

# **PROGRESS IN ADVANCING PRODUCTIVITY, FISH AND FISHERIES SCIENCE**

**Presented to: 18<sup>th</sup> LME Paris 2016**

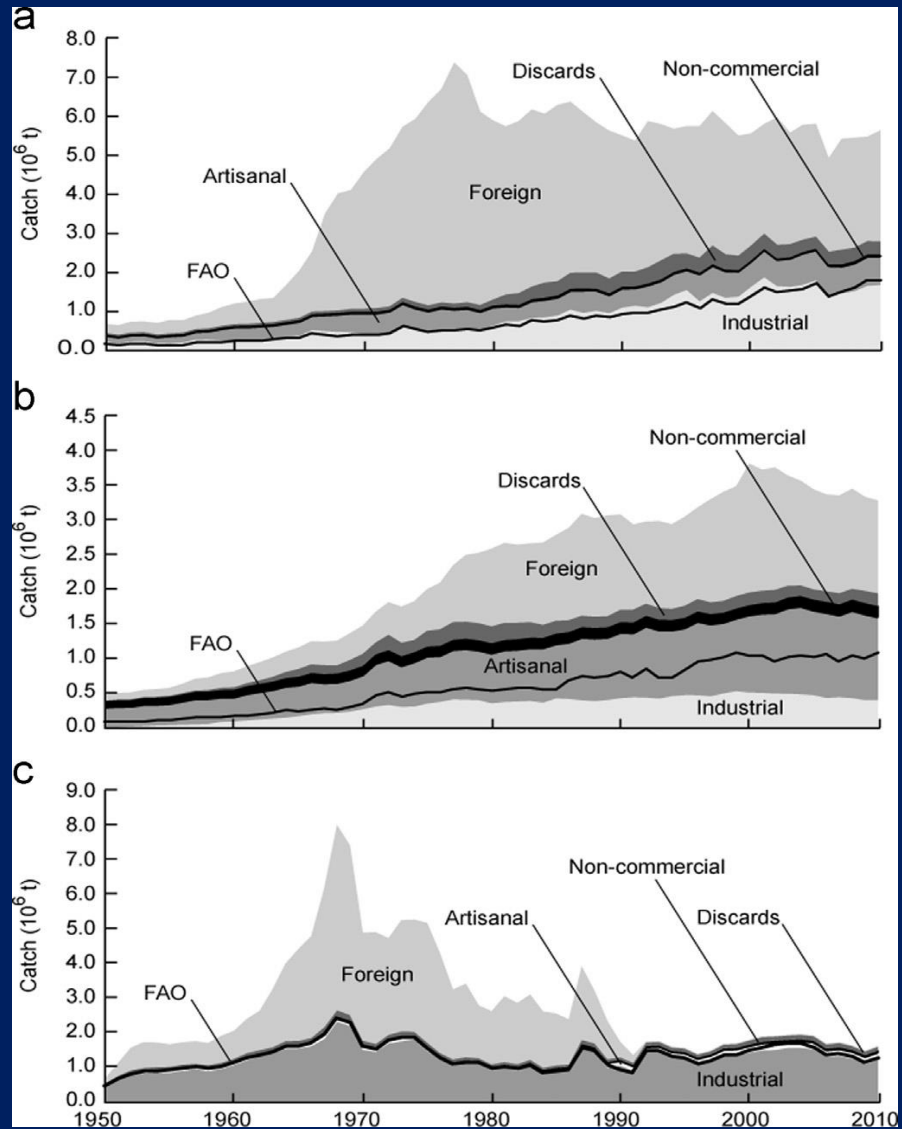
**Session 3**

**7 December 2016**

**Kenneth Sherman**

**NOAA - NMFS**

**D. Belhabib et al. Fisheries catch under-reporting in The Gambia, Liberia and Namibia and the three large marine ecosystems which they represent.**



**Under-reporting of catches is estimated as 200%-300% for West African countries bordering three LMEs:**

- Canary Current LME**
- Guinea Current LME**
- Benguela Current LME**

**M. Fogarty et al. Fishery production potential of large marine ecosystems: A prototype analysis.**

- **First assessment based on microbial, microplankton, and benthic components of production**
- **First global fisheries sustainability assessments based on trophic linkages including 3 new components**
  - (1) microbial loop**
  - (2) microplankton**
  - (3) benthos**

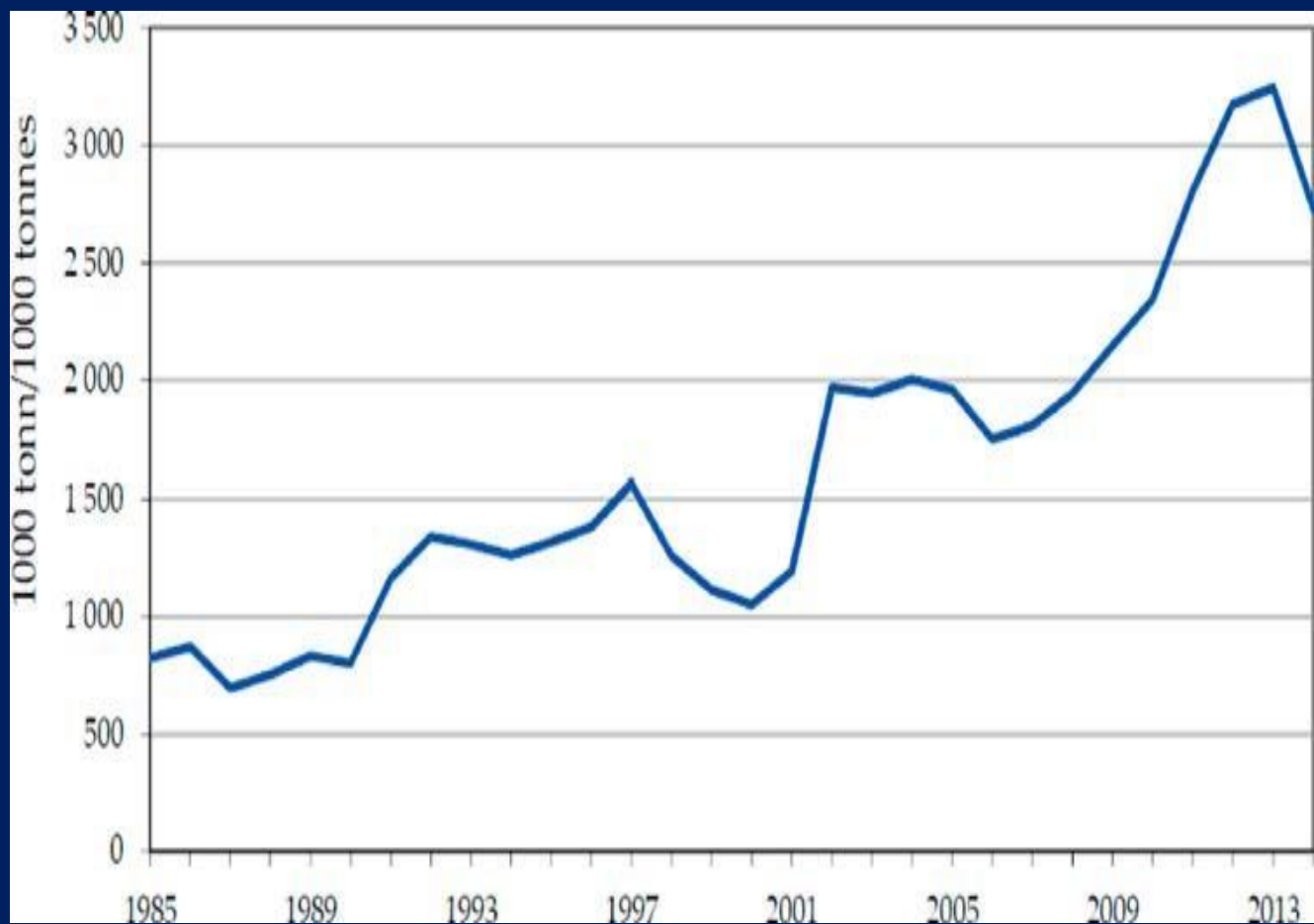
- **LME global fisheries annual sustainable production potential**

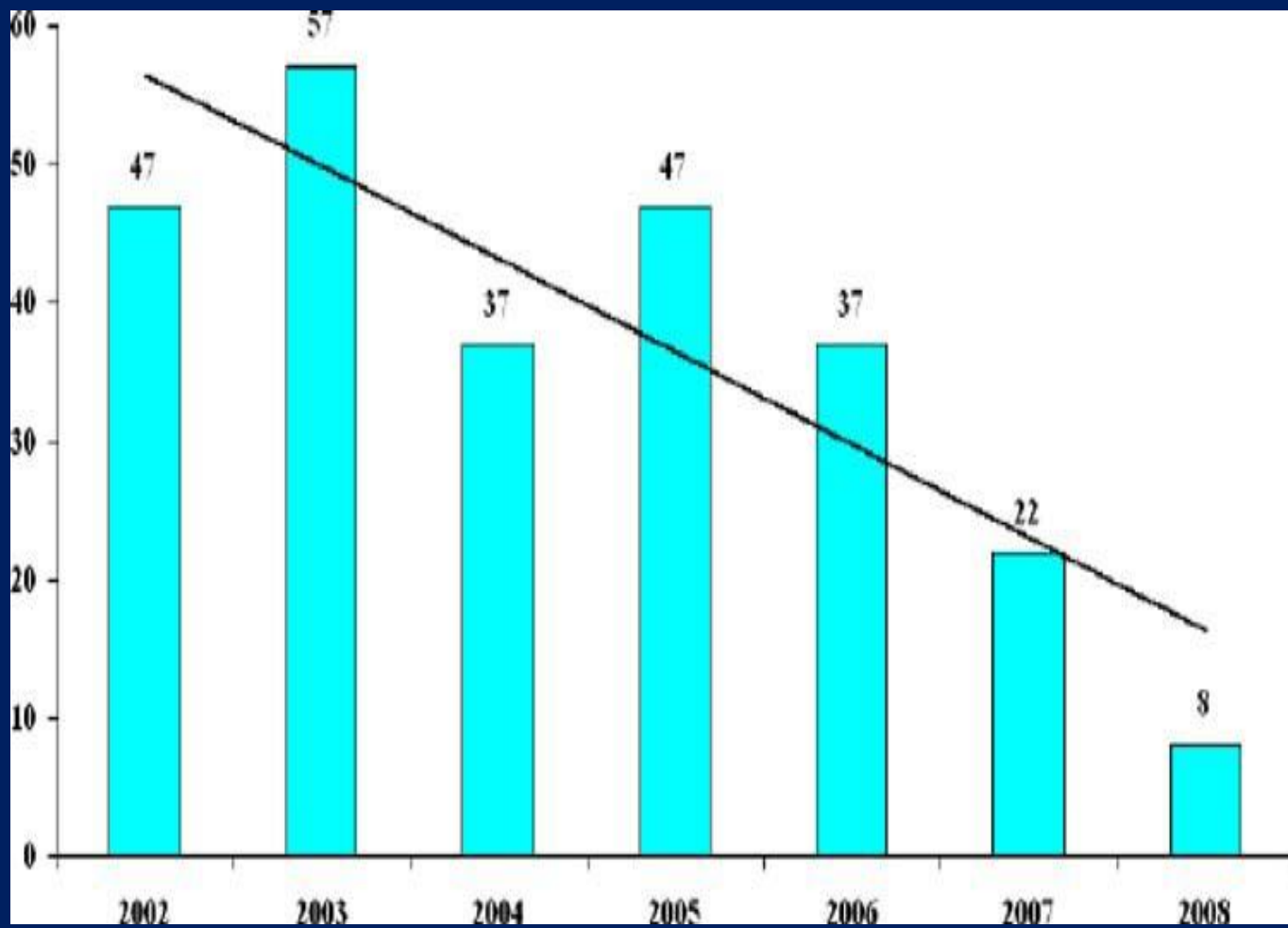
**140 to 180 mm tons of fisheries**

**30 to 50 mm tons of benthos**

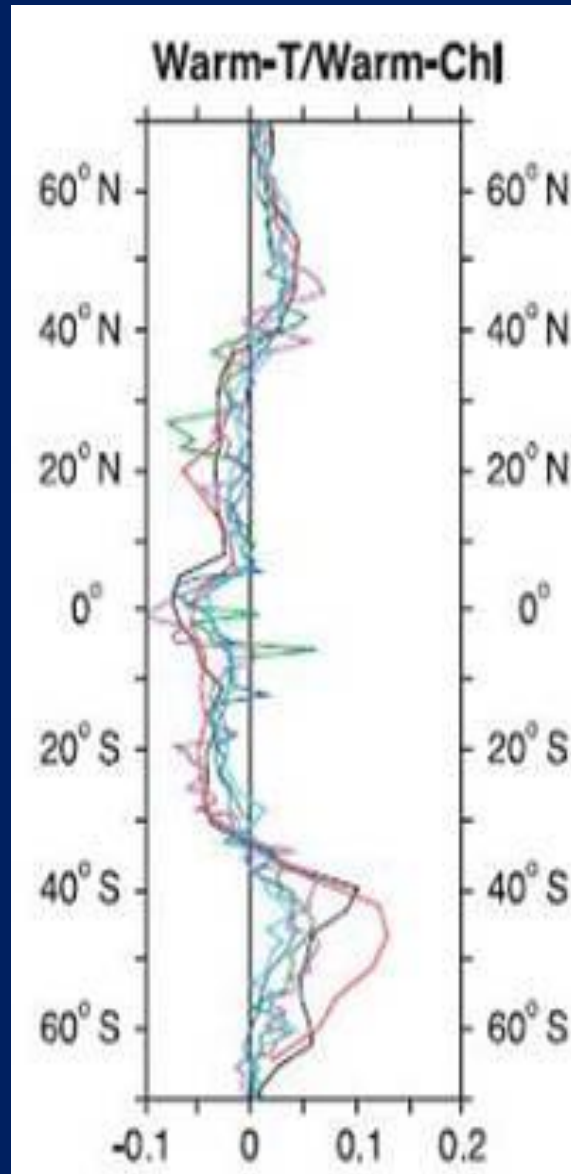
**L. Grønnevet. The joint Russian–  
Norwegian governance of the Barents  
Sea LME fisheries.**







**Estimate of  
2040 – 2060  
primary  
production  
change (Pg-C  
 $\text{deg}^{-1} \text{yr}^{-1}$ )**



**The global effects of climate warming on primary productivity are projected by latitude for the years 2040-2060. The primary productivity change (Pg C  $\text{deg}^{-1} \text{year}^{-1}$ ) and temperature increase, is shown above for six Atlantic Ocean Circulation models. Modified from Sarmiento et al. 2004.**