

Fisheries Management in the Context of Climate Change; European focus (NE Atlantic)

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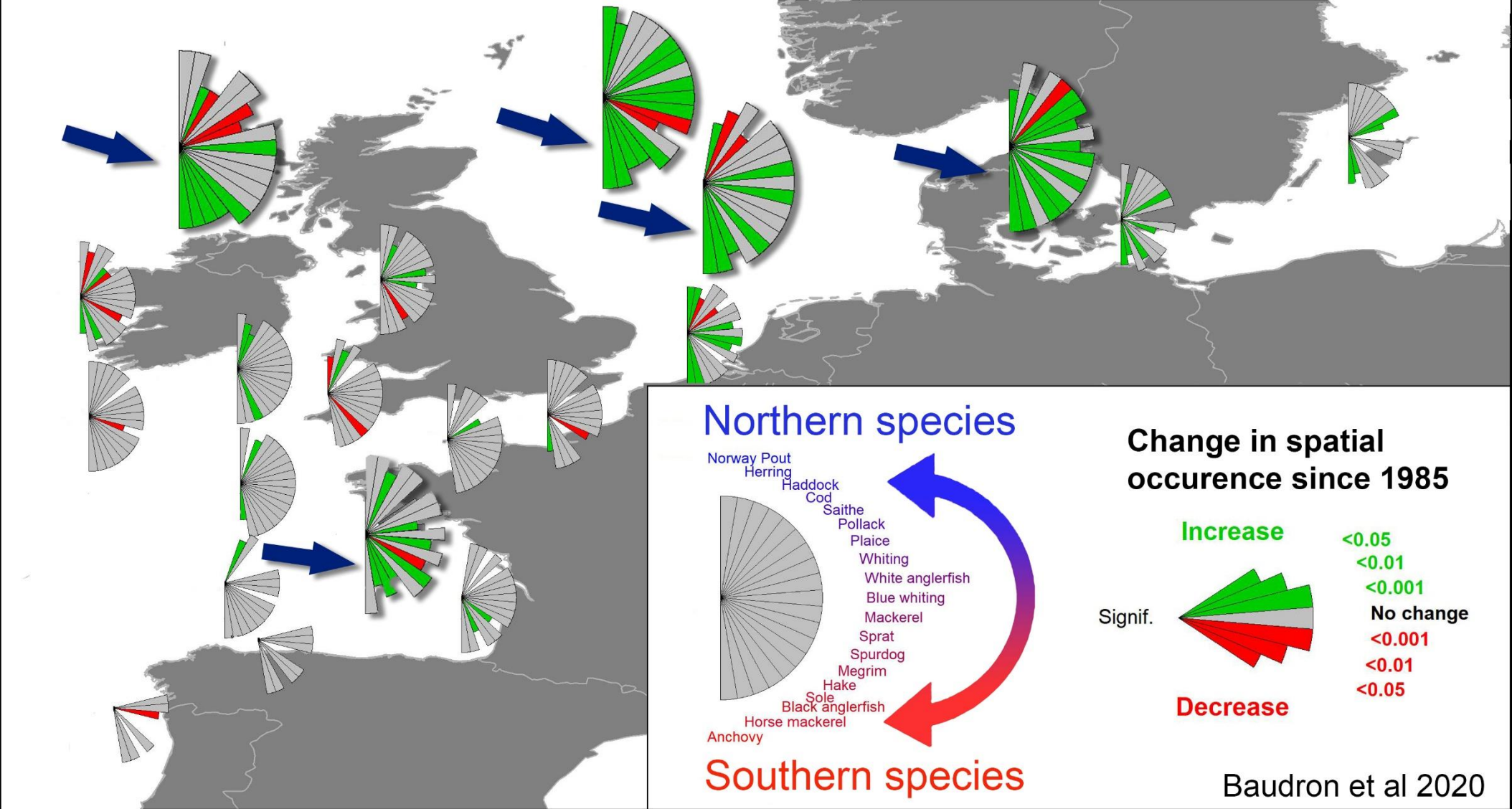
 @DickeyCollas
@ICES_ASC



Science for sustainable seas



Change is happening, evidence from ICES surveys



Projected to change further

Projected abundance of key commercial fish species in 7 European regions by 2050

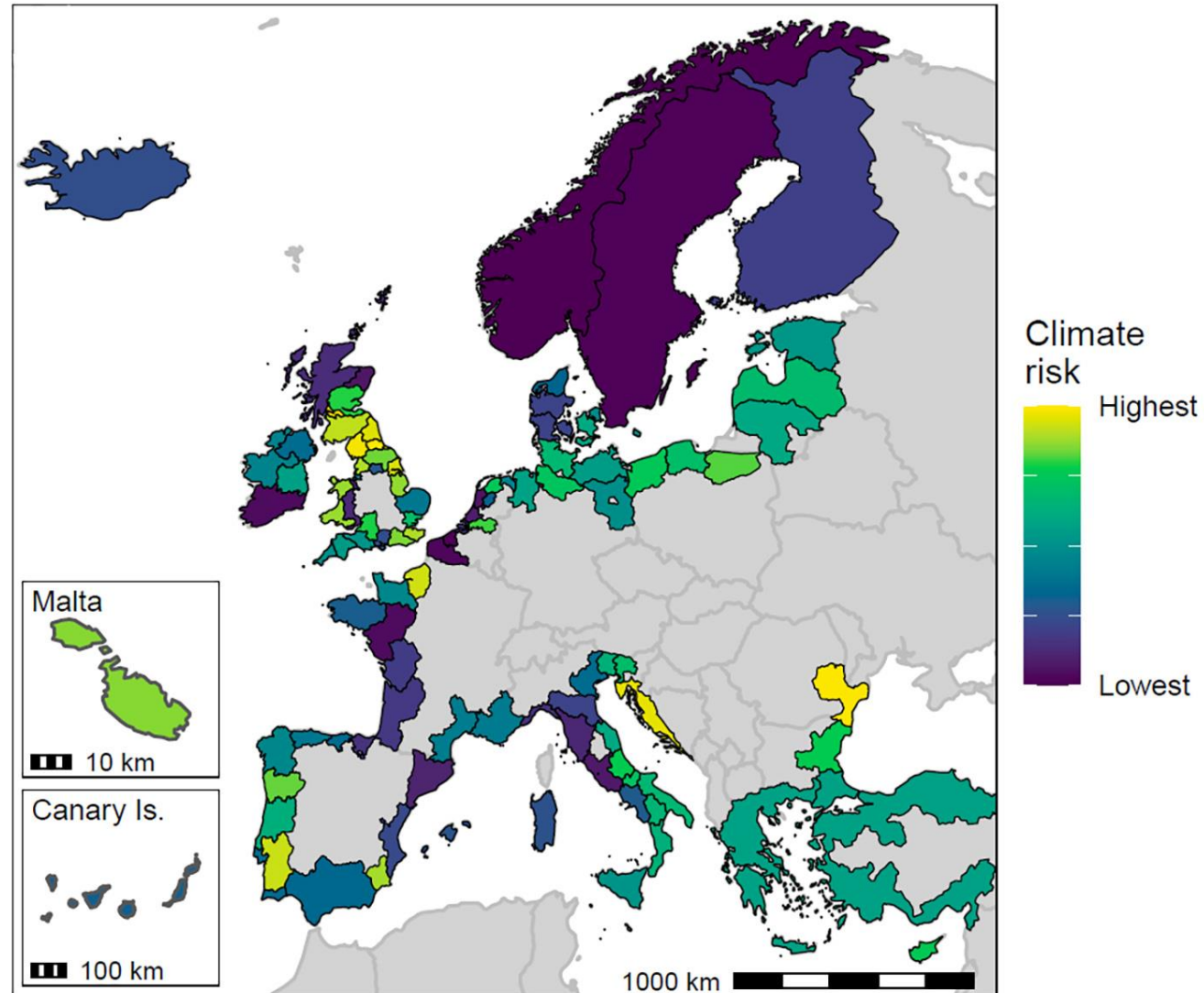
Horizon 2020



<https://ceresproject.eu/>

Projected abundance by 2050 White = no change Red = large change -ve Green = large change +ve Grey = no information		Norwegian / Barents sea	Baltic Sea	North Sea	Northeast Atlantic	Bay of Biscay	W. Mediterranean	Aegean
RCP4.5								
	SST	Red	Red	Red	Red	Red	Red	Red
	Primary production	White	Pink	Pink	Pink	Pink	Green	Green
	Capelin	Green	Grey	Grey	Grey	Grey	Grey	Grey
	Norw. herring	Red	Grey	Grey	Grey	Grey	Grey	Grey
	Sprat	Grey	White	Grey	Grey	Grey	Grey	Grey
	Cod	Pink	White	Pink	Grey	Grey	Grey	Grey
	Saithe	Grey	Grey	Pink	Grey	Grey	Grey	Grey
	Herring	Grey	White	Red	Red	Green	White	Grey
	Horse mackerel	Grey	Grey	White	Green	Green	Pink	Pink
	Mackerel	Grey	Grey	Pink	Pink	Green	Pink	Red
	Sardine	Grey	Grey	Pink	Green	Green	Pink	Red
	Plaice	Grey	Grey	Pink	Pink	Pink	Grey	Grey
	Sole	Grey	Grey	Pink	Pink	Pink	Pink	Red
	Hake	Grey	Grey	Pink	Red	Red	White	Green
	Haddock	Grey	Grey	Pink	Pink	Pink	Grey	Grey
	Anchovy	Grey	Grey	Pink	Pink	Green	Pink	Pink
	Sardinella	Grey	Grey	Grey	Grey	Grey	Green	Grey
	Dolphinfish	Grey	Grey	Grey	Grey	Grey	Dark Green	Dark Green
	Bluefin tuna	Grey	Grey	Green	White	White	White	White
	Red mullet	Grey	Grey	Pink	Pink	Pink	Pink	Pink

Climate risk to European fisheries & ocean dependent coastal communities



Examples of challenges to fisheries system



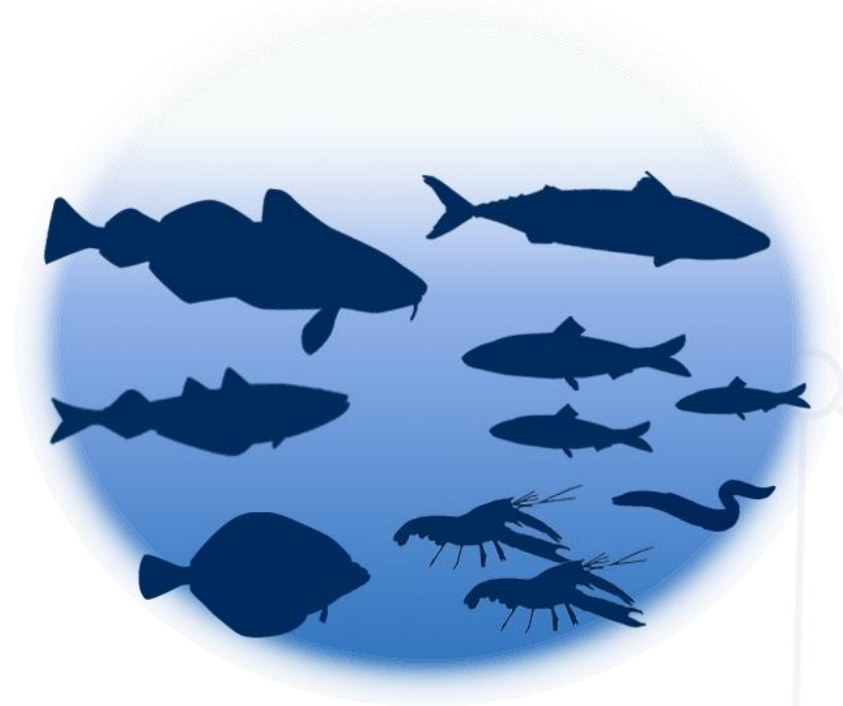
- Note lots of fixed jurisdictions & boundaries
- Each stock has its own coastal states

3 examples:

- EU – adaption
- Coastal states – adaption
- Iceland – carbon mitigation

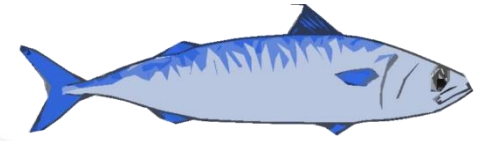
Adaption - EU most evidence is based on stocks but management is of people (fleets)

With stocks changing, & relative stability, leads to under/over utilization & choke species

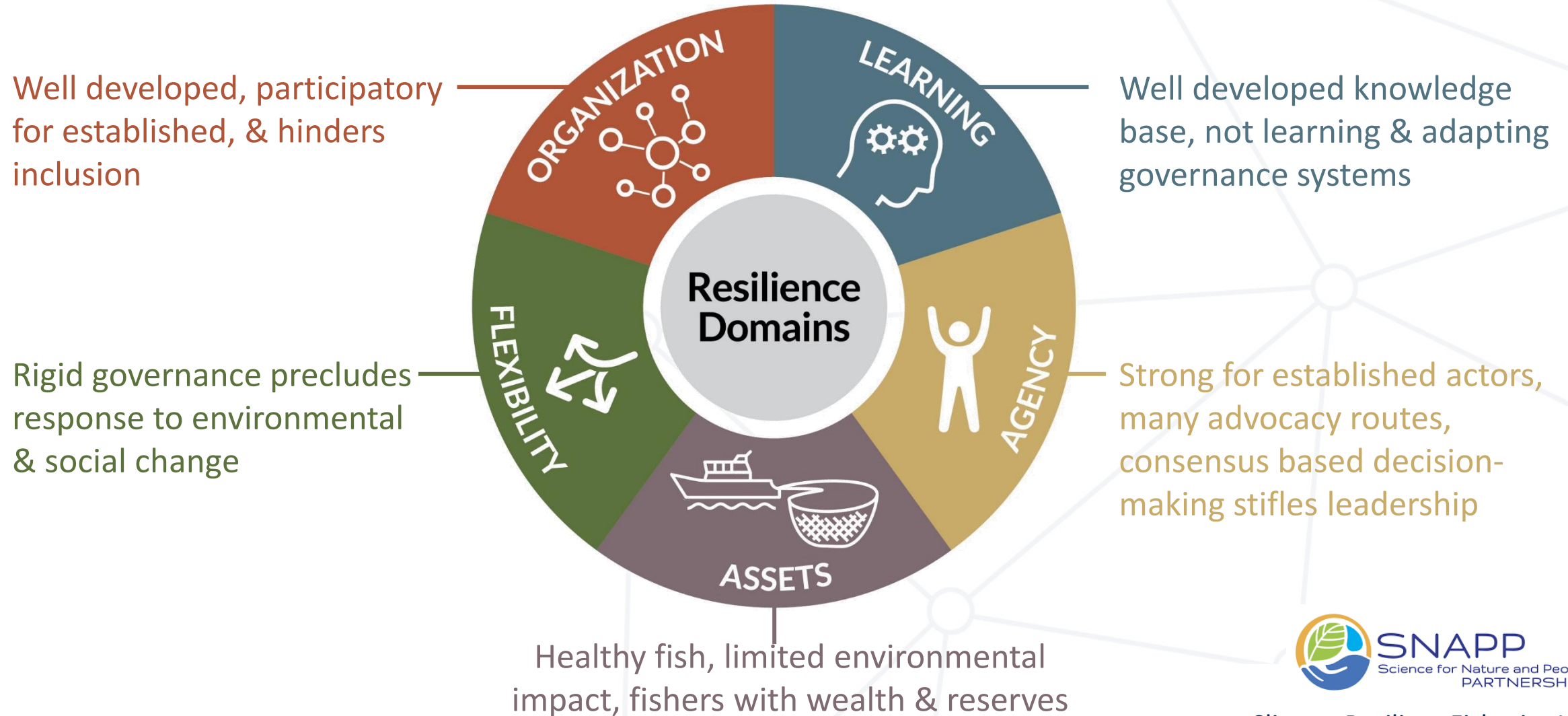


Mixed fisheries advice (fleet & métier) provided by ICES since 2010, let's implement

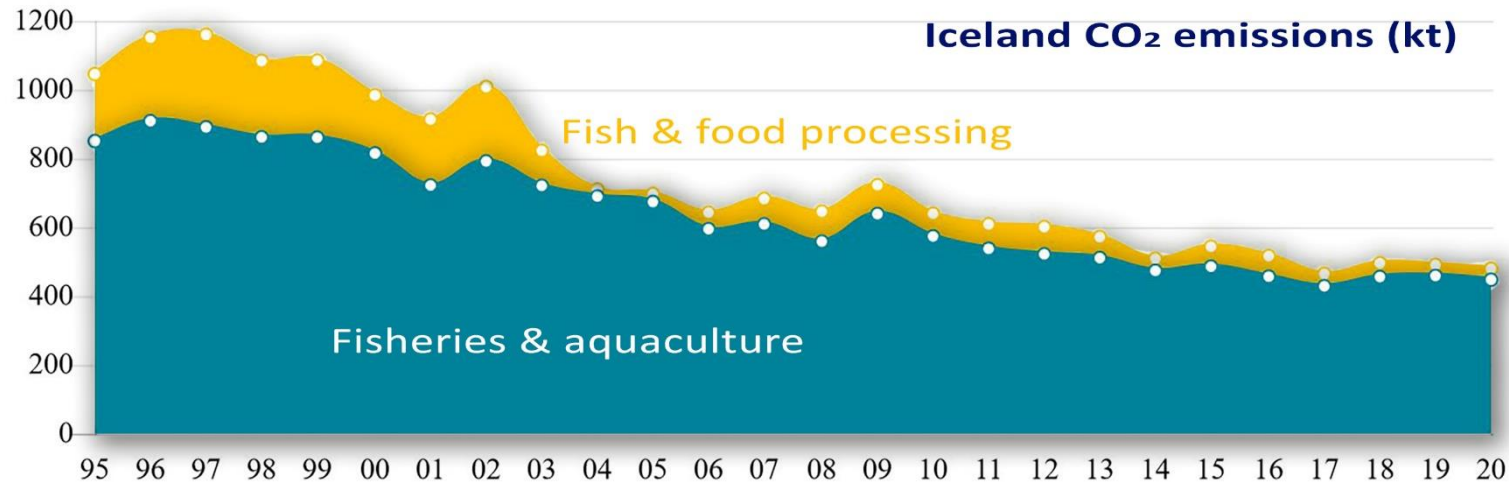
Adaption - Coastal states management of mackerel



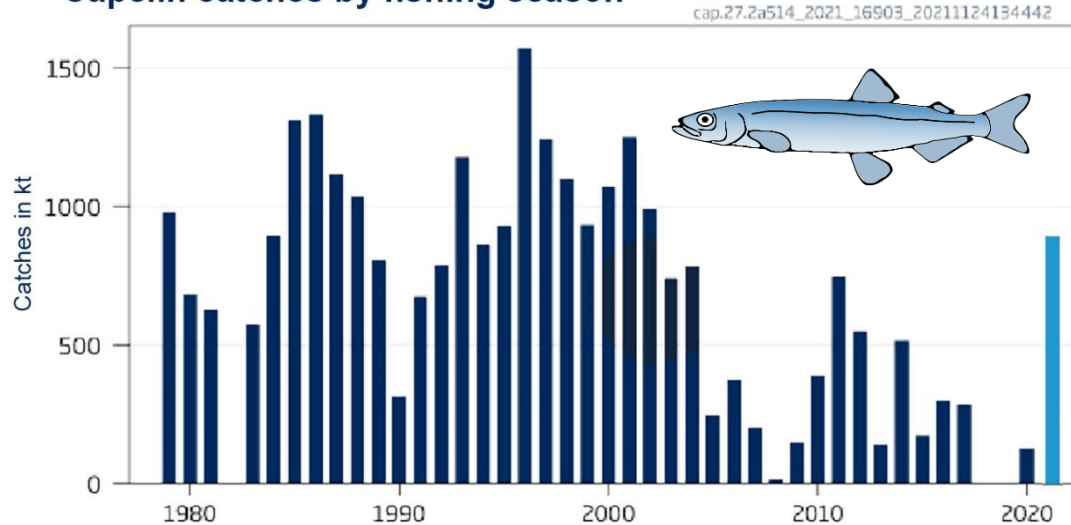
Attributes of climate resilience in fisheries systems, [Mason et al 2021](#)



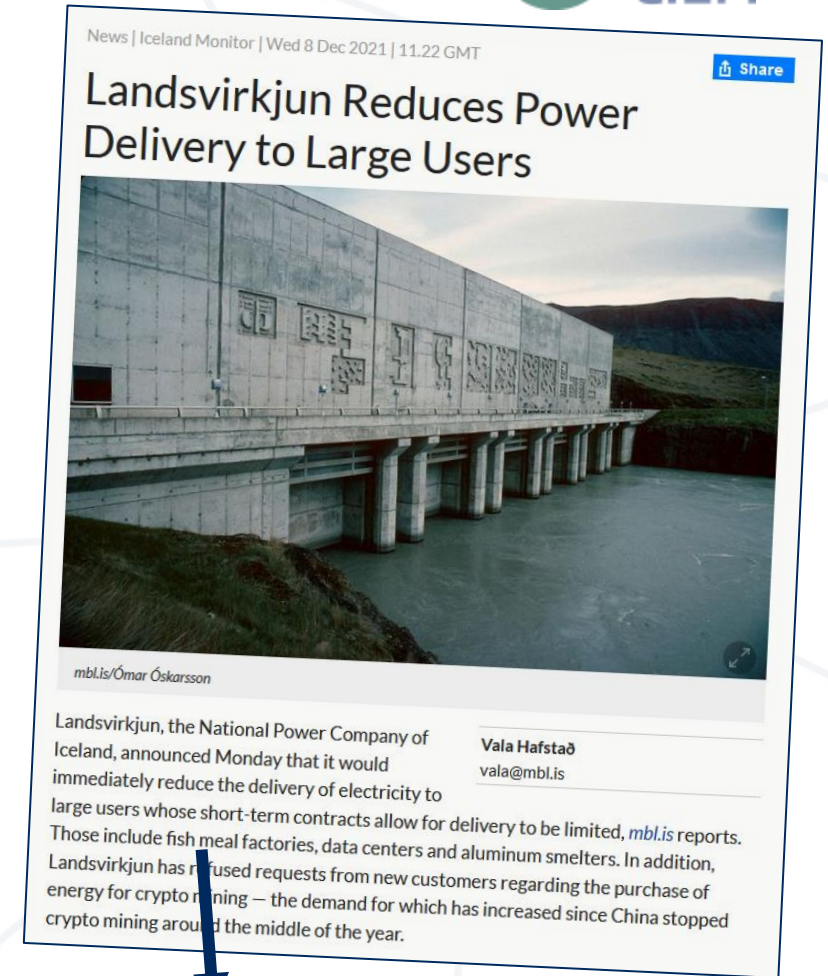
Carbon mitigation - Iceland fisheries system



Capelin catches by fishing season



Potentially add
0.8% to Iceland
GDP



Those include fish meal factories, data centers and aluminum smelters.

Summary

- Change is & will continue to occur, but dramatic evidence for action largely absent in EU
- Climate risk to communities varies by region
- Governance & management system is formalised & rigid, climate change is challenging this system
- Reform must be cross jurisdictional & accounting for impacts of wider system



ClimeFish

<https://climefish.eu/>



<https://ceresproject.eu/>