

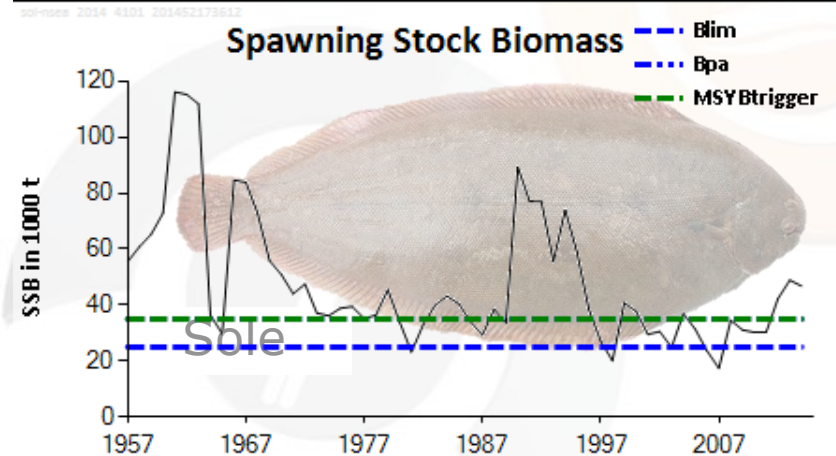
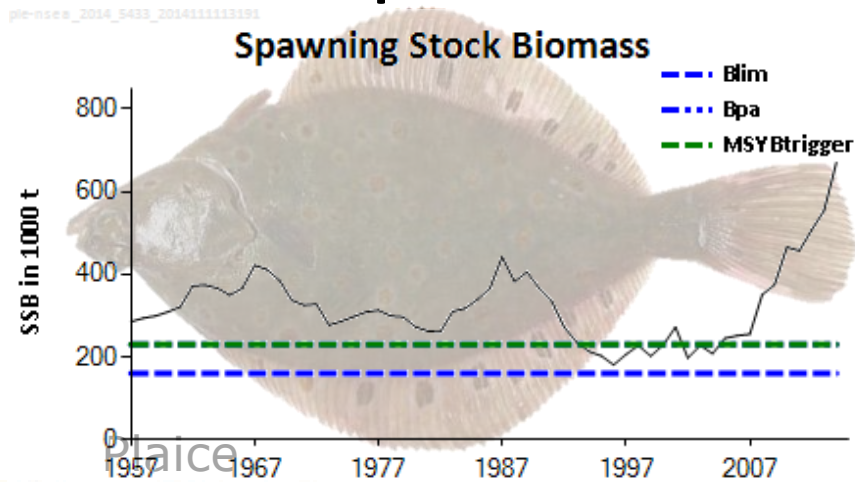
# Landing obligation in the North Sea flatfish fishery

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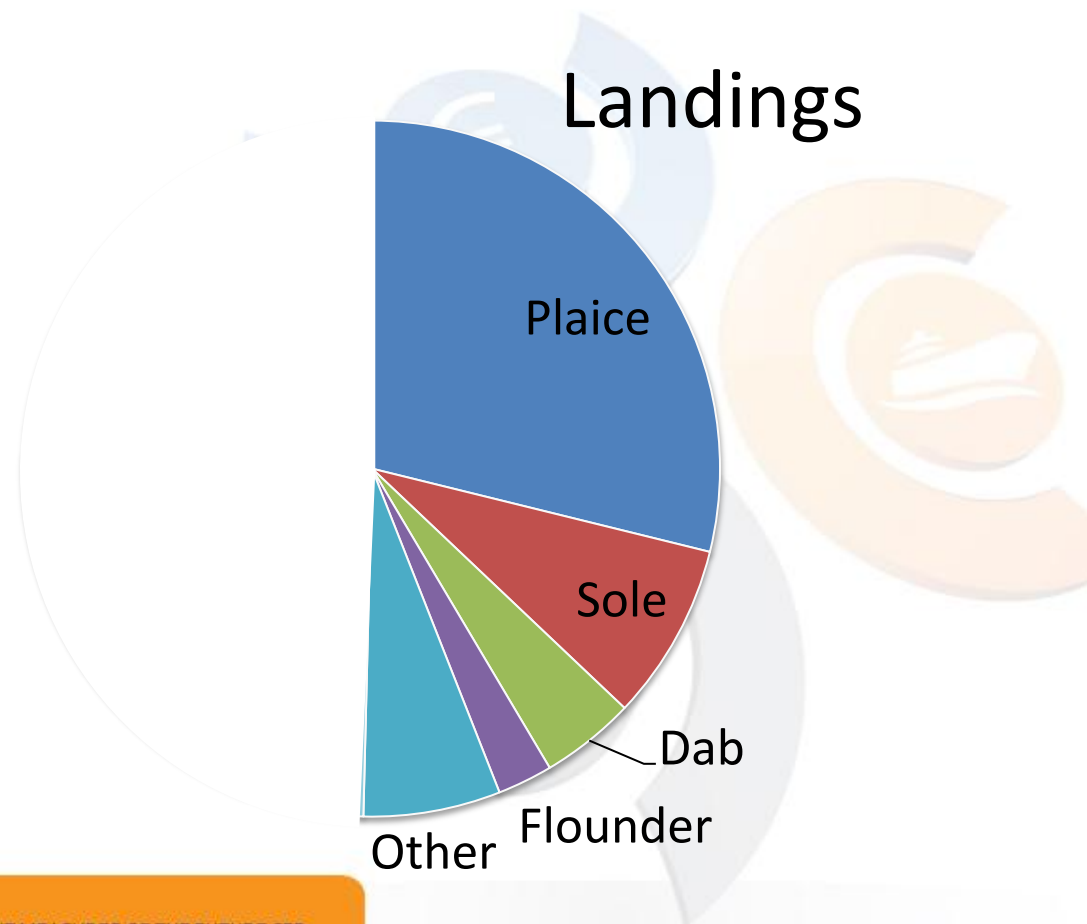
- **Presentation of the fishery**
- **Implementation of the landings obligation**
- **Impact assessments**
  - **Static**
  - **With change in behaviour**
- **Concluding remarks**

- North sea flatfish fishery
  - 2 main species



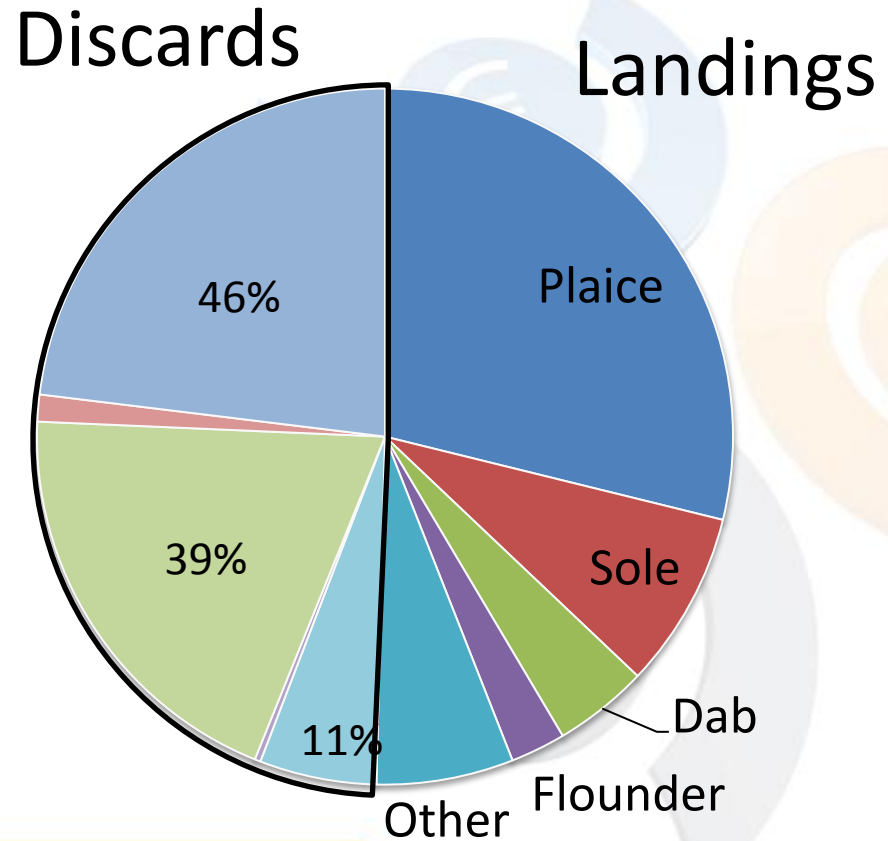
# The fishery

- **North sea flatfish fishery**
  - 2 main species
  - **Bycatch 27%**



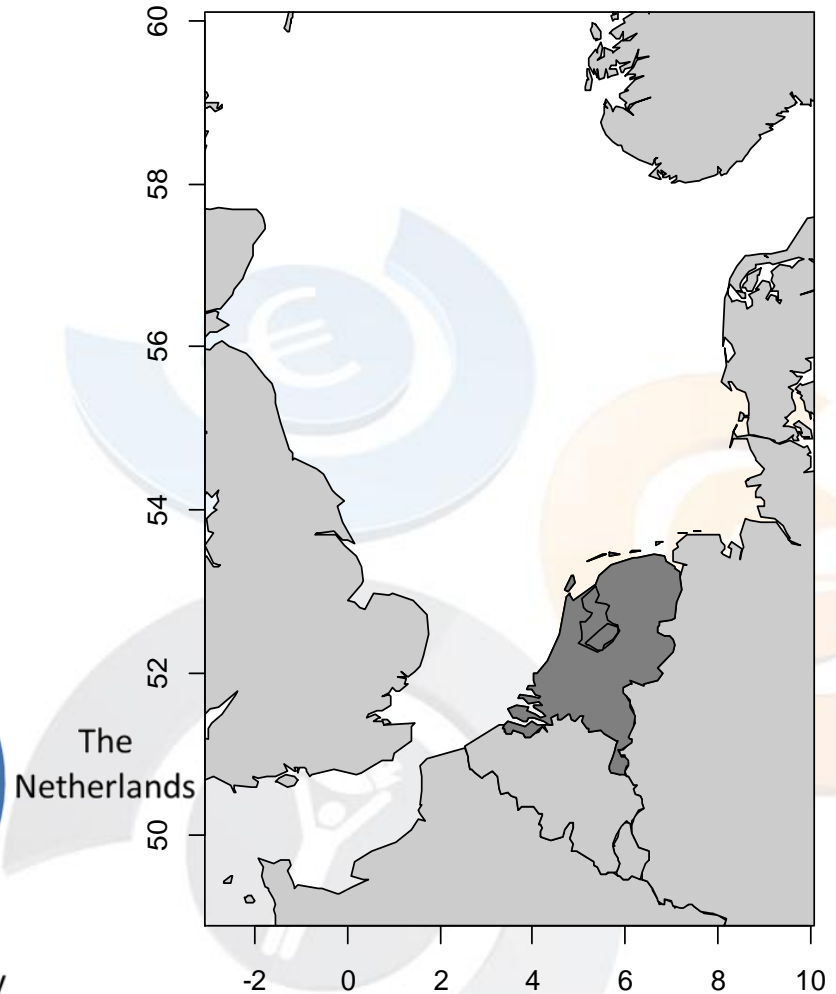
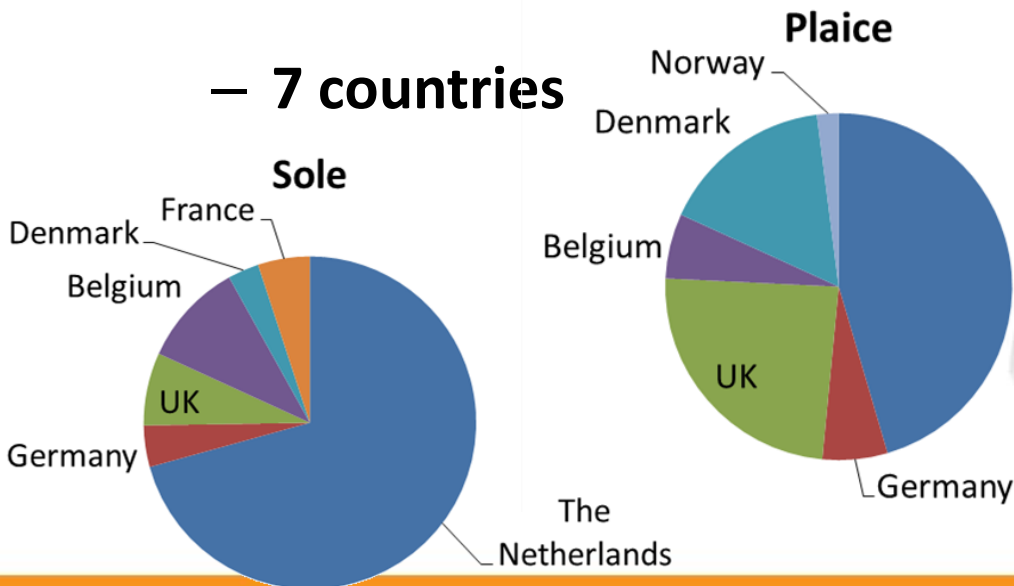
# The fishery

- **North sea flatfish fishery**
  - 2 main species
  - **Bycatch + Discards**



# The fishery

- **North sea flatfish fishery**
  - 2 main species
  - Many bycatch
  - 7 countries



# The fishery

- **North sea flatfish fishery**
  - 2 main species
  - Many bycatch
  - 7 countries
  - Different gears



Sumwing, source ILVO



Flyshoot, source Visserijnieuws



Pulse, source Ecomare



Beamtrawl, source noordzeeloket

# Implementation of the LO

- **First phase 2016 – 2019 art. 15-1-c**

“From 1 January 2016 at the latest for the **species which define the fisheries** and from 1 January 2019 at the latest for all other species in:

- (i) the North Sea
  - ...
  - fisheries for common sole and plaice”
- **2016-2019: All sole and plaice must be landed (other species can be discarded)**

# Implementation of the LO

- **Expected economic impacts**

## Extra costs

- Extra labour costs sorting and handling
- Extra storing, transport and landing costs
- Extra steaming costs
- Extra monitoring costs

## Extra revenue

- Sale of previously discarded fish (undersized → no human consumption)

# Impact evaluation (1)

- **Static evaluation: “what if *Dutch* fishers had to land all catch in 2011”** Buisman *et al.* 2013
- **Extra costs:**
  - Labour: +0.5 to +1.5 FTE/vessel
  - Transport & Landing: +0.14€/kg
  - Steaming: only for smaller vessels +30% trips
  - Monitoring: CCTV / observer
- **Extra revenue (market study):**
  - 47.000t as fish meal: 150 to 300 €/t

# Impact assessment (1)

- Economic Results: Dutch flatfish fishery**

	15cts/kg	30cts/kg
Extra revenue	6.7 M€	13.4 M€
Extra costs	19 M€	19 M€
Net loss (excl. control)	-12.3 M€	-5.6 M€
Control costs	18.9 M€	18.9 M€

- Possible missed fishing opportunity because of choke species**

# Impact assessment (2)

- **Bio-economic model: fishers can adapt their effort allocation to avoid undesirable catch**
- **Simulations 2016-2019, plaice and sole only**
- **Extra costs and revenue taken from the static analysis:**
  - Labour: +0.21€/kg +1.5 FTE
  - Transport & Landing: +0.15€/kg
  - Steaming: +30% steaming effort for fleets 18-24m
  - Revenue: 0.15€/kg or 0.30€/kg
- **2 TAC scenarios: level of current landings or catch**
- **Sensitivity analysis on fuel and fish price**

# Impact assessment (2)

- **Objectives:**
  - sole and plaice at  $F_{MSY}$
  - **Maintain economic viability and attractiveness of fleets**
  - **Maintain social stability**

# Impact assessment (2)

- **Effectiveness**
  - **Biological:** Sole close to Fmsy, Plaice underexploited
  - **Economic:** situation worsen compared to status quo but fleets still viable (-4%) and attractive (-20%)
  - **Social:** wages still above minimum salary but -8%
- **Efficiency**
  - Net Present value of profit -20% compared to status quo
  - Profit in early years -8M€/yr, after 5yrs -5M€/yr
- **Resulting “discards” -9 to -4%**

# Impact assessment (2)

- **Effect of TAC setting**
  - Landings vs Catch level → no effect because of plaice stock
- **Effect of external factors**
  - 5.5% annual increase fuel price → - 10% profit
  - 15 to 30ct/kg → +15% profit

# Limits of the methods

- **Capturing the response to landing obligation**
  - **Assume no change in catchability ...**
    - ... while gears are changing**
  - **Expect change in spatial distribution to avoid unwanted catches ...**
    - ... but not enough discard data at gear, spatial, seasonal level**

# Concluding remarks & discussions

- **Negative economic impact**
- **Hard to predict how fishers will adapt**
  - New gears
  - Fisheries specialisation
  - Change in fishing behaviour due to handling costs
- **Details of implementations complex**
  - Interspecies flexibility
  - Exemptions based on survival rates, possibility to be more selective, or if handling unwanted catches would incur “disproportionate costs”
  - Banking and borrowing
  - Definition of target species

# Thank you for your attention

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