

# Conservation-focused biomass rebuilding plan is important for climate adaptation

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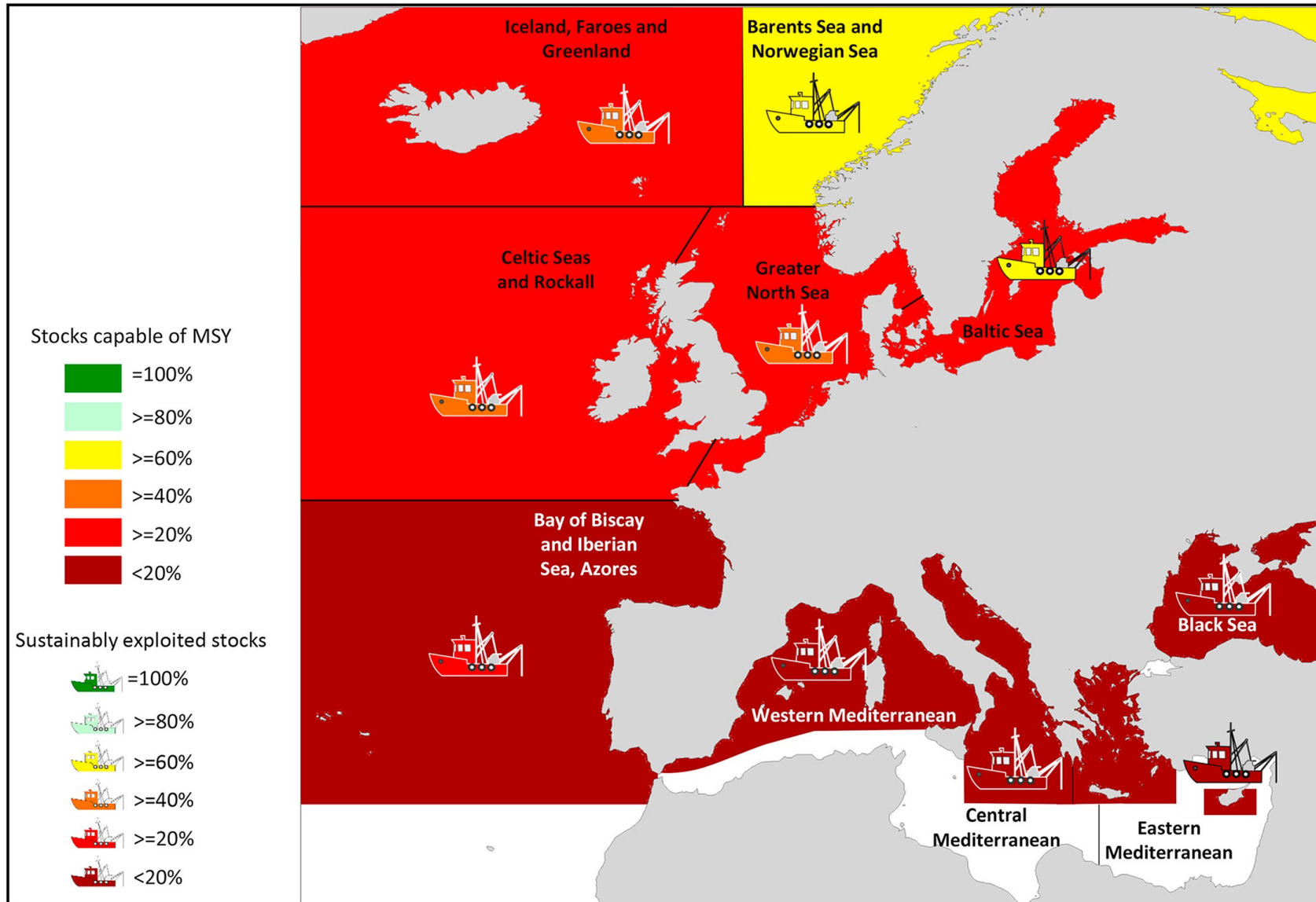
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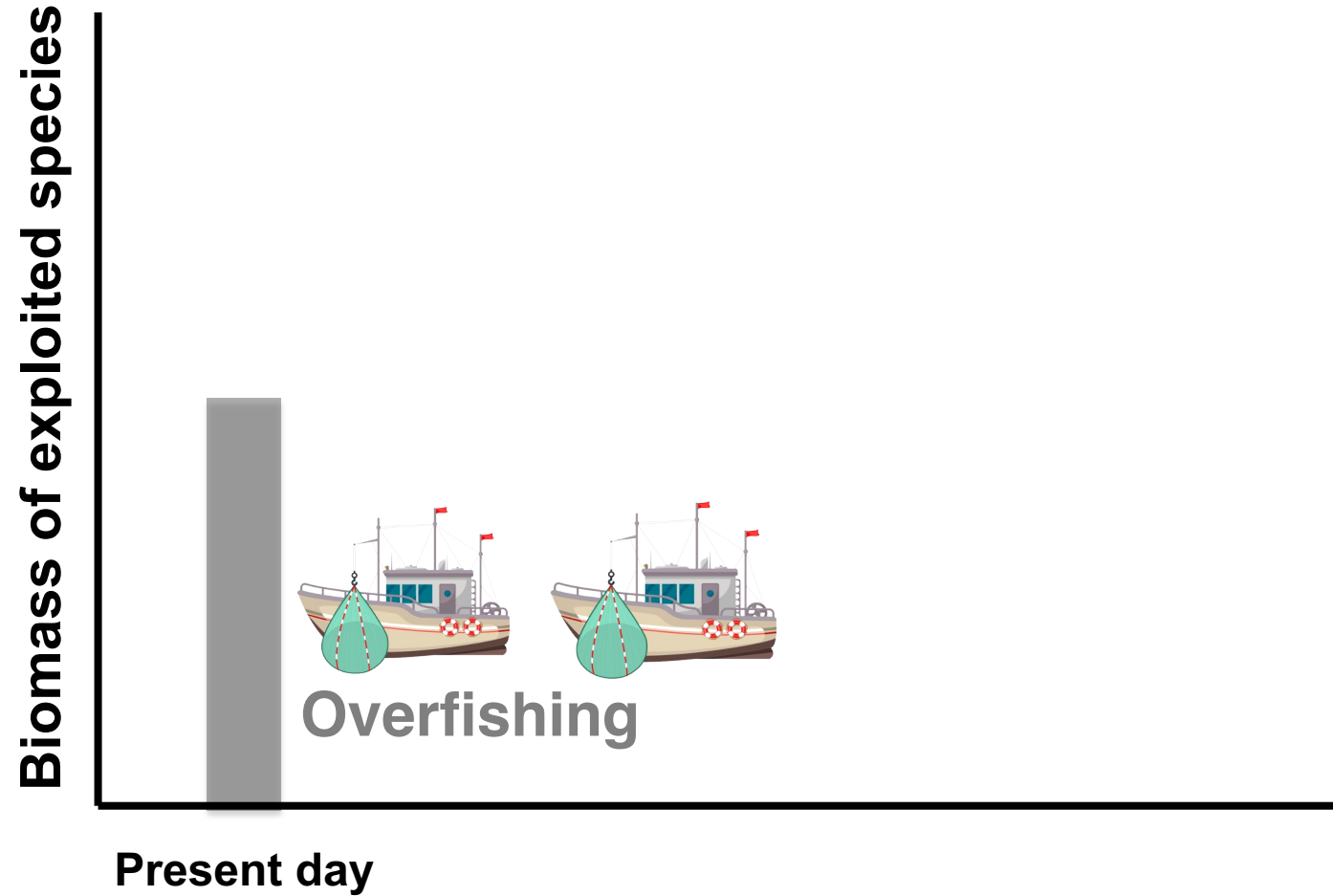


# Many exploited fish stocks need to be rebuilt

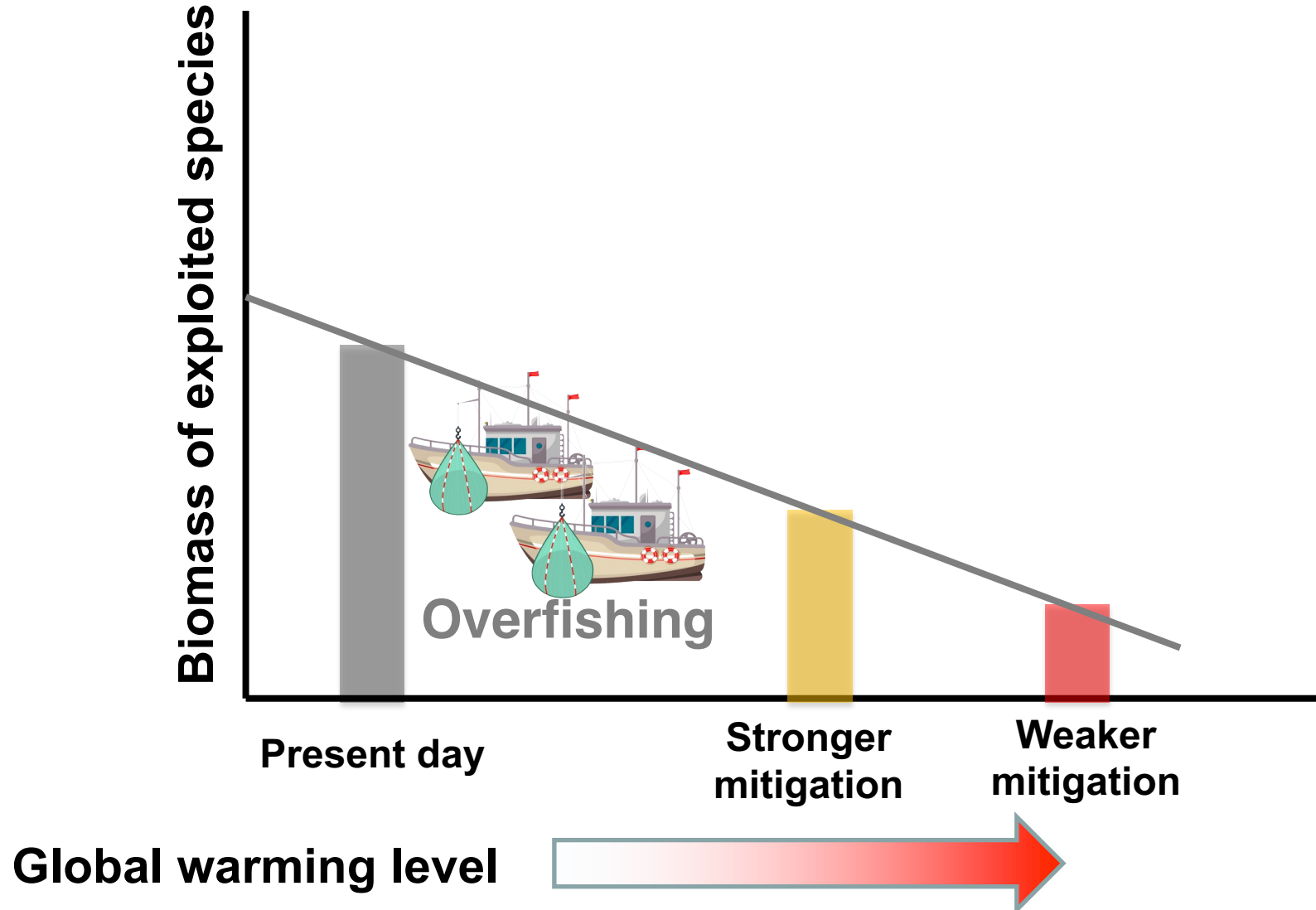


Source: Froese et al. (2018) ICES Journal of MS

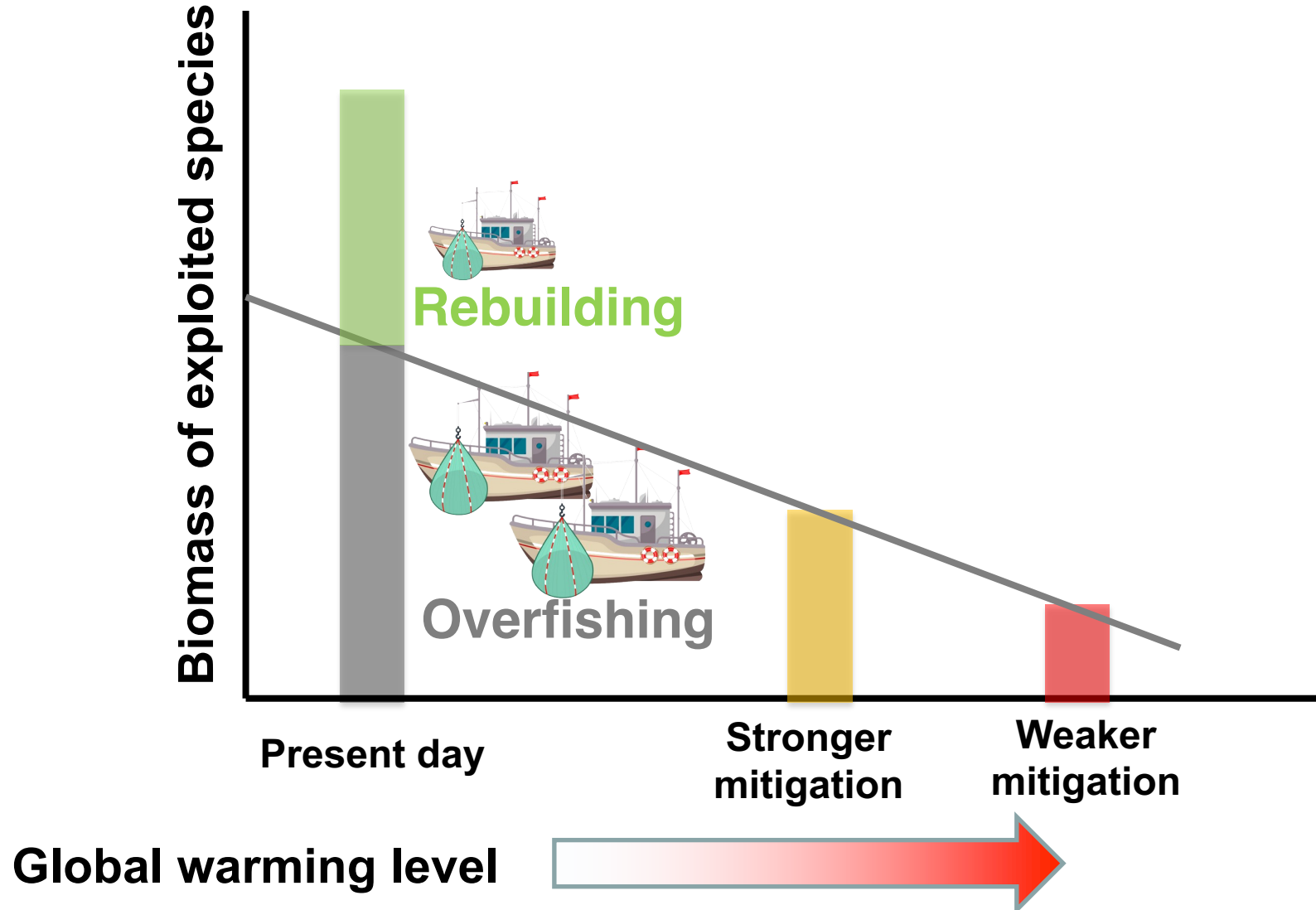
**Stock biomass of over-exploited is  $<50\%$  of unexploited level**



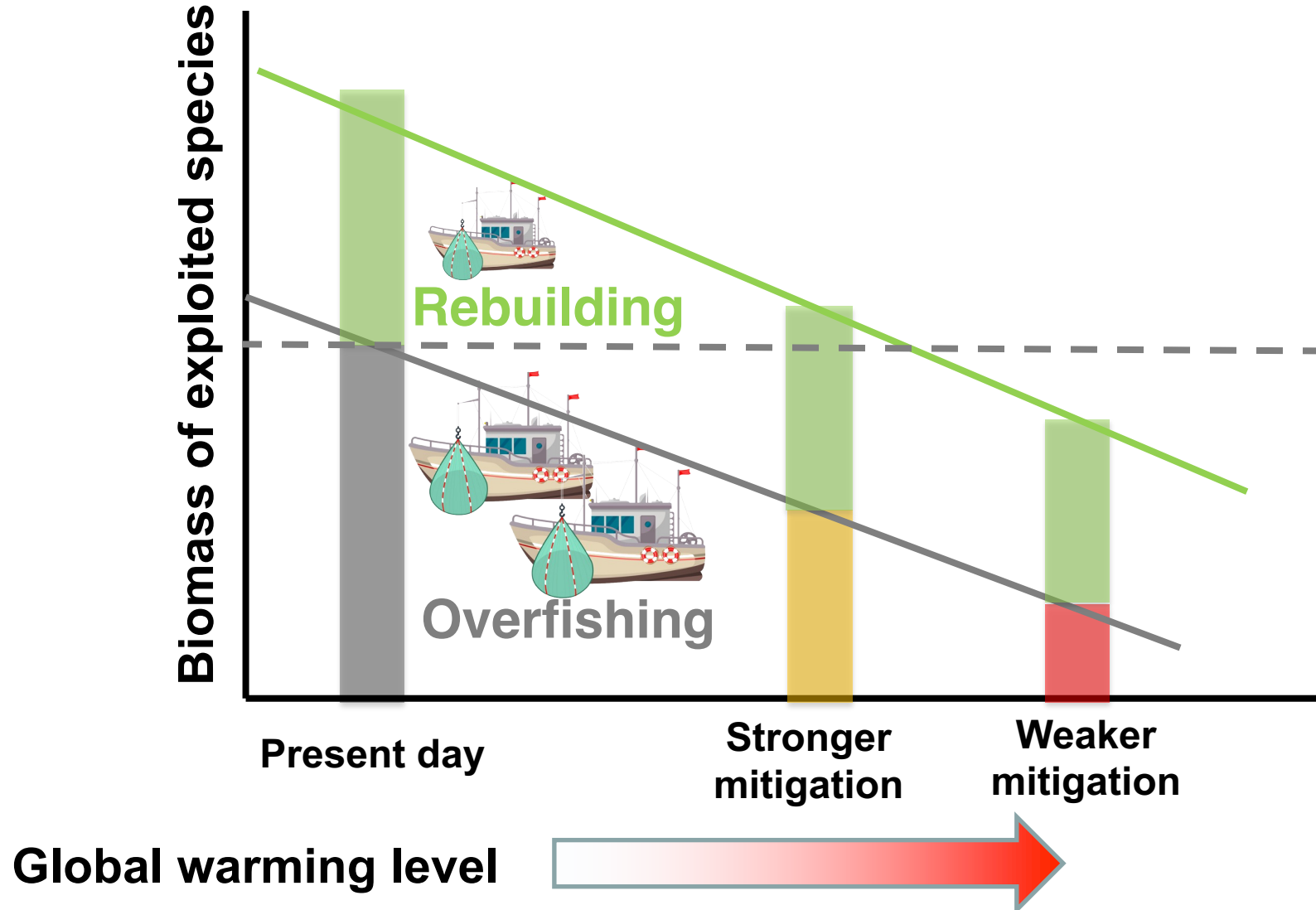
**Climate change is projected to further reduce stock biomass in most European marine regions, especially those in the south**



# Fishing intensity needs to be reduced substantially to rebuild over-exploited fish stocks to sustainable targets



**More conservation-focused rebuilding plan, in addition to climate mitigation, is needed to achieve biomass target under climate change**



# Modelling and data analysis

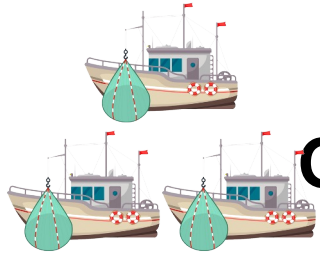


Source: <https://www.techrepublic.com/article/why-your-data-analysis-may-be-doomed-from-the-start/>

# Stock biomass of 15 Europe's marine regions (relative to pre-industrial unexploited level)

Weak carbon  
mitigation (+ 3.5 °C)

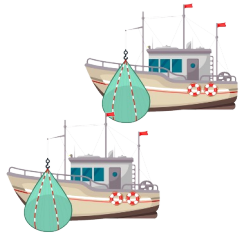
Strong carbon  
mitigation (+1.5 °C)



**Over-exploited**

**10 – 16%**

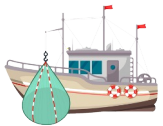
**10 – 20%**



**Maximum  
sustainable  
yield as target**

**29 – 42%**

**39 – 45%**



**Conservation-  
focused target**

**46 – 67%**

**63 – 69%**



# Summary

- Conservation-focused biomass rebuilding plan, including managing fishing effort and setting up effective marine protected areas, is needed to achieve rebuilding targets under climate change;
- Portfolio of ocean-based solutions are necessary, including sustainable fisheries management, transformation to low carbon ocean economy, and other nature-based solutions.