

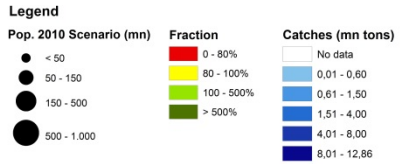
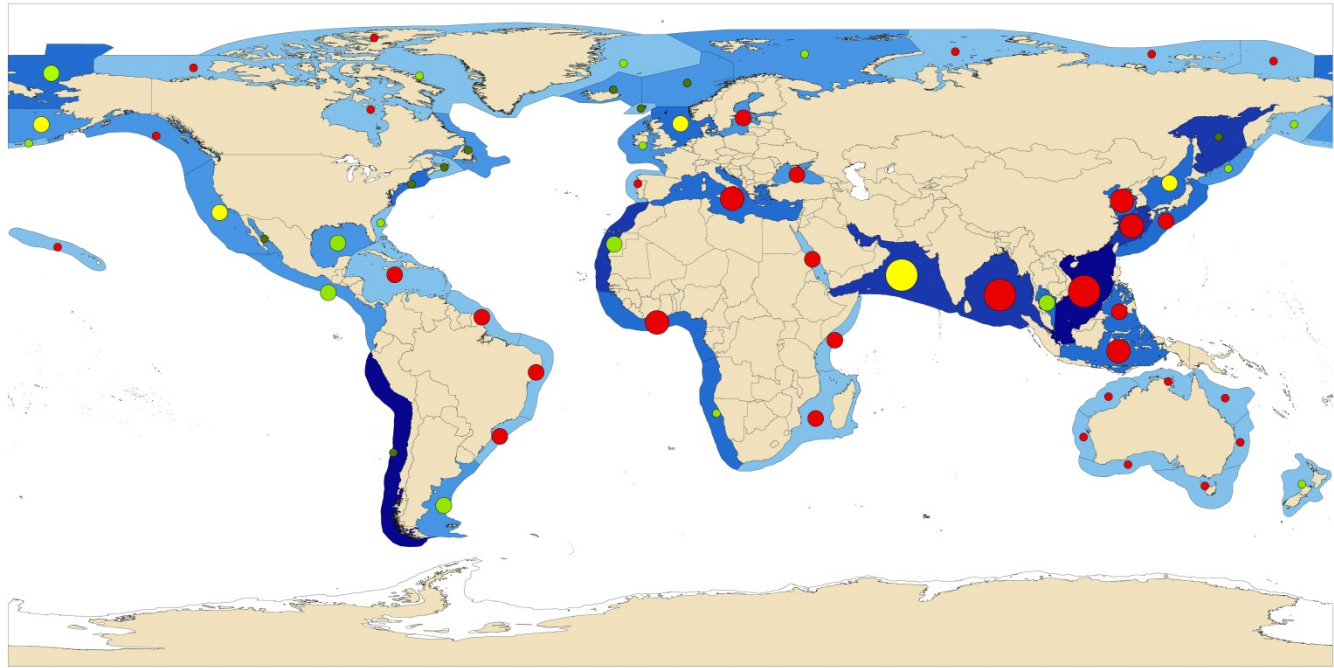
Global protein demand, marine fish production and trade flows in the world of 2050

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Motivation



To what extent are future fish resources able to satisfy future fish demand and consumption needs?

- investigate **global and regional catch potential** in 2050
- **demand projection with SSPs** and **alternative sources of protein**
- Fish production potential is assessed by **global predator-prey-model**
- **Trade flows** estimated with fish production and fish demand

Fish supply model

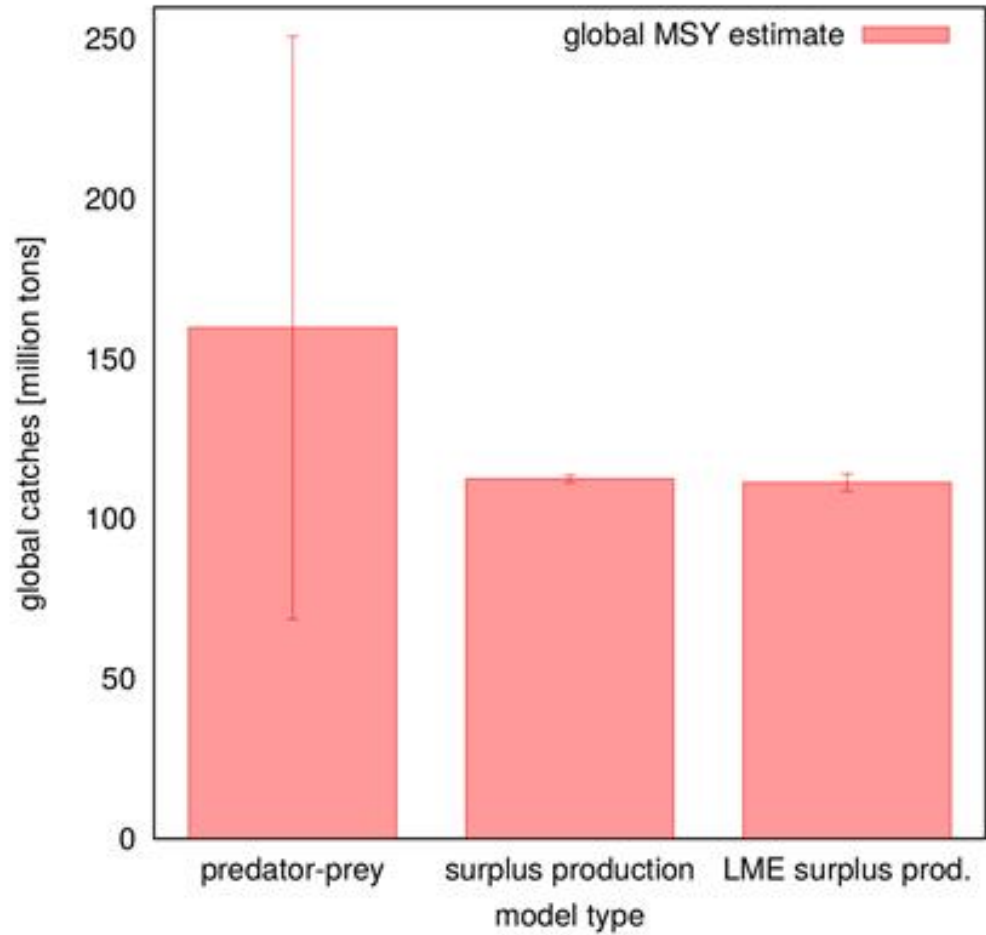
Data

- **Catches and landed values** from SeaAroundUs (SAU), 1950-2010, 64 LMEs

Three models

- Global Schaefer surplus production model
- LME-based Schaefer surplus production model
- **Global predator-prey model**
 - size groups: Fish > 90cm **predatory**, smaller and invertebrates **prey fish**

Fish supply model



Demand model

Data

- **Catches and landed values** from SeaAroundUs (SAU), 1950-2010, 64 LMEs
- **Trade flows, production quantities** for fish from FAO FishStatJ, 1976-2010
- **Trade flows, production quantities** for substitution goods from FAOStat

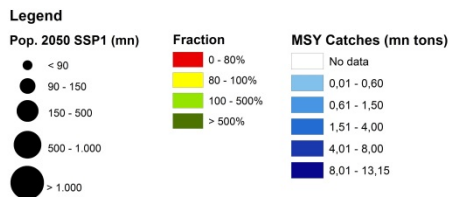
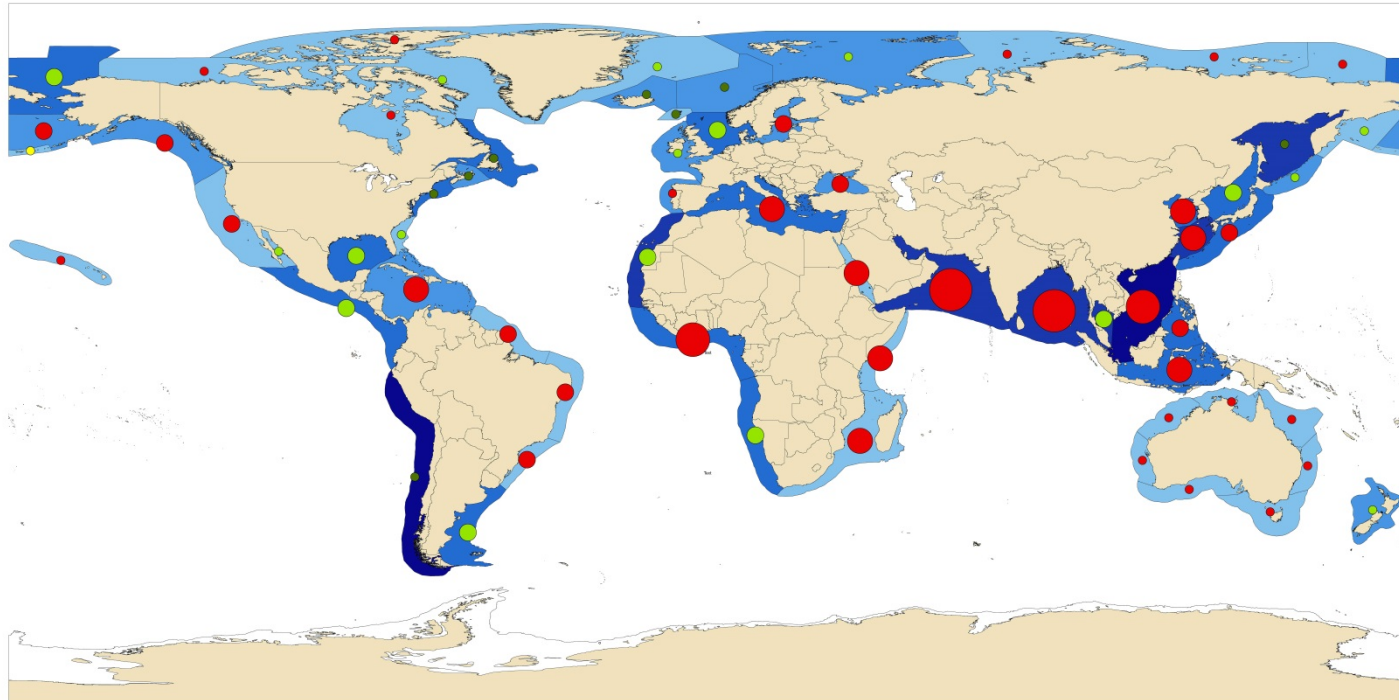
Global model

- Predatory fish, prey fish, substitution goods

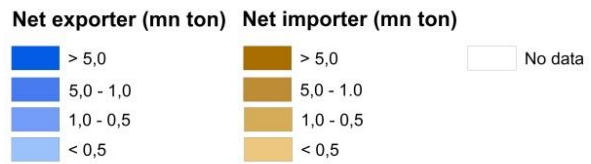
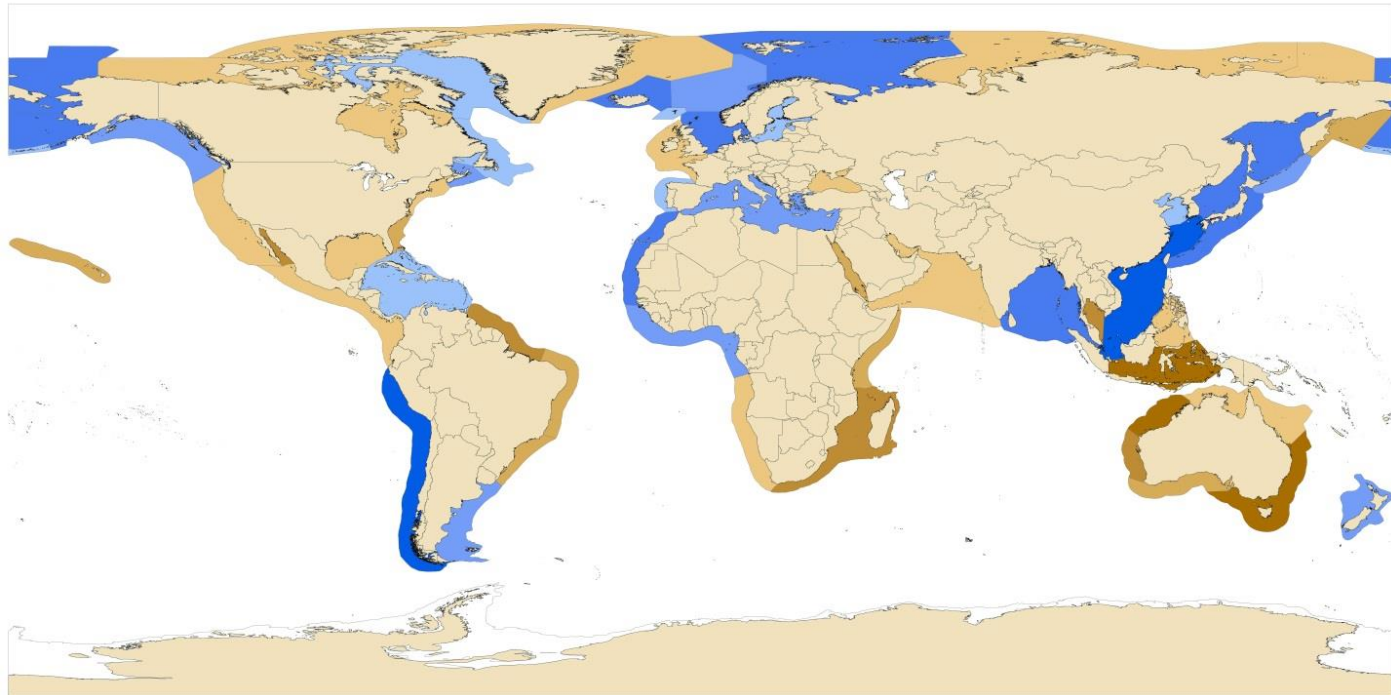
LME-based Model

- Domestically produced fish, imported fish, substitution goods

Supply and demand in 2050



Supply, demand and trade flows in 2050



Conclusion

- Global catches of 112 million tons possible (Schaefer model)
- Differentiation for ecological groups may increase catches to 160 million tons
- Marine capture fisheries can theoretically cover human demand in 2050 but Aquaculture will be required
- LMEs cannot provide enough catches for local consumption in some regions
- Some LMEs likely to be net exporters, some countries likely to be net importers of fish

Thank you for your attention!

Global fish production potential and management effectiveness

