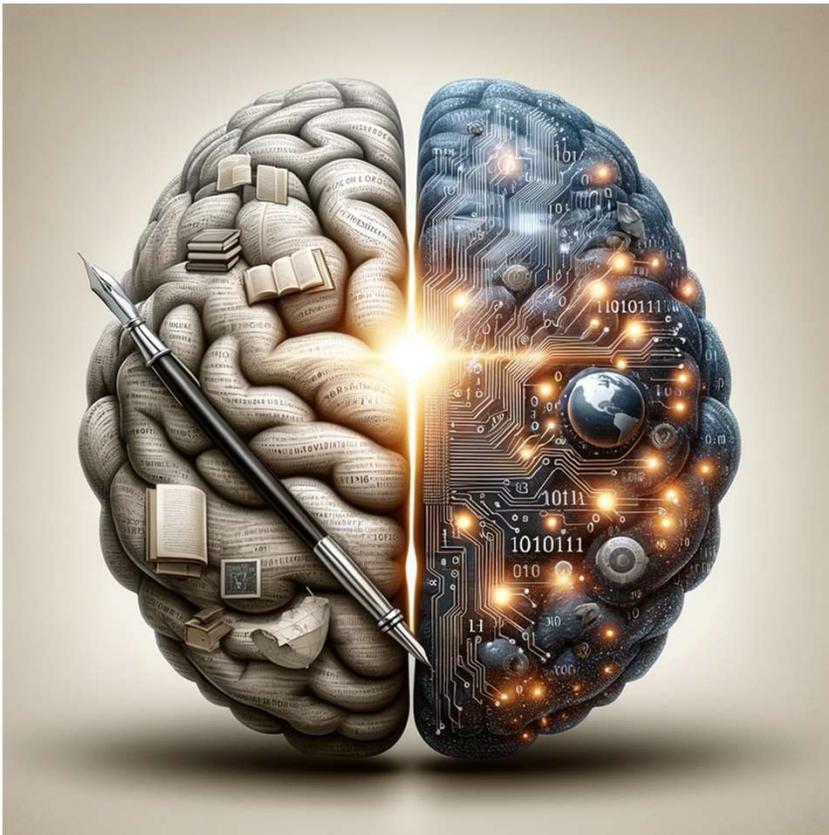


## Different strategies yields different results



Different harvest strategy

+6% larger EBIT with different strategy



How do you  
take good  
choices

Knowledge

+

Data



## Historically: Two main data sources

Decisions



Harvest

Stocking

Treatment



Every 1-2 week

**Use  
data**



Data

Feeding

Mortality



For 30+ years,  
farmers have relied  
on their **deep  
expertise** to  
effectively manage  
rapid changes and  
uncertainty,  
**consistently making  
good decisions**



# Today: 10+ data sources

Decisions



Harvest

Stocking

Treatment



Every 1-2. week

**Luse  
data**



Ad hoc



Biomass

Lice

Feeding

Mortality

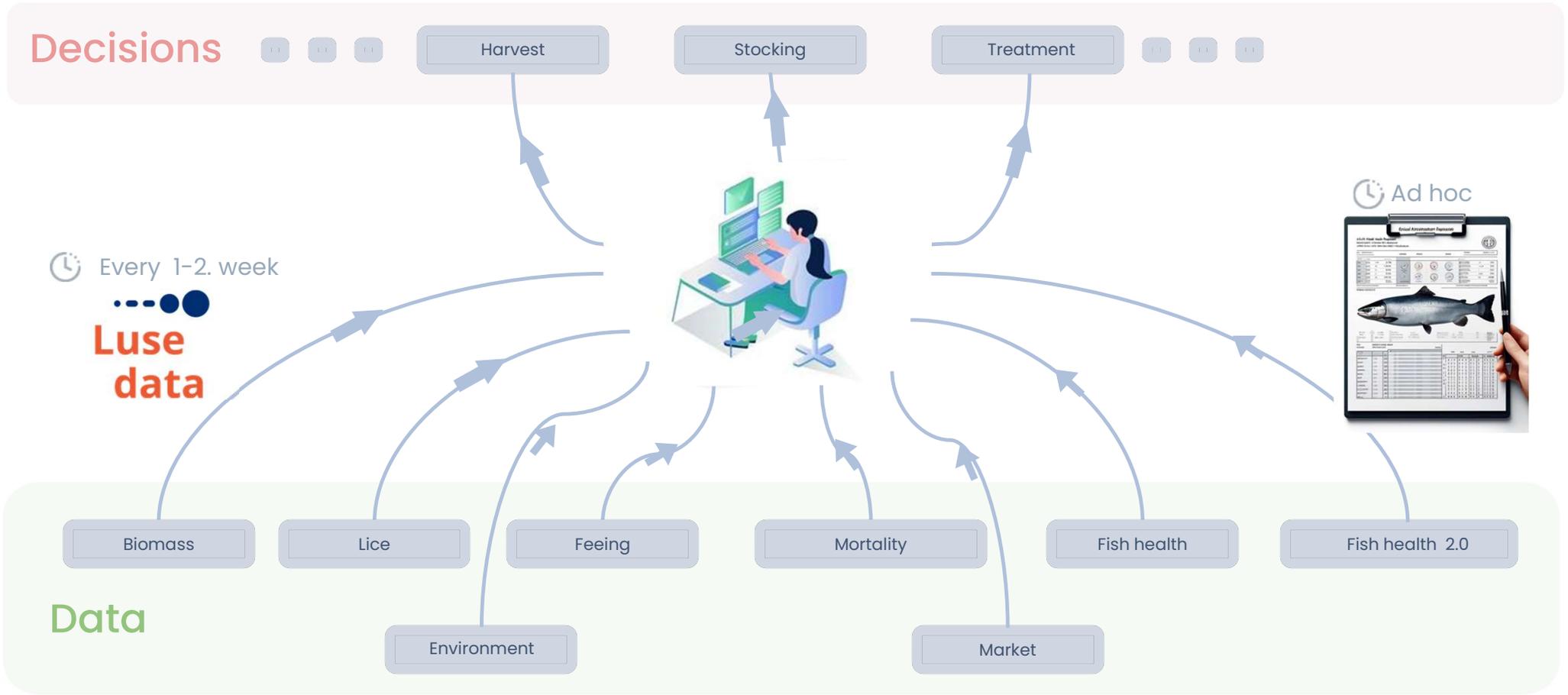
Fish health

Fish health 2.0

Data

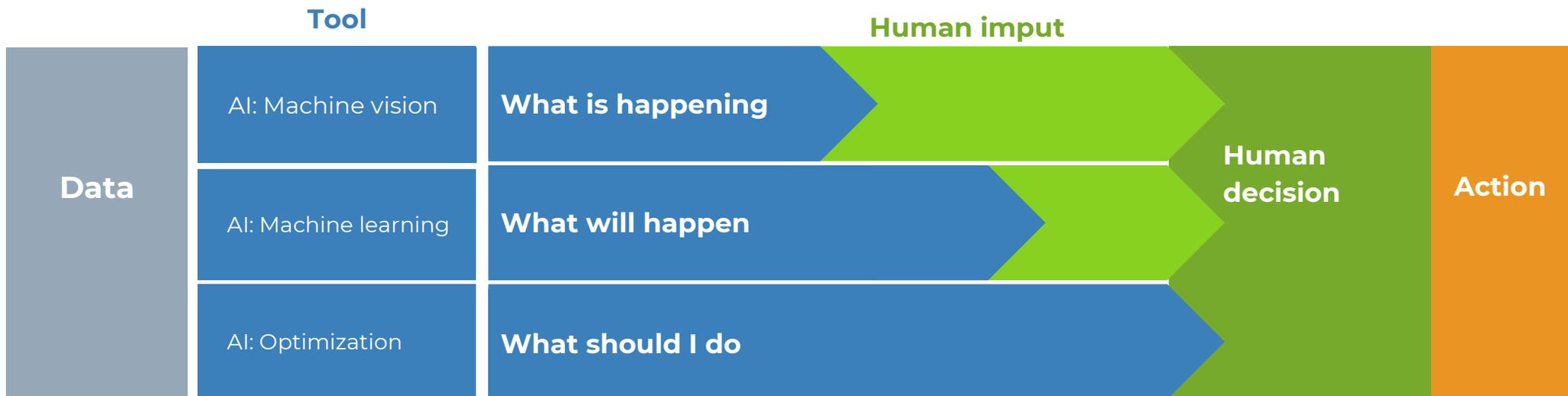
Environment

Market





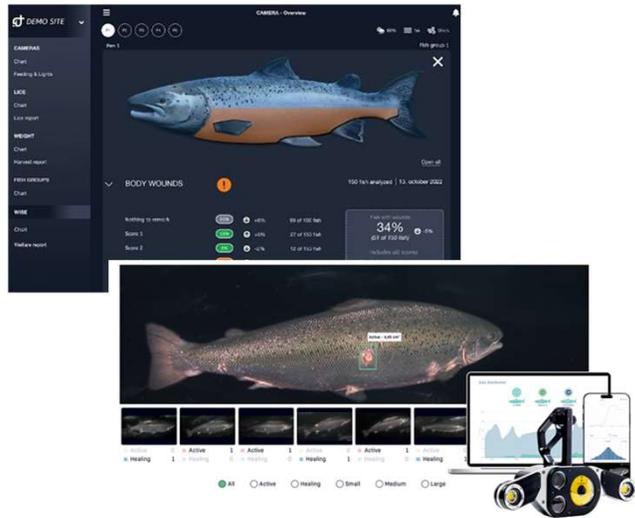
# AI can give you **better data** and support you in making **better choices**





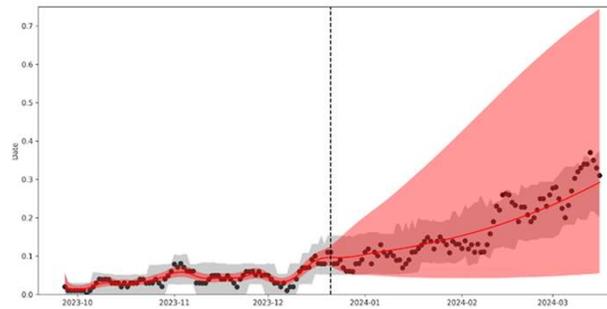
## Observation

AI: Machine vision



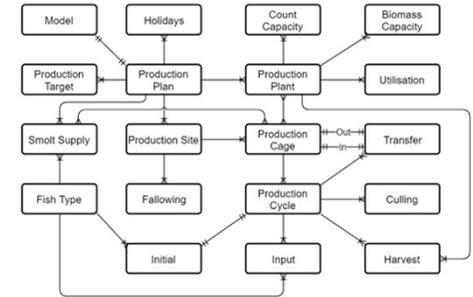
## Forecasting

AI: Machine learning



## Decision

AI: Mathematical optimization





# Forecasting: Wound development

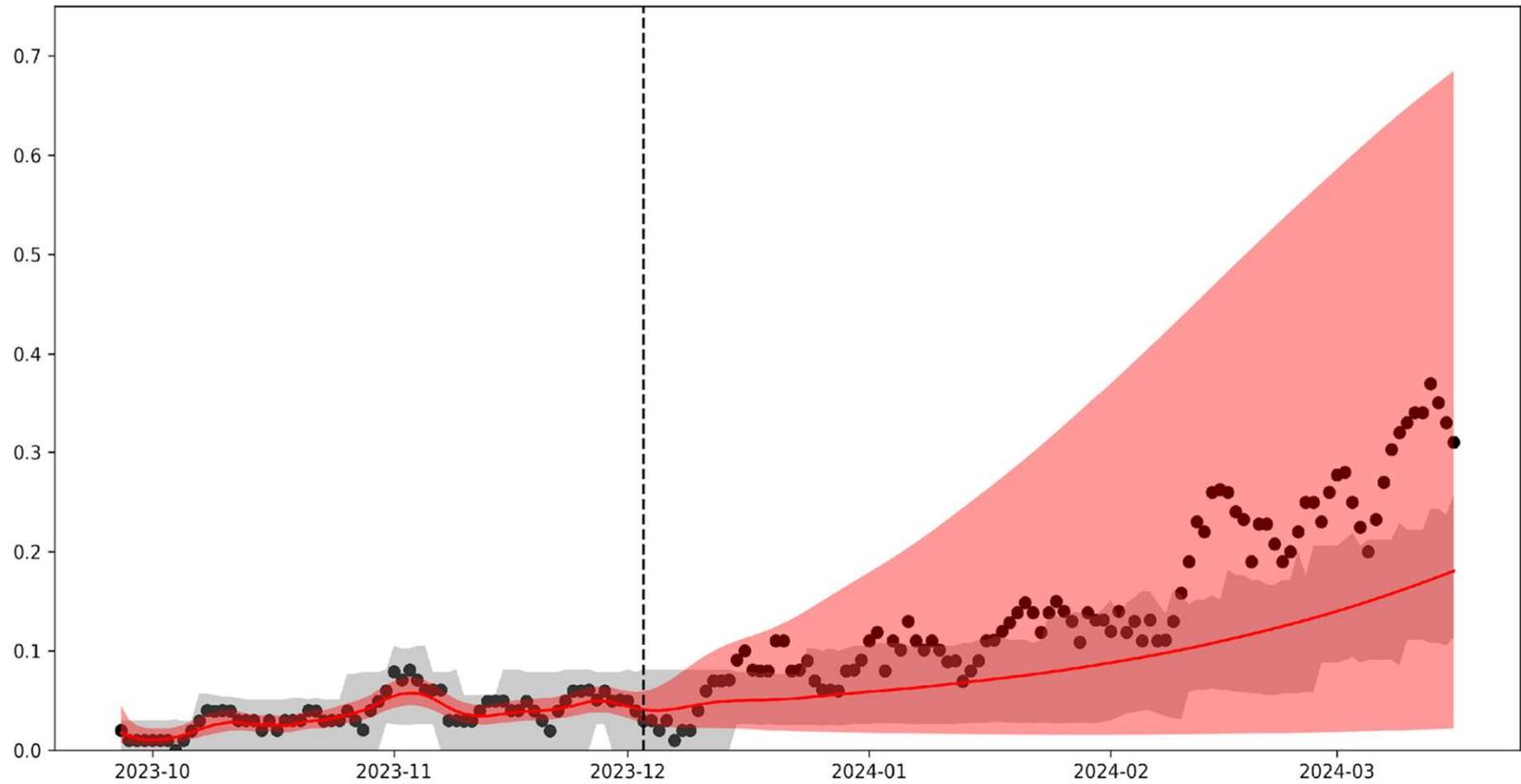
Kameradata

+

Miljødata

+

Produksjonsdata





# Forecasting: Wound development

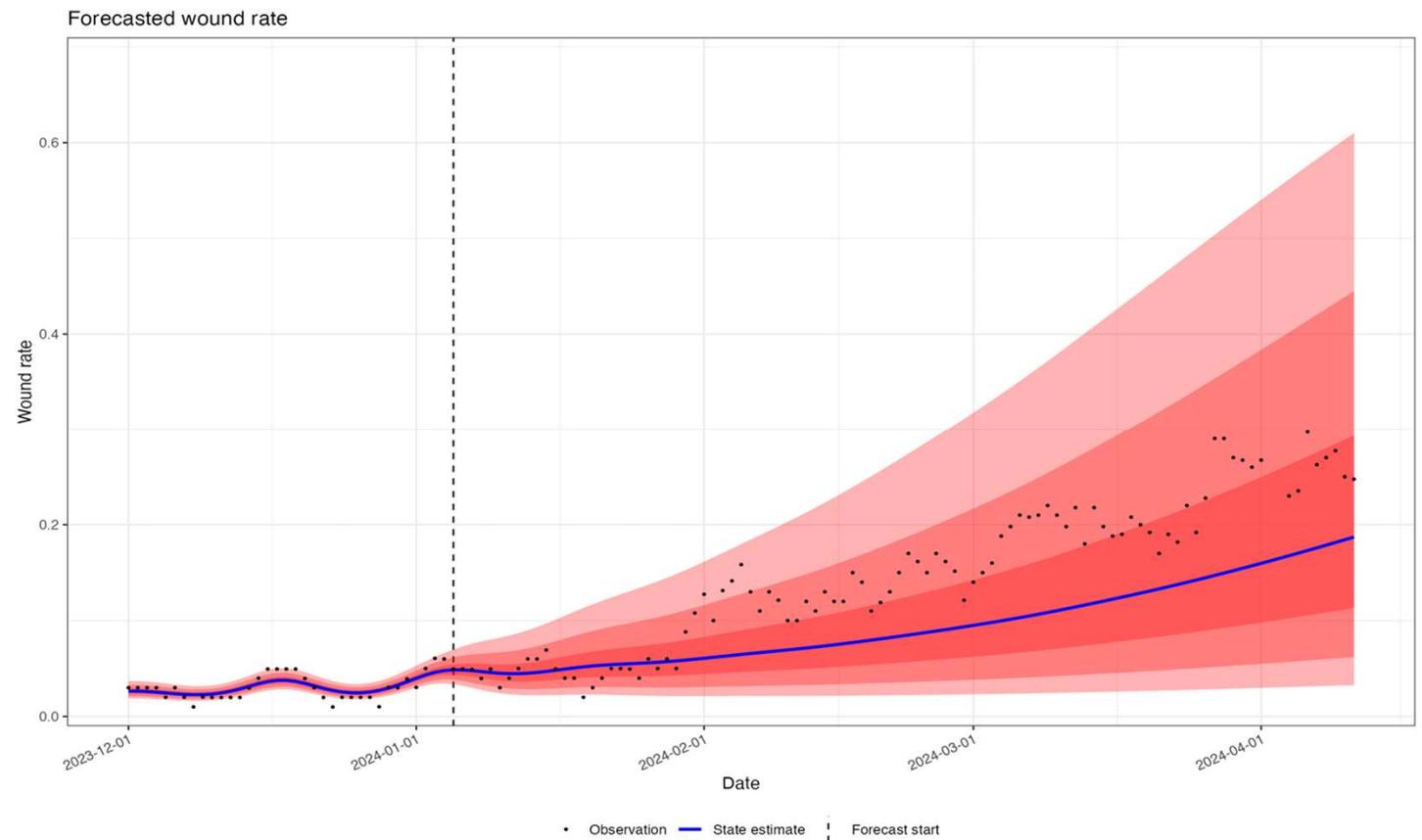
Camera data

+

Environment data

+

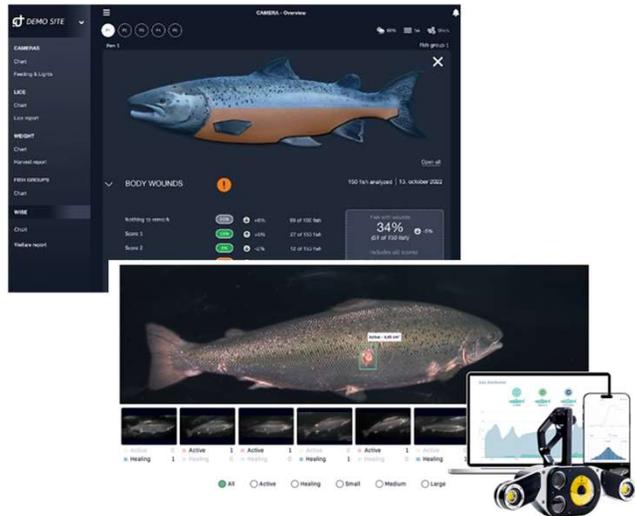
Production data





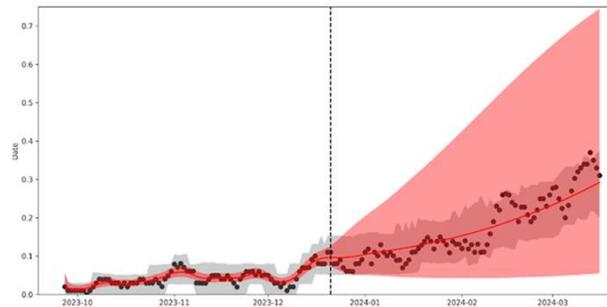
## Observation

AI: Machine vision



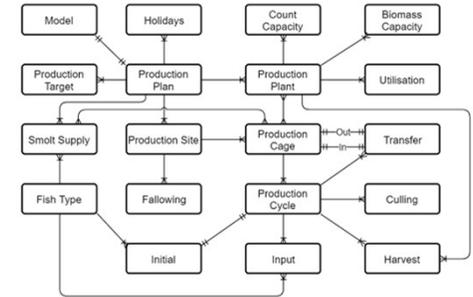
## Forecasting

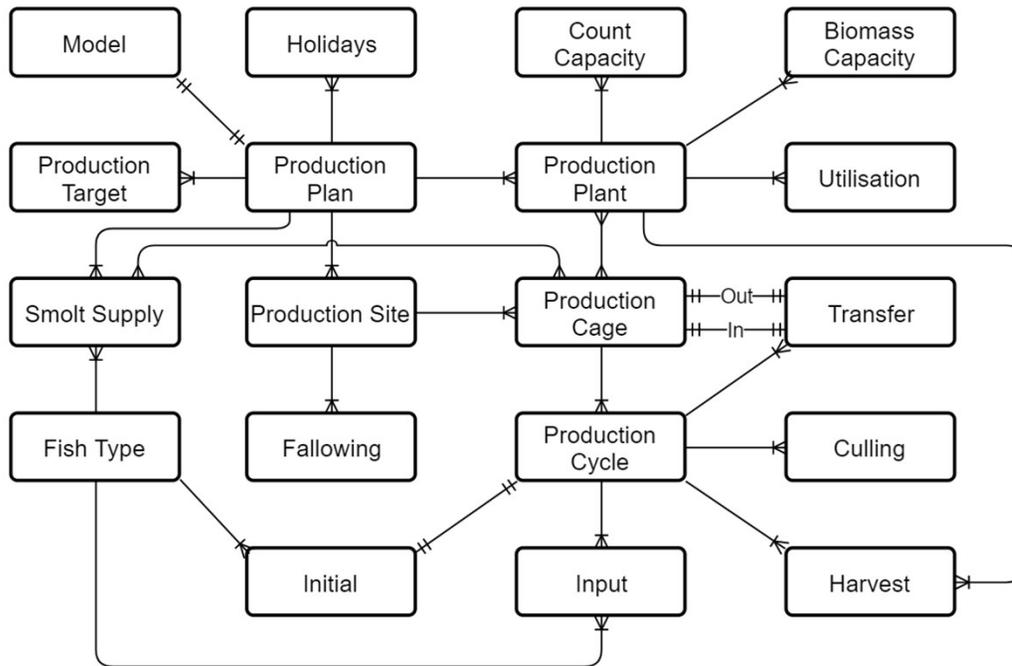
AI: Machine learning



## Decision

AI: Mathematical optimization





+ Biology  
+ Production logistics  
+ Economics  
= Decision



# Today: 10+ data sources

Decisions



Harvest

Stocking

Treatment



Every 1-2. week

**Luse data**



Ad hoc



Biomass

Lice

Feeding

Mortality

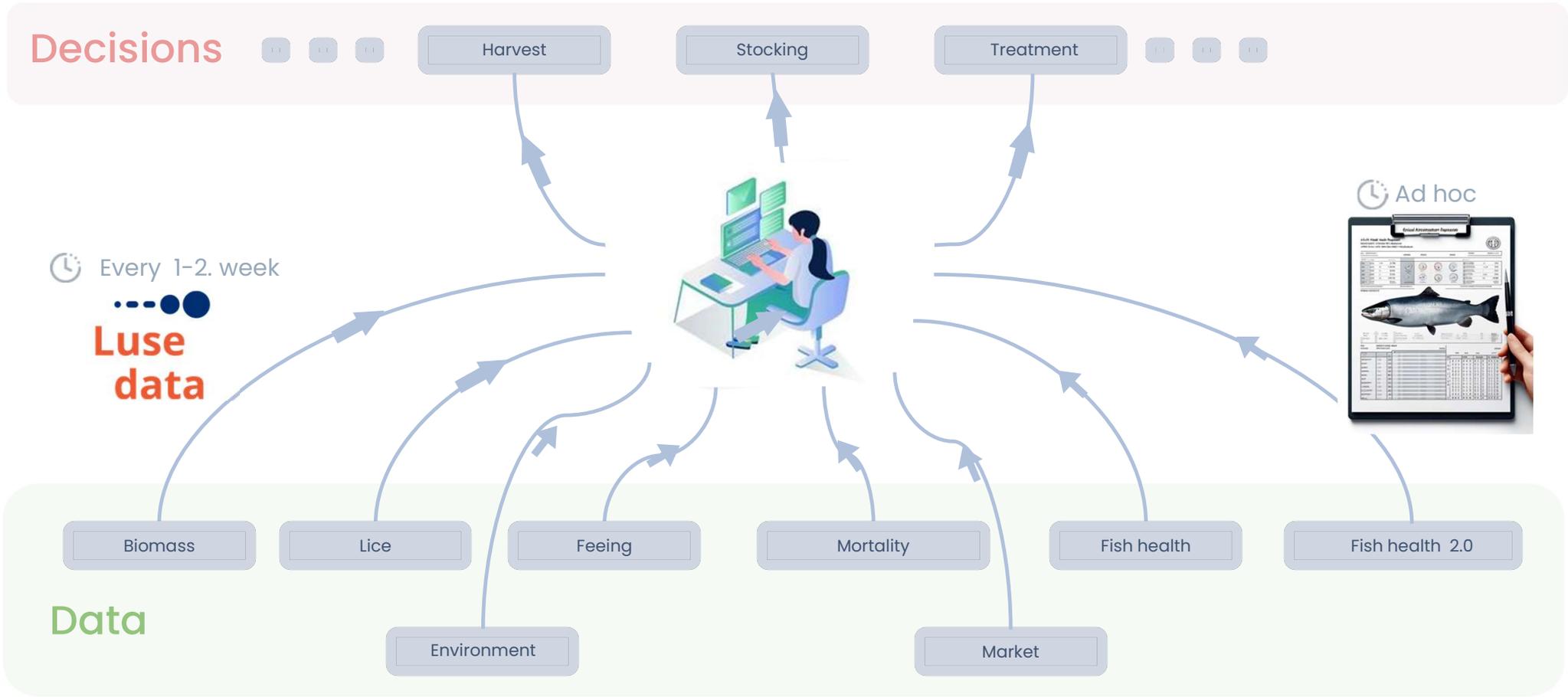
Fish health

Fish health 2.0

Environment

Market

Data





# Today: 10+ data sources

Decisions



Harvest

Stocking

Treatment



Every 1-2. week

**Luse data**



Ad hoc



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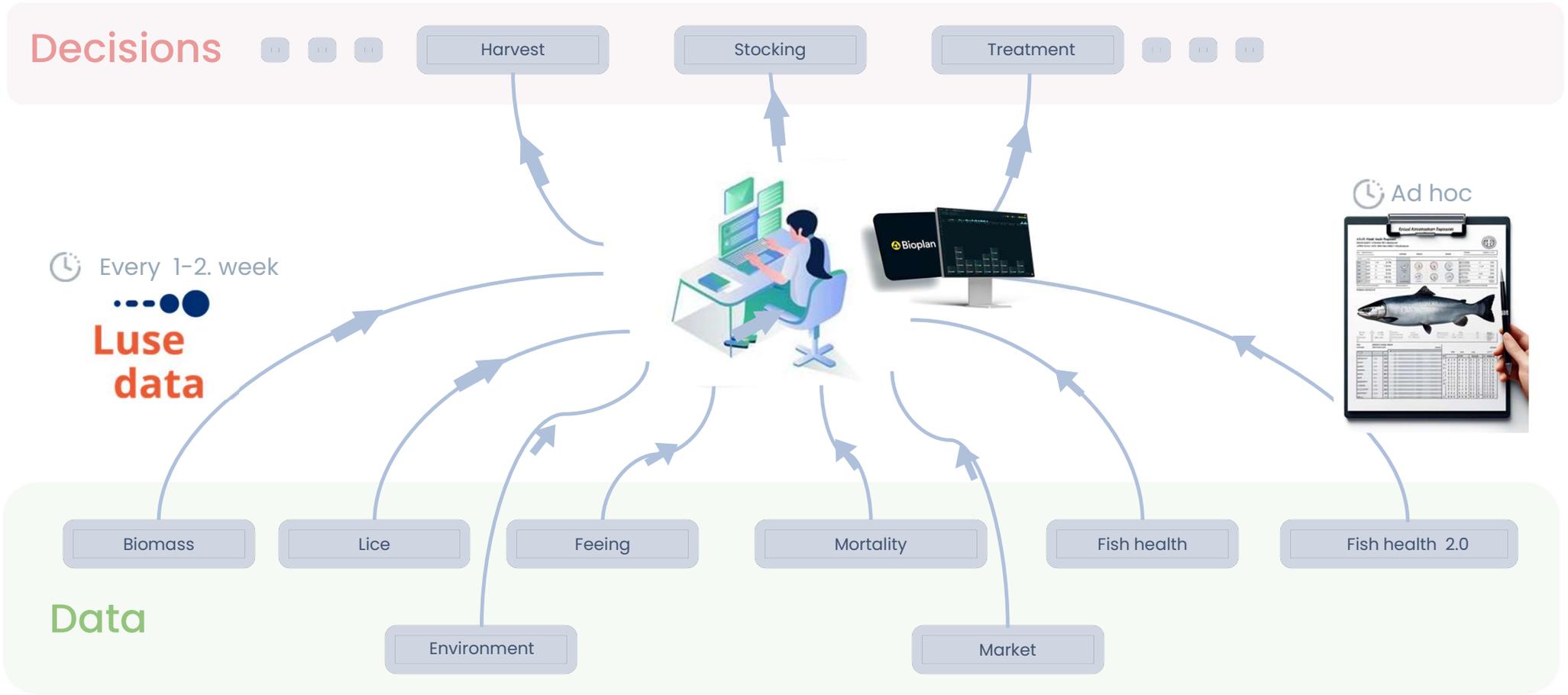
Fish health

Fish health 2.0

Data

Environment

Market

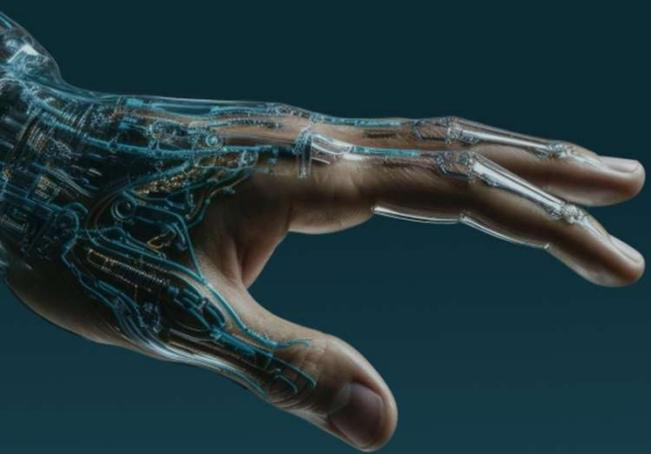




FARM YOUR BEST FISH

# Giving planners superpowers

[Optimize now](#)



## They trust us

We support these companies on their mission to run the most profitable farming operation.



CERMAQ

HOFSETH



Fii  
ZK



NORDLAKS

