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Quality assurance framework – the concept of quality assurance applied to fisheries data and its operationalisation under the ICES scope.

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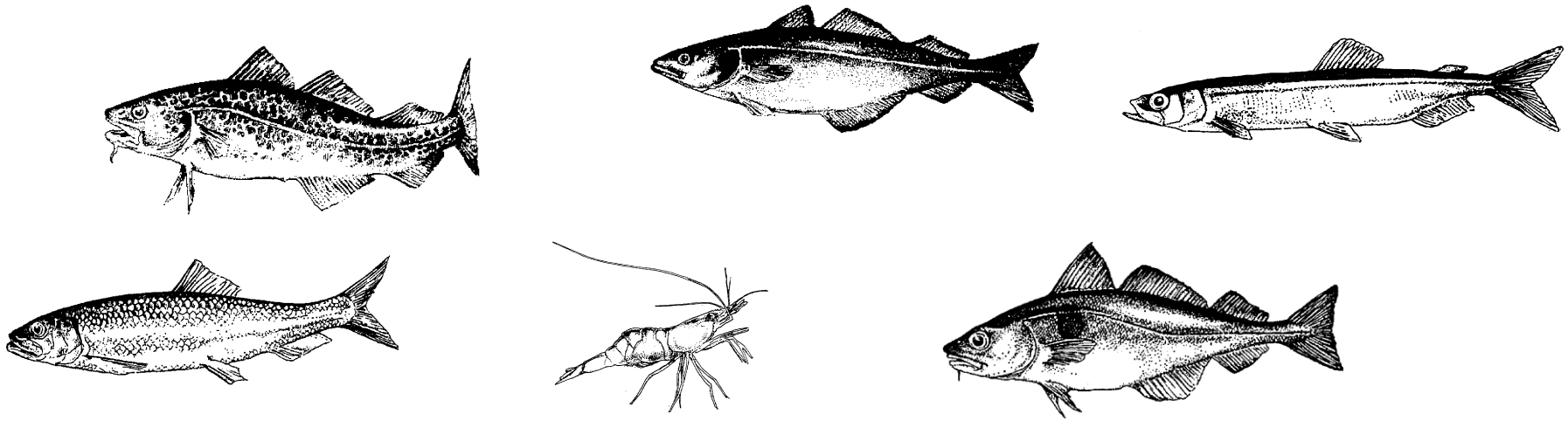

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International Council for the Exploration of the Sea
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Need for quality.
Why assessments should have a quality check.

- Quality assurance of input parameters for stock assessment is a major subject promoting the confidence of scientists and stakeholders in the advice provided by ICES.
- Issues about quality assurance are included in the current MoU between EC and ICES.
- ICES is responsible for quality control of the aggregated data used in assessments and shall decide which data are considered a useful basis for advice.
- The decision process must be transparent, based on scientific information and fully documented.
- Institutions and individuals involved on providing input data to ICES must be informed about the processing, usage and shortcomings of the data.

PGCCDBS role

- The ICES Planning Group on Commercial Catches, Discards and Biological Sampling (PGCCDBS) was tasked in 2006 to developed a conceptual framework for quality assurance (QAF) of input data for assessment.

Quality Assurance Framework (QAF)

- Objectives (PGCCDBS, 2008):

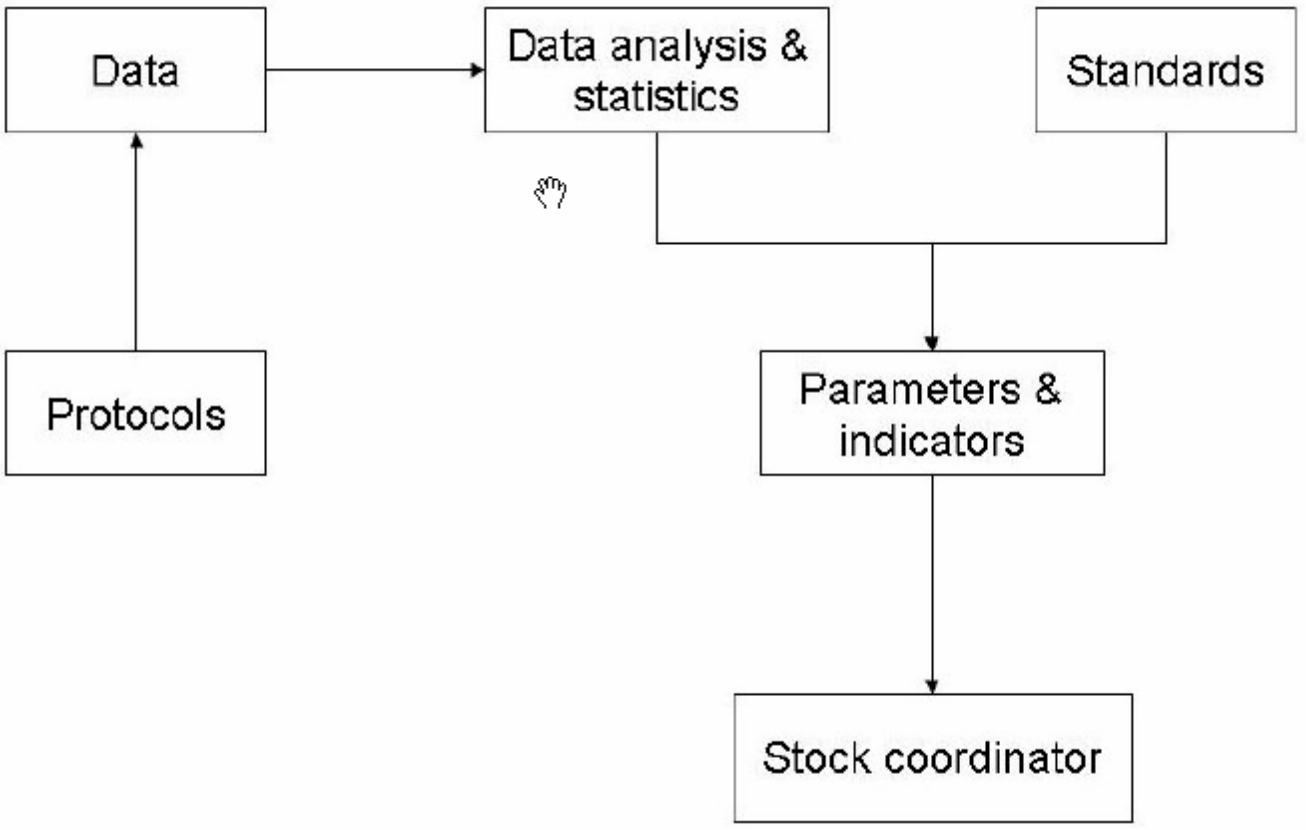
  i) to guarantee the quality of the raw data used for assessment,

  ii) to promote transparency of the process of compiling parameters at the stock level, and

  iii) to give feedback about the usage of the data available.

- The framework is based on the concept of “quality indicators” that constitute meta information of the relevant parameters.
- Indicators may be statistics, scorecards, or simple “flags” that contain information about the quality of each parameter and allow decisions regarding the usage of data to be made based on objective criteria.

Quality Assurance Framework (QAF)



WKACCU scorecard for bias detection

A - SPECIES IDENTIFICATION	NO BIAS COMPLIANCE WITH PROTOCOL	RISK OF BIAS	CONFIRMED BIAS
B – LANDINGS WEIGHT			
C – DISCARDS WEIGHT			
D - EFFORT			
E – LENGTH STRUCTURE			
F – AGE STRUCTURE			
G – MEAN WEIGHT			
H – SEX RATIO			
I – MATURITY STAGE			
FINAL INDICATOR	ALL GREEN	LIST OF POTENTIAL BIAS	LIST OF CONFIRMED BIAS

What has been done so far

- Development of standards and best practices
- A minimum sampling protocol for sampling lengths of fish landed for sale
- A minimum sampling protocol for age calibration
- Age reader contacts and Age readers forum (http://groupnet.ices.dk/AgeForum/default.aspx)
- Guidelines for e.g., otolith exchanges and maturity data collection and workshops
- WKACCU (2008) developed a practical framework for detecting potential sources of bias in fisheries data collection programs.
- Promotion of software development
  - *COST* - a Common "Open Source" Tool (COST) for assessing the accuracy of the biological data and parameters estimates collected for stock assessment purposes
  - *WebGR* - web services to support the organization and data analysis of calibration workshops, both for age and maturity information,

What has to be done

- Minimize or eliminate sources of bias by developing and following sound field data collection procedures (securing temporal and spatial coverage) and analytical methods
- The score-card developed by the WKACCU should be tested at benchmark workshops
- In general, smaller samples from more vessels than many (and large) samples from a few vessels. The effective sample size should be reported since it is much more informative than the total number of fish sampled
- WKPRECISE – establish methods to evaluate and estimate the precision of fisheries data used for assessment
- Integrate bias and precision into expert groups reporting so that the message can be easily understood by stakeholders
- Integrate precision estimates of input data into stock assessment routines and predictions
- Improvement of InterCatch needs to be addressed with urgency
- Assessment working group contact persons – these are key persons to report stock data problems in assessments related to data collection

Conclusions

- The distinct tools, workshops, protocols, indicators, etc work together in a continuous international process to improve and secure quality – that's the concept

- Strategic quality planning is based on the development of a proactive quality assurance framework that identifies all activities aimed at preventing sampling errors.
- Quality control procedures are a part of the framework and are designed to detect errors in the samples already obtained.
- The quality of the sampling, the data, and the analyses conducted prior to the assessment should be assessed at both the sampling program level, at the national and the stock level.

References

ICES. 2008. Report of the Planning Group on Commercial Catches, Discards and Biological Sampling (PGCCDBS), 3-7 March 2008, Cyprus. ICES CM 2008/ACOM:29. 91 pp.

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