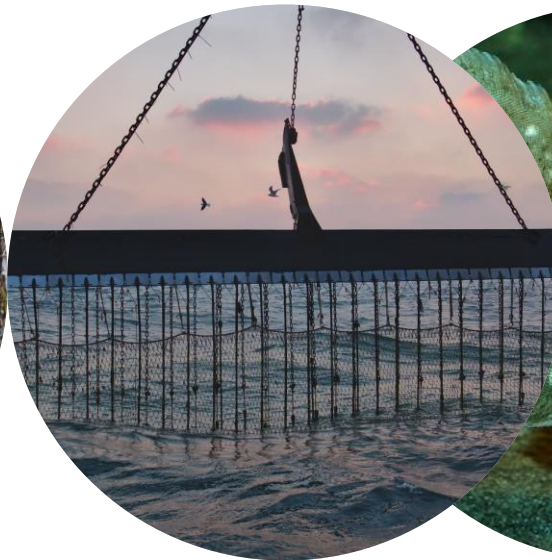


# Fisheries innovation processes: Lessons from the pulse ban and other fisheries

NSAC/EAPO Symposium on Innovative Fishing "Precision-fishing: re-imagining bottom-trawling through innovative gear"

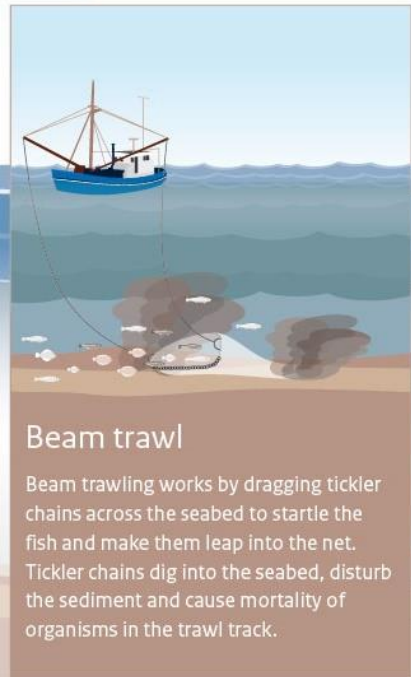
7 March 2024, Nathalie Steins





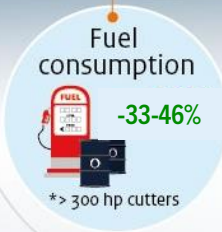
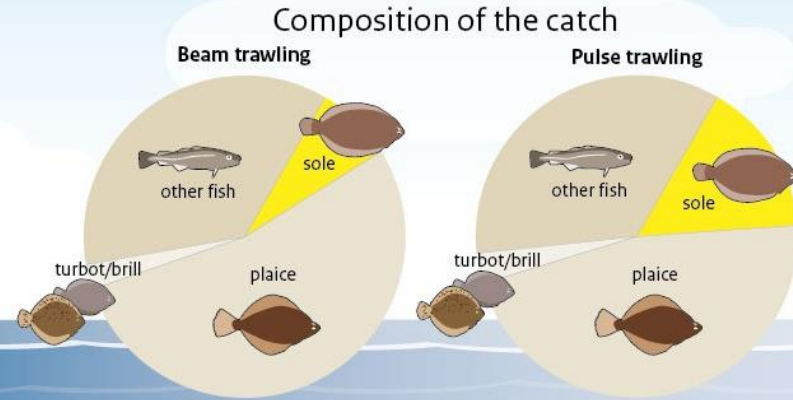
# Pulse Fishing

## Pulse trawling as a promising alternative to beam trawling



### Pulse trawl

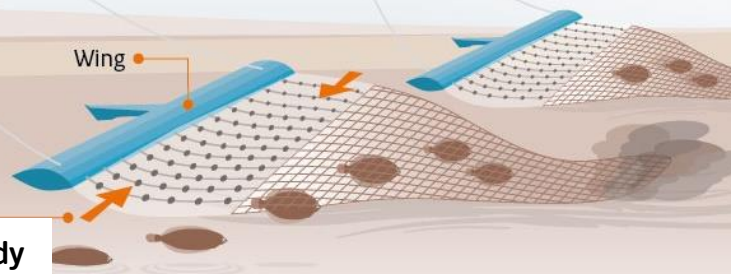
- Improved selectivity of sole.
- Reduced fuel consumption.
- Reduction of discarded benthic fauna and undersized fish.
- Lower mechanical injuries, except for cod.
- Indication of higher survival of discarded sole and plaice.



### Discards reduction



- About **23%** reduction in the seafloor swept per fishing hour
- **50%** reduced penetration of gear into the seafloor



### Main findings multi-annual ecosystem impact study

- Improved selectivity of sole
- Reduced fuel consumption
- Reduced discards of benthic invertebrates and undersized fish
- Pulse-induced injuries are restricted to cod with negligible population level impact
- Reduced mechanical injuries and higher survival of discarded plaice and sole
- No adverse effects of pulse stimulation could be detected on biogeochemistry and benthic invertebrates



# What happened?



Home News Agrifood EU parliament calls for ban on electric pulse fishing

### EU parliament calls for ban on electric pulse fishing

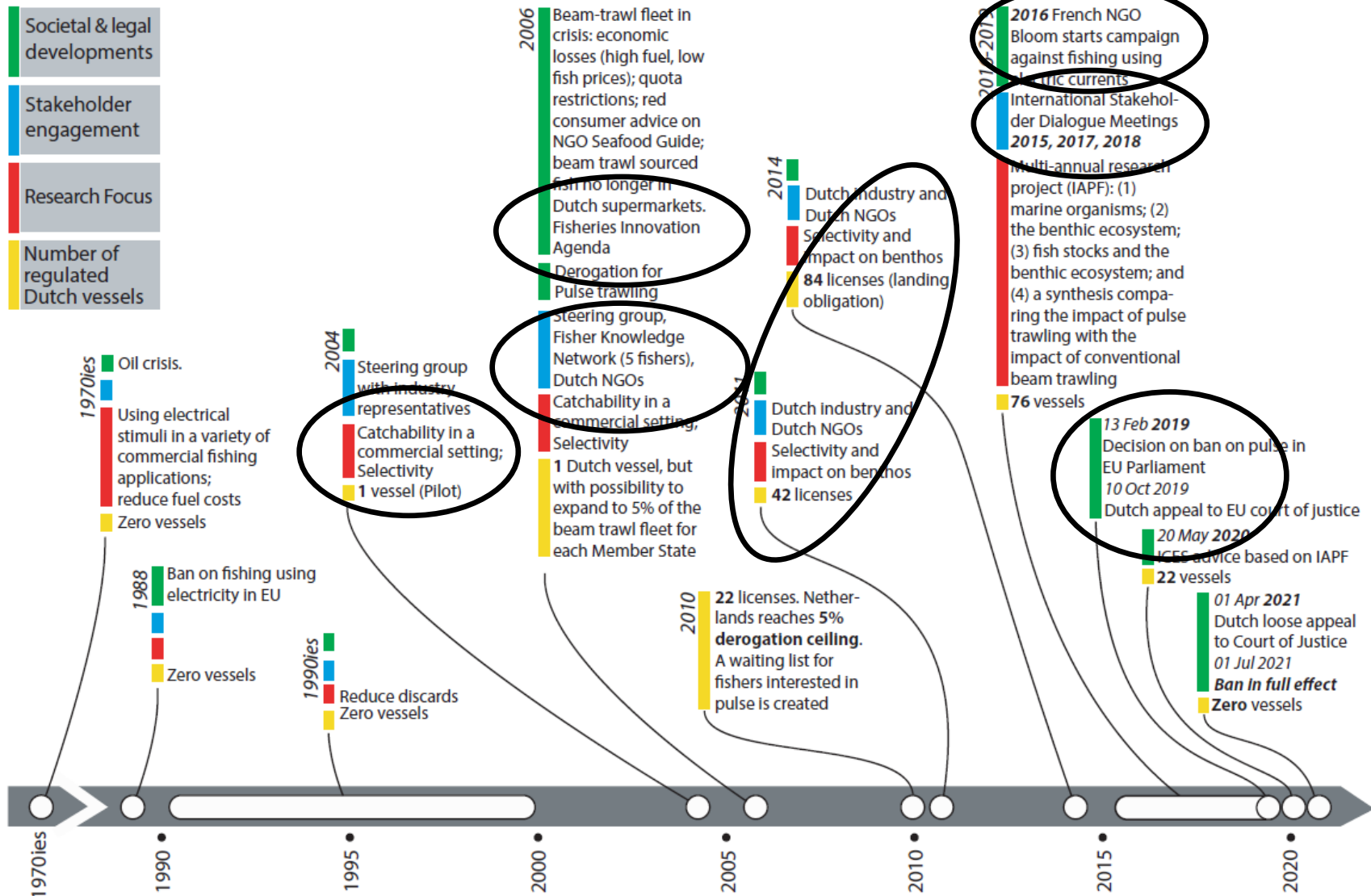
SUBACTV.com with AFP @151



<p><b>FALSE</b></p> <p>Bloom says: <b>'MARINE ORGANISMS ARE KILLED AND DAMAGED BY PULSE FISHING'</b></p>	<p><b>TRUE</b></p> <p>Research shows: <b>'WEAK PULSES DO NOT HURT OR KILL THE MARINE ORGANISMS'</b></p> <p><i>On the contrary: unwanted catch is reduced by 50% (Wijnborg et al. 2017), and survival of unwanted catch has increased (van der Reyden et al. 2017).</i></p>
<p><b>FALSE</b></p> <p>Bloom says: <b>'DAB ARE DAMAGED BY PULSE FISHERY'</b></p>	<p><b>TRUE</b></p> <p>No scientific study shows that pulse fishing causes injuries on dab <b>'SKIN LESIONS OR HAEMORRHAGES ATTRIBUTABLE TO PULSE EXPOSURE WERE NOT OBSERVED IN THE EXPERIMENTS'</b></p> <p><i>Pulse trawl fishing: The effects on dab (Limanda limanda) Dick de Haan et al. 2015. There are multiple causes like pollution, extreme temperatures, viral infections or small infected wounds.</i></p>

You have an important voice in the future of sustainable pulse fishing by Voting for Pulse on January 16th. A lot of fake news is incirculation about pulse fishery. With this newsflash we inform you about what is false and what is true!

Contact:  
VisNed: Pim Visser 0031 653146220 - Nederlandse Vissersbond: Durk van Tuinen 0031 642408572



# Combination of factors influenced the pulse innovation process



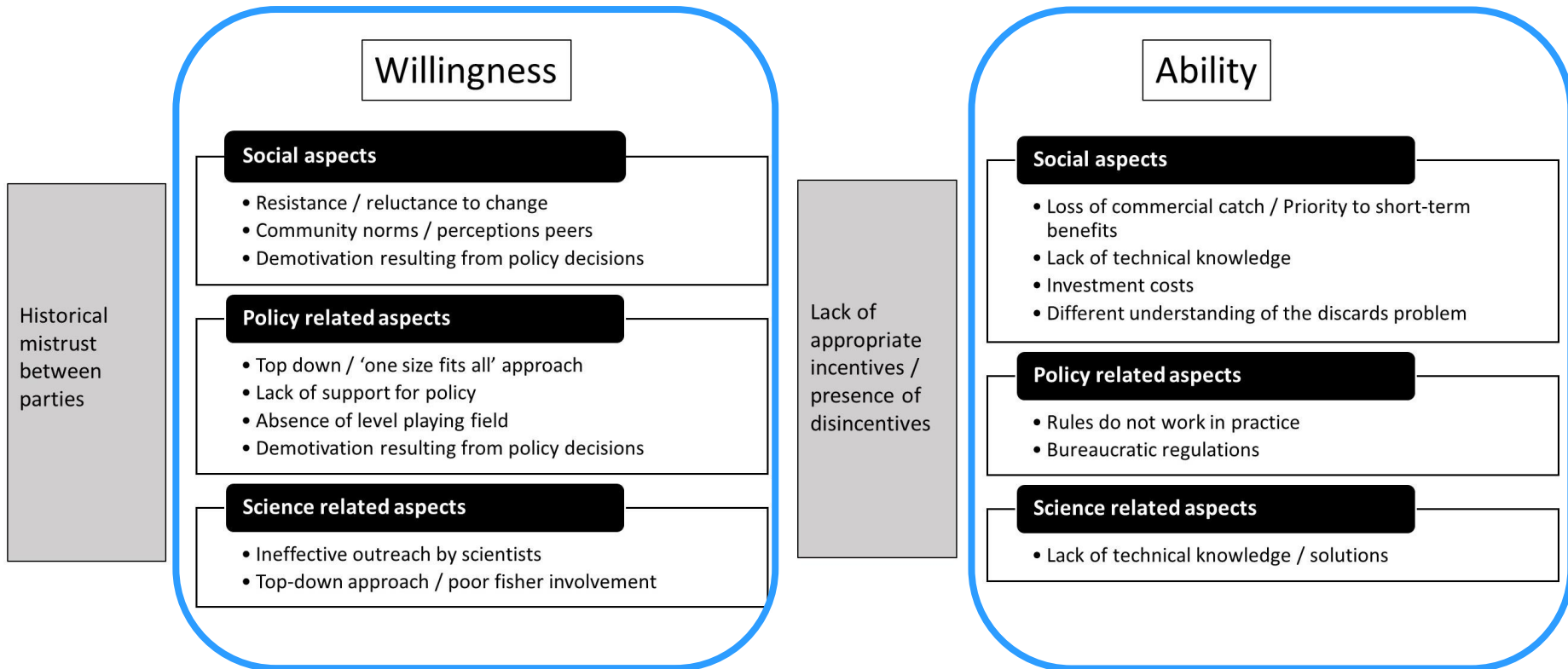
Overall:  
“consistent failure to recognise adequately the importance of addressing social and economic impacts on actors other than those directly involved in the innovation process”

#### Sources:

- Figure: istockphoto.com
- Citation: Delaney et al., 2022, doi: 10.1080/23308249.2022.2047886



# Reasons for low uptake of proven gear or net innovations



# General lessons from proof-of-concept to fishing practice

- Bottom-up approach
- Fisher Knowledge Network
- Compensation for revenue loss
- Be aware of PESTEL
- More focus on 'willingness' as a driver



# Additional lessons for transformative\* or disruptive\* gear innovation processes

(lessons from Delaney et al., 2022)

- Independent oversight
- Social Impact Analysis (SIA)
- Co-produce adaptive research
- (If needed) Define limits and stick to them



# Caution



“shared understanding and co-production of knowledge throughout the process does not automatically guarantee successful science-based introduction of innovations, as the political decision-making process is also influenced by lobby, political interests and (potentially) court cases”

# Thank you for your attention

Further reading gear  
innovation processes:



Contact:

[nathalie.steins@wur.nl](mailto:nathalie.steins@wur.nl)

+31 (6) 192 63336

 @NathalieSteins

