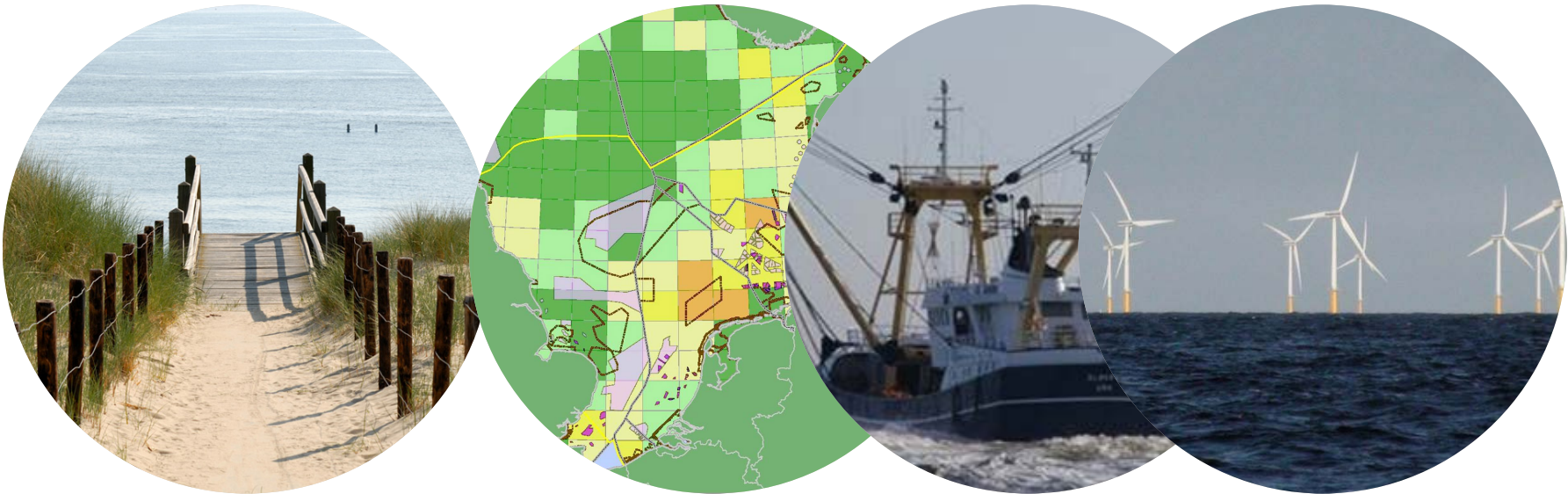


# One finger cannot lift a pebble

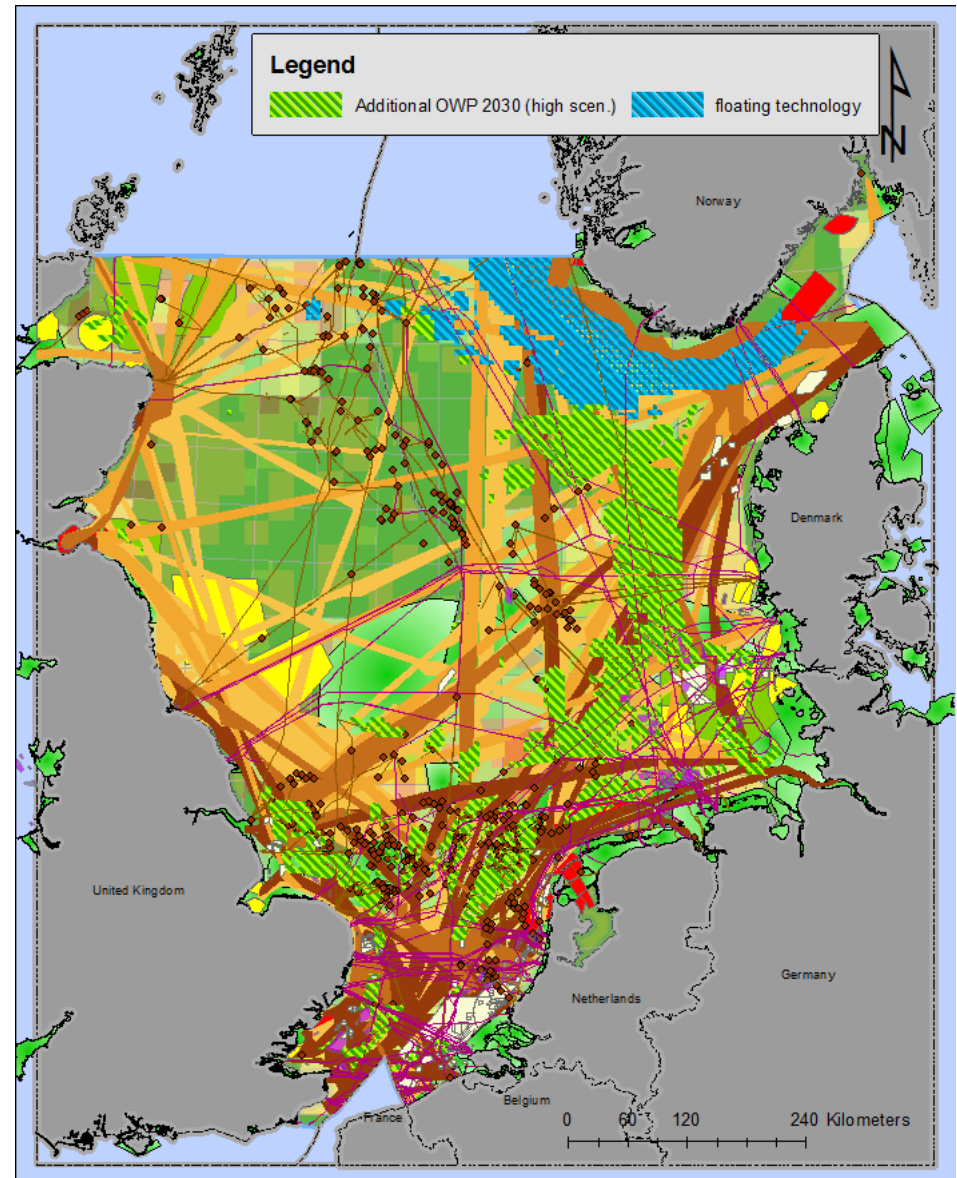
## *Opportunities and barriers for multi-use in the North Sea*

MARE 28 June 2013. Josien Steenbergen, Robbert Jak, Christine Röckmann, Katrine Soma, Jan Tjalling van der Wal, Frans Veenstra, Luc van Hoof



# Use of Central and Southern North Sea

- Intensively used
- Mainly closer to shore



# Future plans:

## Blue growth (EU)

- Fish & fish products ↑
  - Sustainable Fisheries
  - Space for aquaculture
- Renewable energy ↑
  - NL Wind farms X 12 (6000 MW in 2020)
  - Tidal energy
- Space for nature conservation ↑
  - N2000





# Uses have different demands



Hans Verdaat



Lennert Wolfs



Ingeborg de Boois

# May the best man win? Or.....

- The one optimal solution does not exist
- Its a political choice
- And space is getting limited....
- Multi-use as solution:
  - Use of alternative fishing methods in MPA's
  - Oil-platforms and aquaculture
  - Wind farms at N2000 area's
  - Wind farms and static gears
  - Wind farms and aquaculture



# Problems for integration

- (Lack of) incentive big players (Wind Farms)
  - Profitability
  - Innovative character of added uses
- Risks
  - Financial
  - Insurance
- Laws / Jurisdictions

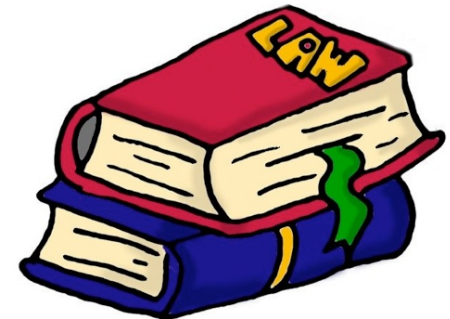


# Who's problem is it?

- Technical?
- Operational?
- Governance?
  - Who owns what?
  - Who is responsible for what?
  - Who can decide?
  - About what can you decide?
  - Who determines all this

$$m \frac{d^2 \vec{x}}{dt^2} = -k\vec{x} - b \frac{d\vec{x}}{dt}$$

$$m \frac{d^2 \vec{x}}{dt^2} + b \frac{d\vec{x}}{dt} + k\vec{x} = 0$$

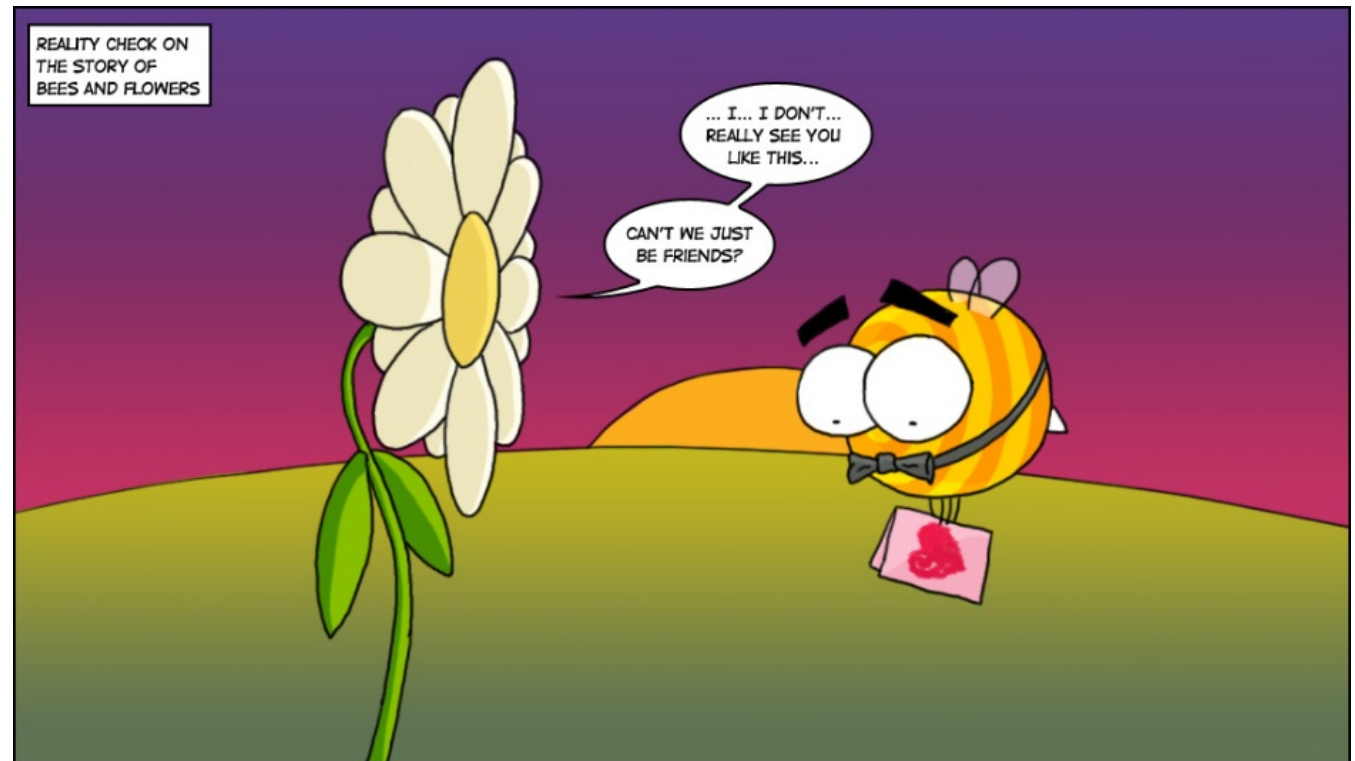


# Looking for win-win

**Multi-use is....**

Looking for win-win: eco-optimalisation

Science can help in identifying smart combinations



ADVENTURES OF THE BICI BEE #050: "BEES AND FLOWERS"

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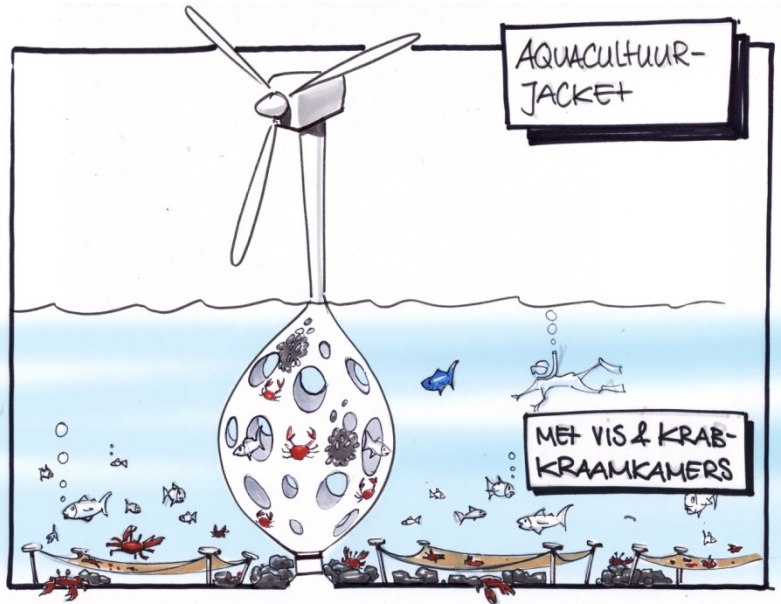


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# Possible solutions



& creating incentives :

- Corporate social responsibility
- Reducing operational cost



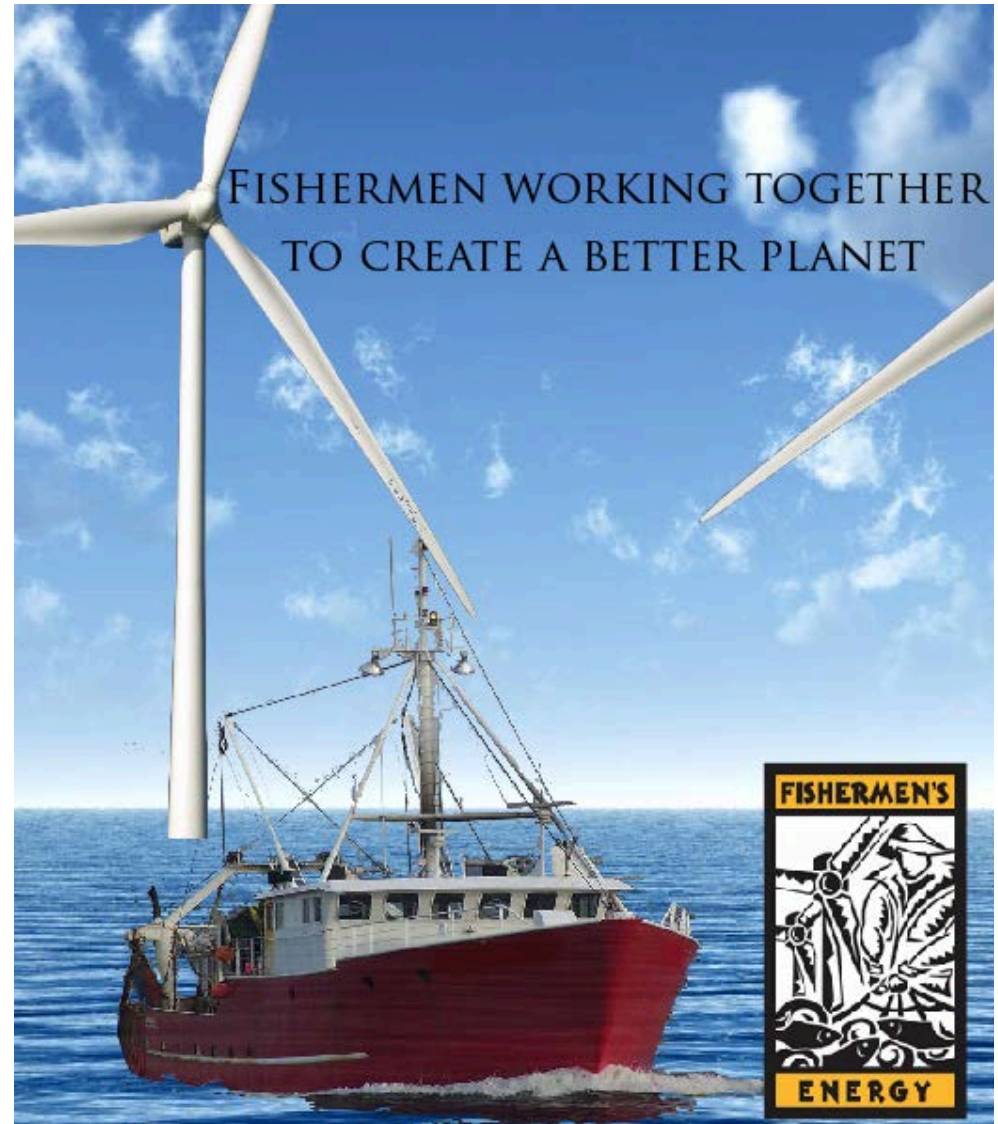
Source: MCN-Blauwdruk Final report, in prep.

## To conclude

- Growing need for sustainable activities
- Science can help with finding smart solutions
- Juridical conditions are important and..
- Good governance
  - Well prepared planning process
  - Need for interaction
  - Creating incentives



# Thank you!



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