NPFC-2020-TWG CMSA03-WP01 (Rev. 1)

**TWG CMSA Work Plan for 2020-2025**

The five-year rolling 2020-2025 Work Plan of the TWG CMSA has been drafted by the TWG CMSA Chair, Dr. Oleg Katugin, the lead of the SWG OM, Dr. Shota Nishijima, and the Secretariat, for review at the TWG CMSA03 meeting in November 2020. The Work Plan outlines key tasks of the TWG CMSA for stock assessment and management of chub mackerel. It will be reviewed and extended for one more year on the annual basis.

Priority list

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

| **ITEM** | **2020****(TWG CMSA03)** | **2021 spring** | **2021-2022 winter**  | **2022** | **2023** | **2024** | **2025** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regular update of inputs** |  |  |  |  |  |  |  |
| Research survey indices | Review survey indices to be used for stock assessment  | * Standardize survey data (intersessional)
* Review the data used for the stock assessment
* Finalize the data used for the stock assessment
 | Update survey indices, if possible | Update | Update | Update | Update |
| CPUE indices | Review CPUE indices to be used for stock assessment  | * Standardize CPUE (intersessional)
* Review the data used for the stock assessment
* Finalize the data used for the stock assessment
 | Update CPUE indices, if possible | Update | Update | Update | Update |
| Catch data/catch composition | Compile and review data | * Review the data used for the stock assessment
* Finalize the data used for the stock assessment
 | Update catch composition data, if possible | Update and revise, if needed | Update | Update | Update |
| Biological parameters (maturity, M, weight) | Review the three reference cases for natural mortality | * Review biological parameters
* Finalize assumptions for the stock assessment
 | Review biological parameters | Review biological parameters | Review biological parameters | Review biological parameters | Review biological parameters |
| **Operating model (OM)\*** |  |  |  |  |  |  |  |
| Development of operating model | Describe and review all data for OM/ Set OM scenarios |  | Generate pseudo data to be fitted to the stock assessment models (intersessional) |  |  |  |  |
| Testing stock assessment models | Condition the OM | Condition the OM | * Compare stock assessment model candidates
* Choose the best SA model(s)
 |  |  |  |  |
| **Stock assessment** |  |  |  |  |  |  |  |
| Benchmark stock assessment |  |  | Conduct preliminary stock assessment  | Complete stock assessment with the selected SA model(s) and provide recommendations to SC  | Update benchmark stock assessment | Update benchmark stock assessment | Update benchmark stock assessment |
| 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
 | * Compare robustness of reference points
* Choose reference points
 |  |  |  |  |
| **Toward development of MSE**  |  |  |  |  |  |  |  |
| Development of management objectives |  |  | Liaise with the Commission and TCC to set management objectives | Finalize management objectives  |  |  |  |
| Definition of performance measures |  |  |  | List performance measures |  |  |  |
| Construction of OMs | Discuss MSE approaches for chub mackerel | Continue | Discuss MSE approaches and frameworks for chub mackerel  | Discuss ranges of uncertainties |  |  |  |
| Development of candidate MPs |  |  |  |  |  |  |  |
| Simulation performance tests |  |  |  |  |  |  |  |
| Comparison of MPs and finalize advice  |  |  |  |  |  |  |  |

\* For the detailed plan and timelines, see Flowchart for the development of operating model and testing stock assessment models (Annex G of the TWG CMSA03 report)