

TEAM CLP- DECISION SUPPORT SYSTEM FOR NEAR FUTURE PELAGIC CATCH PLANNING

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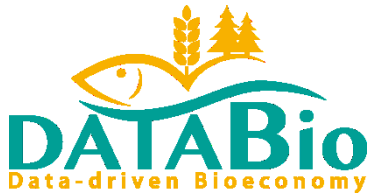
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EMODnet OpenSeaLab Hackathon

Antwerp, 17th November 2017

Project Context - DataBio WP3 – Fishery pilots

+ other related projects in our portfolio



Optimization of ...

	<div>Oceanic tuna fisheries</div> <div></div>	<div>Small pelagic fisheries</div> <div></div>
OPERATION	A1 Oceanic tuna fisheries immediate operational choices	A2 Small pelagic fisheries immediate operational choices
PLANNING	B1 Oceanic tuna fisheries planning	B2 Small pelagic fisheries planning
SUSTAINABILITY		<div>C1 Pelagic fish stock assessments</div> <div>C2 Small pelagic market predictions and traceability</div>

Essential value chain driver:

Where to fish what when?

... through utilization of Big Data Technology (48 international partners)

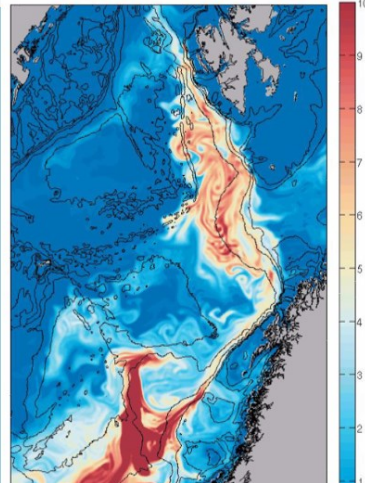
TEAM CLP – What & how?

Physical Modeling – long term
(SINTEF: 1970s -2010s)

SINMOD:
Distribution of zoo plankton

Models for ocean currents, temperature and plankton are continuously being improved.

Good models for fish stocks (growth and distribution) are complicated.



The SINMOD Basic Model Components

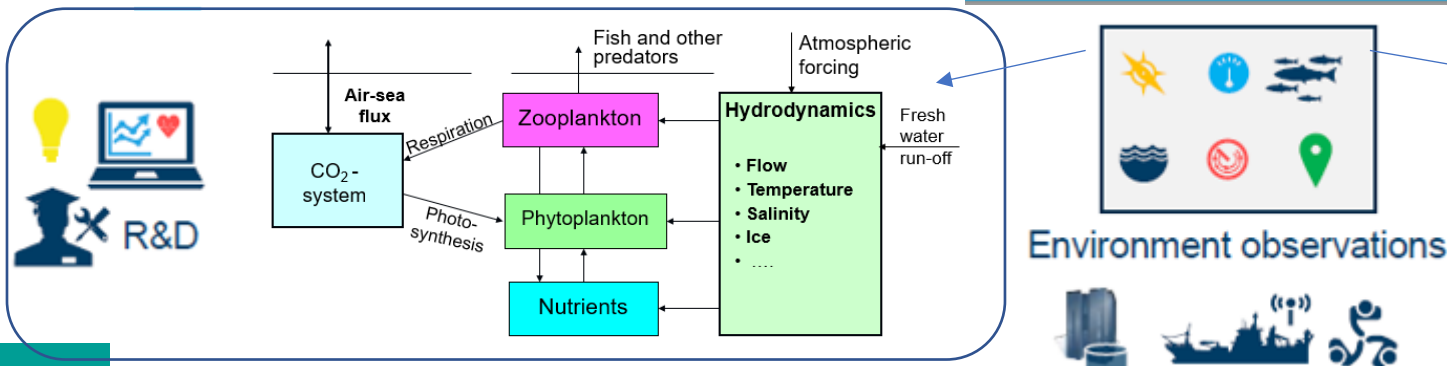
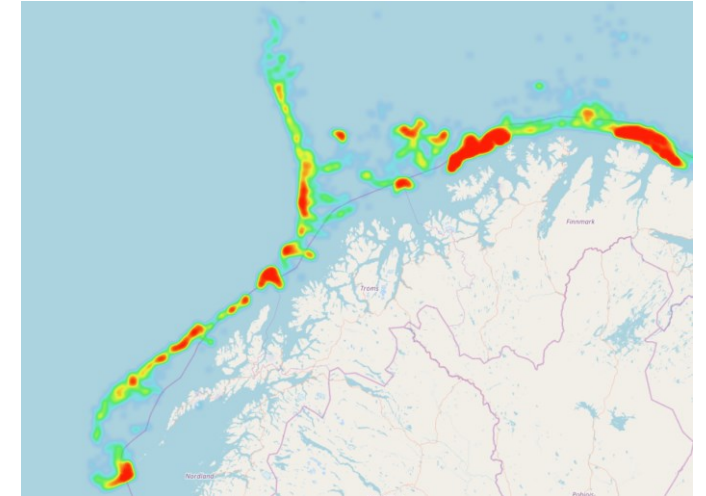
Where is the fish likely to be?
 $p(x,y,z,t \mid \text{species})$

Knowledge transfer synergy:

- Feature strength & importance)
- Detailed data for $f(x,y,z,t)$ - training



Machine Learning – Now (demo)

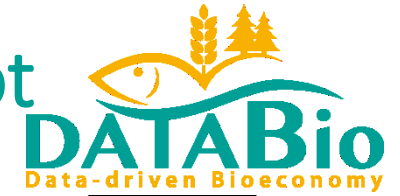


Deep learning NN of catch probability:

- High catch probability heatmap
- Black box model trained on
 - catch data
 - physics, chemistry ++



TEAM CLP – Why? – Most relevant business view from C2 pilot



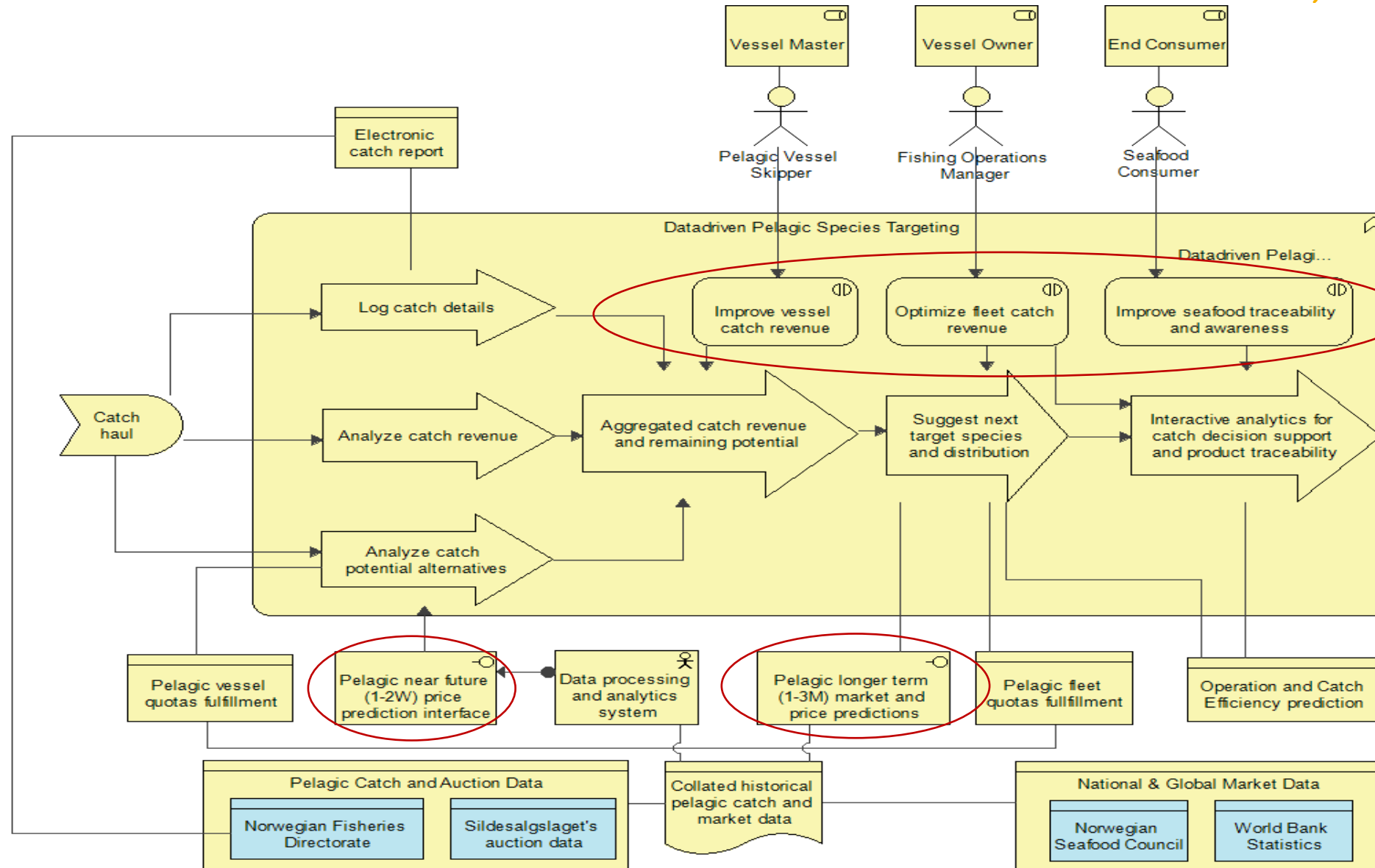
Stakeholders

Business goals &

supporting processes

Big Data analytics

Catch & Market data



Thank you for your attention!

Team CLP & Partners in SINTEF & DataBio

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DataBio WP3 – Fishery pilots – big picture elements

