

New developments in fisheries management – moving towards sustainable food systems?

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Overview

- Introduction - importance of fisheries/aquaculture production systems
- Maximum Sustainable Yield (MSY) as fisheries management objective
- EU Common fisheries policy and MSY
- Ecological Economics in fisheries production systems
- Discussion

Introduction – importance of fisheries/aquaculture production systems

- Fish is one of the main protein sources worldwide – in many countries the main source
- Aquaculture is the fastest growing segment of food production (will not go into more detail in this presentation)
- Fish is one of the main commodities of world trade
- Problem: Overfishing was a big problem in the past and is still occurring in many fisheries around the globe
- *Therefore, why do we see so few presentations/papers on exploitation of living resources from marine ecosystems in Ecological Economics?*

Introduction – importance of fisheries/aquaculture production systems

- Overfishing means that ‚society‘ forfeits possibilities for food supply in the short but especially in the long run
- Overfishing is, however, not the only impact of fishing on marine ecosystems (e.g. bycatch of non-target species or habitat destruction)
- Problem: marine ecosystems are more complex and unknown – we can’t measure a lot of things (e.g. ‘data poor stocks’, positive/negative external effects)

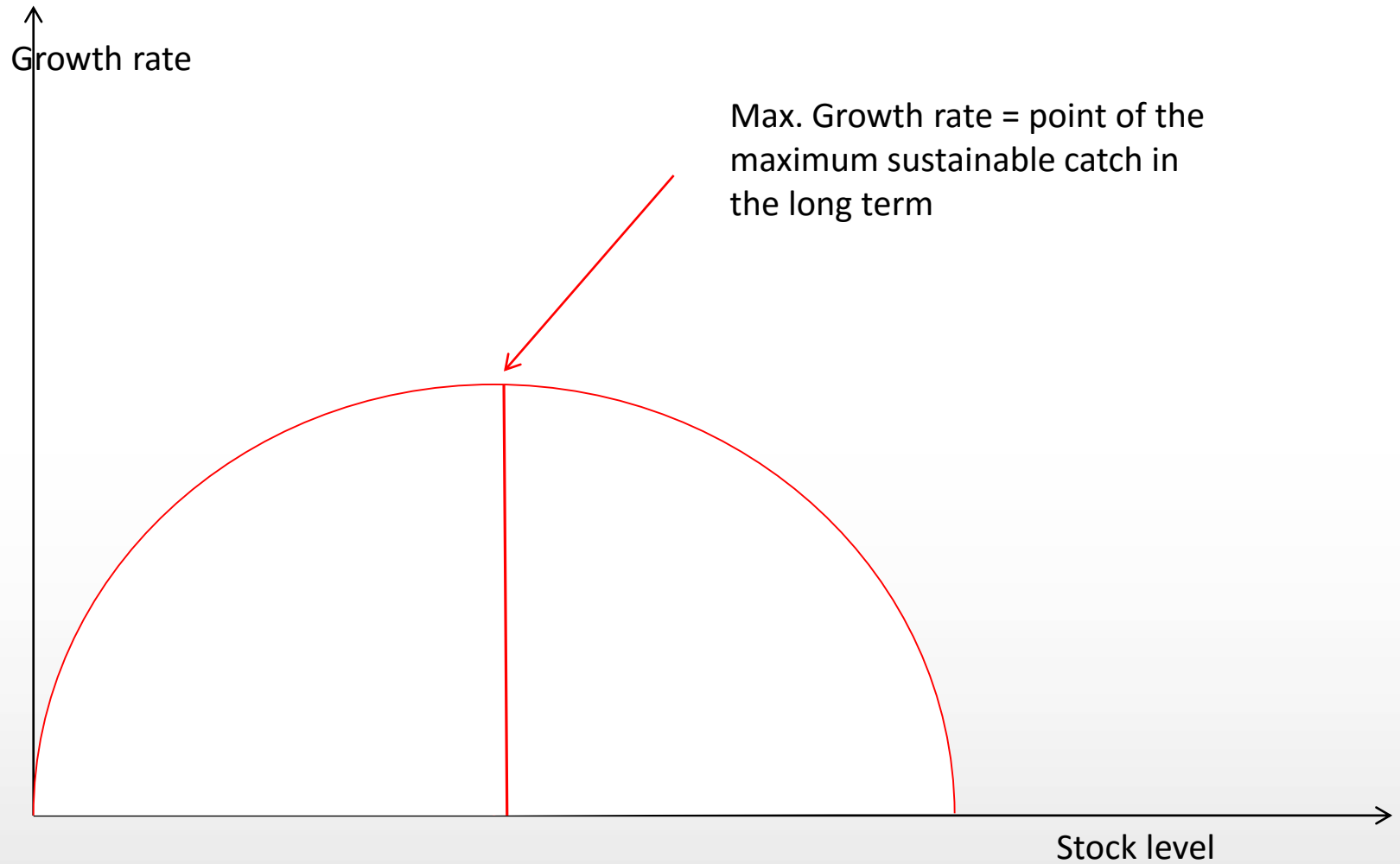
=> *We have to manage what we can’t measure!*

=> *Simple answers of neoclassical economics (efficient resource exploitation as only objective) don’t always work!*

MSY as fisheries management objective

- In this talk I can only highlight one approach which could be seen as contribution of ecological economics ideas to fisheries management
- Maximum Sustainable Yield is the worldwide management objective following a decision at the 2002 Johannesburg summit
- Long term maximum in tonnes

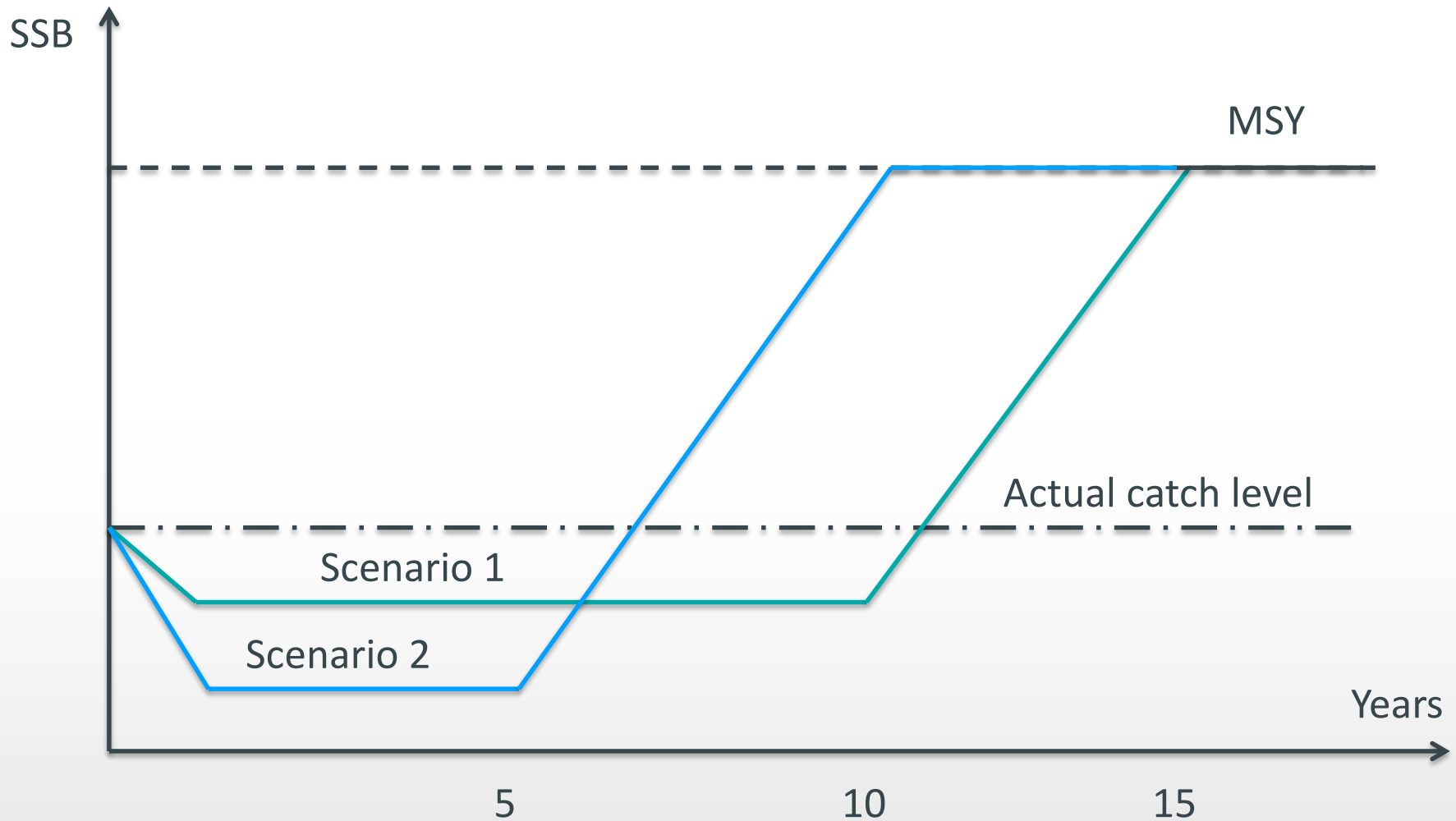
Maximum Sustainable Yield



MSY as fisheries management objective

- Maximum Sustainable Yield is the worldwide management objective following a decision at the 2002 Johannesburg summit
- Long term maximum in tonnes
- No economic considerations but higher longer term yields should also result in higher economic returns
- Problem: not all stocks can be utilised at the MSY level at the same time (due to interlinkages like predator-prey relationships)
- *However: this is a very good example for a target-based-approach: setting a target and then try to reach it with minimum costs (cost-effective-analysis)*

Example Fisheries management – compare rebuilding programs of stocks



EU Common fisheries policy and MSY

- Common fisheries policy with a long history of overfishing problems
- EU agreed also to MSY as management objective in 2002
- Objective is to achieve the fishing mortality rate (F_{msy}) which would allow MSY in the long run by 2020 (means, however, that MSY is not achieved at that time!)
- In 2009 6 out of 32 stocks for which F_{msy} was defined were fished at that level (19%)
- In 2014 31 of 59 assessed stocks are fished at MSY level (53%) - more stocks have a defined F_{msy} level
- One of the main reasons: introduction of an instrument to went from short term to long term gains ('long term sustainable exploitation')

Ecological Economics and MSY

- Fishing on MSY is adding security from a biological point of view – stock is well above the limit with risks of collapse, can buffer times of low recruitment, etc.
- Moving towards MSY with long term management plans meant in the EU to move away from short term thinking (‘next years resource availability’) to a longer term approach (‘long term sustainable yields’)
- For me this is an example for ideas of “Ecological Economics” working in a concrete resource use system => however, is not flagged like that!

Discussion and Conclusion

- Improvement in fisheries management in some areas but still a lot of problems with overfishing and negative impacts of human activities on marine ecosystems
- Moving in the right direction by decreasing current exploitation for increasing yields in the future (long term sustainable exploitation of a renewable resource)
- Aquaculture is a fast growing food production system with many ecological problems – questionable if the solution for increasing demand for animal protein
- *So, if the current development (improvement in management of fish stocks) is positive (and following EE ideas) - why were/are fisheries/aquaculture production systems so rarely analysed in Ecological Economics?*

A harbor filled with fishing boats, with a seagull flying in the sky. The boats are docked in a row, and the water is calm. The sky is overcast. The text "Thank you very much!" is overlaid in the center of the image.

Thank you very much!