



**Baltic history comes alive.
Try me & leave a comment!**

**Clarifying the role of local
climate anomalies in a
historic Baltic herring fishery
collapse: a call for
interdisciplinary
collaboration**

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Study Site & Historic Background



Western Baltic

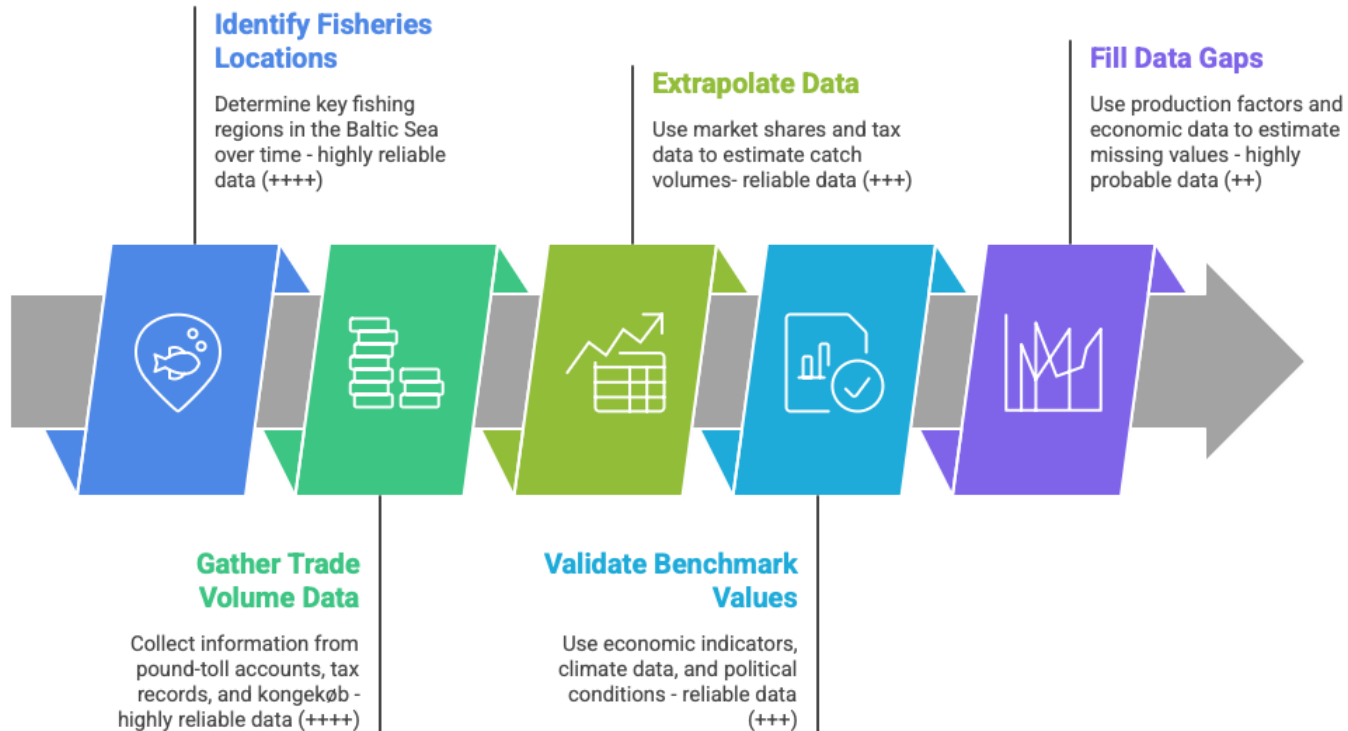
- Fishery for autumn spawning herring
- Small-scale, „amateur“ fishery
- Very important fishery
- Basis of wealth for Hanseatic League
- Fish were salted and traded long-distance

- Reconstruction of herring catches for the period 1200-1650
- Identification of factors influencing the dynamics



Methods

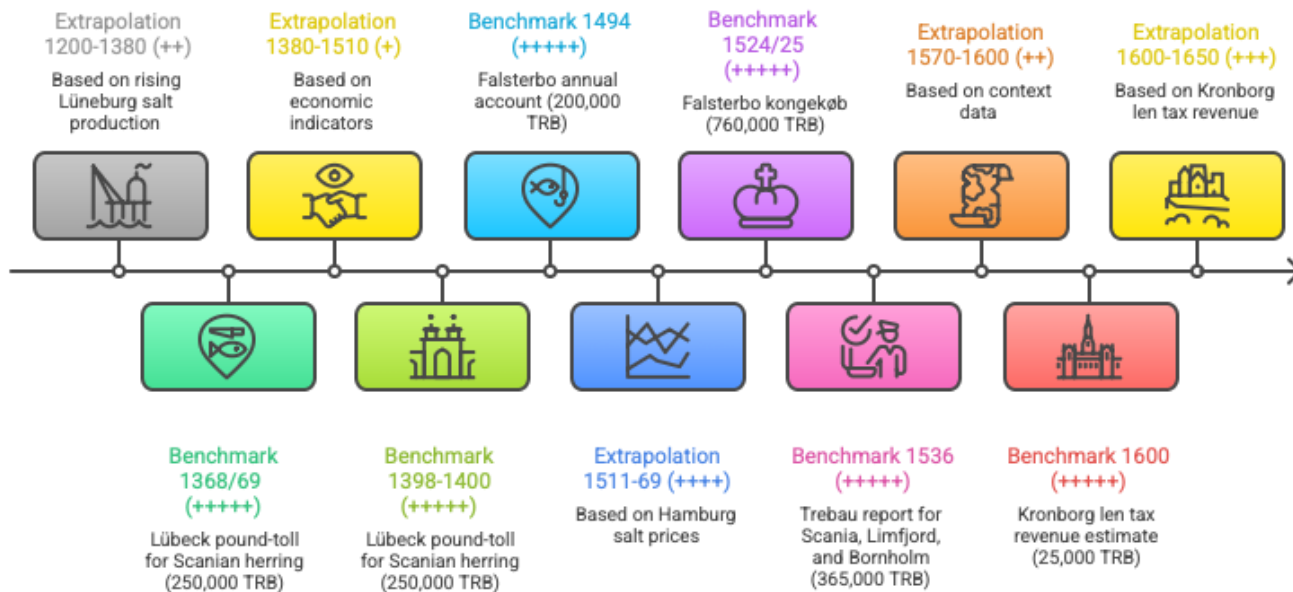
Herring Catch Volume Determination Process





Methods

Herring Catch Volume Estimation in the Western Baltic Sea (1200–1650)



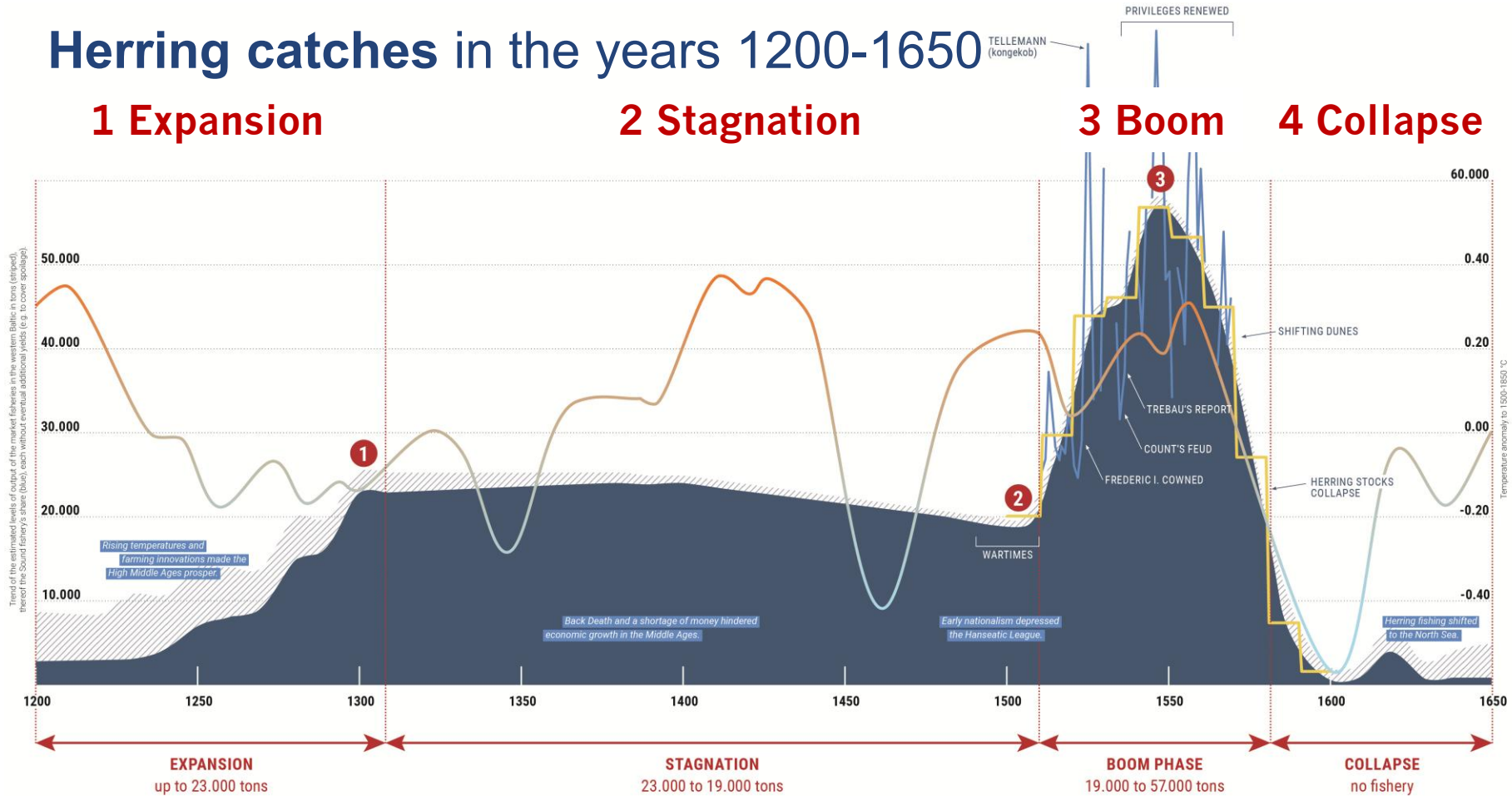
Herring catches in the years 1200-1650

1 Expansion

2 Stagnation

3 Boom

4 Collapse



- 4 major phases
- What caused changes in dynamics?

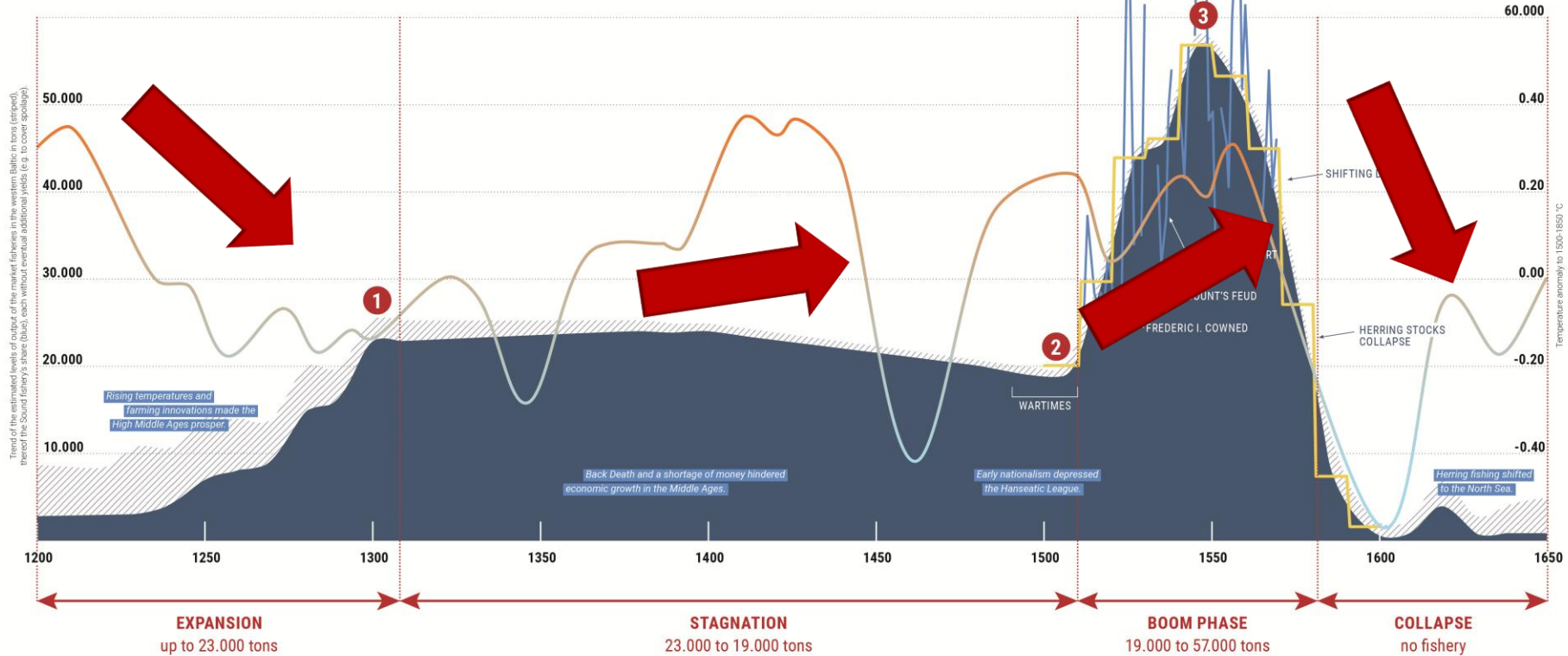
Climate change in the years 1200-1650

1 Expansion

2 Stagnation

3 Boom

4 Collapse





Climate change & overfishing caused collapse?

- Short answer: No! Not alone!
- Results suggest climate signal & overfishing to cause stock decline, but no collapse of the stock
- Include socio-economic factors!



LOOP modeling of fishery system



Climate cooling



Agriculture



Economy



Stock



Population



Demand



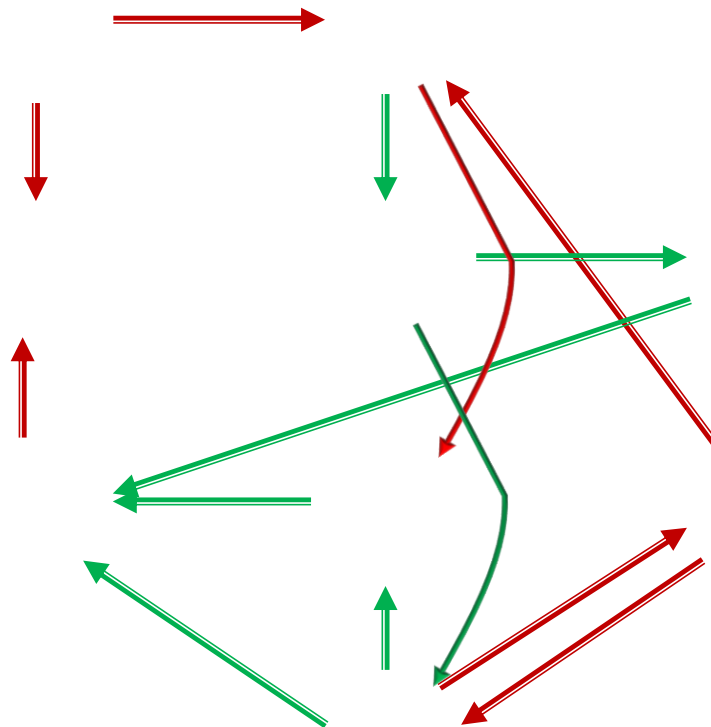
Harvest



War



Workforce





LOOP modeling of fishery system

- Indirect (longer) pathways can be of equal importance
- Dynamics are caused by interplay of climate and socio-economic factors
- Fishery collapse due to climate cooling, overfishing, and competition

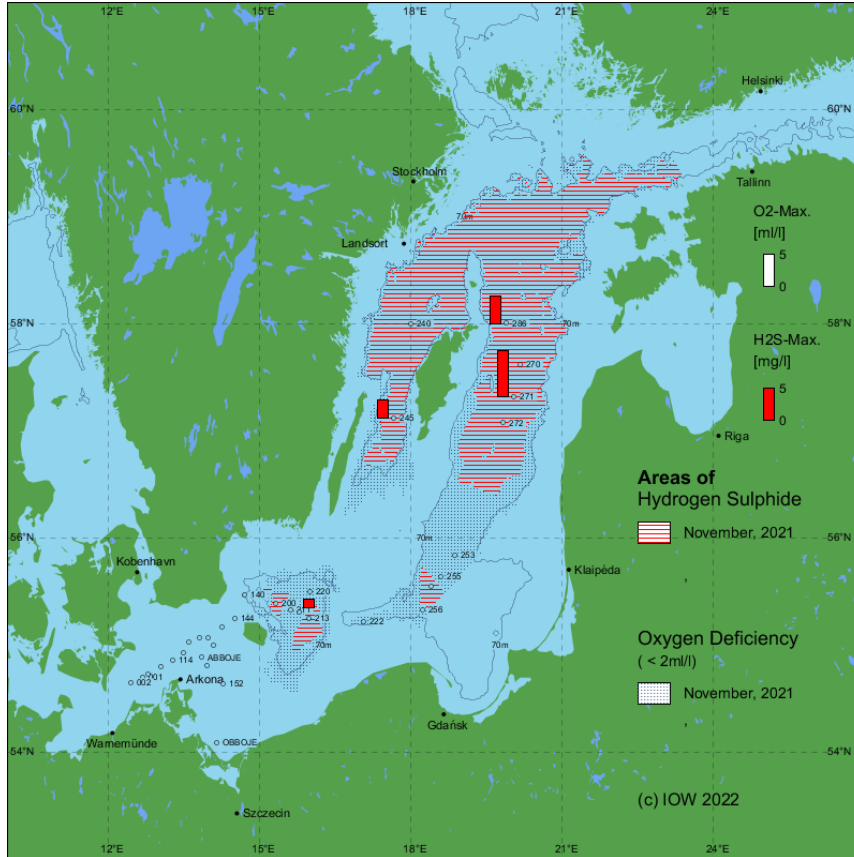


BUT:

- Climate signal only for a large region available – local climate data would be needed to fully understand dynamics
- No knowledge on potential ecosystem changes – trophic interaction changes?
- Catch data time-series – not necessarily mirror stock changes
- Sedimentary records could provide this!
- Sedimentary records could help to explain a major social-economic-ecological tipping point in Western Baltic fishery history



Core availability



- Baltic Sea consists of several deep basins, with oxygen deficiency
- Core are available; plenty of new sampling options
- Potential for sub-decadal climatic signal & ecosystem information
- Let's play together!



Want to travel in time? Check QR codes in Whova App „Photos“



Jörn Schmidt



Meet the fearless viking jarl Snorri Sparrowson, who witnesses the process of salting herring for the first time.



Jörn Schmidt



The farmer, and part-time fisher, Hans Sparrow catches a lot of herring, and has a lot of fun at the Scanian fairs. And he's in love with sweet Geseke...



Rudi Voss



Hard! Nothing to trade for the poor merchant Claus Sparius at Scania. Then fish is gone! Luckily, he now has contracts on cattle.



Oliver Lehmann



Danish toll-keeper, loves the king. And he hates the Hanseatic merchant. Danish is the herring!



Thanks for listening!



952 a.d.:

Meet the fearless viking jarl Snorri Sparrowson, who witnesses the process of salting herring for the first time.

Jörn Schmidt



1250 a.d.:

The farmer, and part-time fisher, Hans Sparow catches a lot of herring, and has a lot of fun at the Scanian fairs. And he's in love with sweet Geseke...

Jörn Schmidt



1580 a.d.:

Times are hard! Nothing to trade for the poor merchant Claus Sparius at Scania. Then fish is gone! Luckily, he now has contracts on cattle.

Rudi Voss



1500 a.d.:

Harald Sparø a Danish toll-keeper, loves the king. And he hates the Hanseatic merchat. Danish is the herring!

Oliver Lehmann