NPFC-2022-TWG CMSA06-WP01 (Rev. 1)

**TWG CMSA Work Plan, 2022-2026**

At TWG CMSA05 and 06 meetings, Members updated the TWG CMSA work plan up to 2026. The Work Plan will be submitted to the SC07 meeting for review.

**FIVE-YEAR WORK PLAN**

**Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA)**

Priority list:

1. Data preparation and review of biological information
2. Develop an operating model
3. Test stock assessment models (VPA, ASAP, KAFKA, SAM, state-space production model)
4. Conduct stock assessment of chub mackerel
5. Set biological reference points
6. Provide scientific advice on the management of chub mackerel stock to the Commission
7. Regularly update and refine inputs

| **ITEM** | **2022 spring** | **2022 autumn** | **2023 1st half** | **2023 2nd half** | **2024** | **2025** | **2026** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regular update of inputs** |  |  |  |  |  |  |  |
| Research survey indices | Review the data used for the stock assessment | Review (Finalize) the data used for the stock assessment  | Finalize the data used for the stock assessment | Update | Update | Update | Update |
| CPUE indices | Review standardized CPUE indices for stock assessment | Review standardized CPUE indices for stock assessment  | Finalized CPUE standardization | Update | Update | Update | Update |
| Catch data/catch composition | Review the data used for the stock assessment | Review the data used for the stock assessment  | * Finalize the data used for the stock assessment
* Submit historical annual CAA data
 | Update | Update | Update | Update |
| Biological parameters (maturity, M, weight) | * Review biological parameters
* Determine the range of assumption for preliminary stock assessment
 | Determine the range of assumption for preliminary stock assessment | Finalize assumptions for the stock assessment | Review biological parameters | Review biological parameters | Review biological parameters | Review biological parameters |
| Quarterly fishery data (CAA, WAA, Maturity-at-age) |  |  | * Summit quarterly fishery data
* Share and standardize age-counting rule
 |  |  |  |  |
| **Operating model (OM)** |  |  |  |  |  |  |  |
| Development of operating model |  |  |  |  |  |  |  |
| Testing stock assessment models | * Consultant drafts a report about the performance of the candidate stock assessment models (intersessional)
* Discuss how to rank the stock assessment model candidates based on the performance measures (intersessional)
 | * Determine how to rank the stock assessment model candidates based on the performance measures
* Choose the best SA model(s)
 | * Determine performance measures/metrics to choose the best SA model(s)
* Determine how to rank the stock assessment model candidates based on the performance measures
* Choose the best SA model(s)
 |  |  |  |  |
| **Stock assessment** |  |  |  |  |  |  |  |
| Benchmark stock assessment | Initiate discussion about specifications of future projection methods |  | * Determine the method for future projection
* Conduct preliminary stock assessment with the selected model (intersessionally after TWG CMSA07)
 | Complete stock assessment with the selected SA model(s) | Update SA model | Update SA model |  |
| Improvement and further investigation of the selected model |  |  |  |  | Review and improve, if needed, the SA model | Review and improve, if needed, the SA model | Review and improve, if needed, the SA model |
| **Toward development of reference points** |  |  |  |  |  |  |  |
| Set biological reference points (limit and target) | * Review RPs report
* List candidate reference points
 |  | * Review RPs report
* Develop a short list of reference points
* Compare robustness of reference points
 | Choose reference points | Review reference points |  |  |

Flowchart for the development of operating models and testing stock assessment models

