NPFC-2024-TWG CMSA09-WP08 (Rev. 2)

**TWG CMSA Work Plan, 2024-2028**

Members reviewed and updated the TWG CMSA work plan up to 2028. The Work Plan will be submitted to the SC09 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. Conduct stock assessment of chub mackerel
3. Set biological reference points
4. Provide scientific advice on the management of chub mackerel stock to the Commission
5. Explore the influence of climate changes on chub mackerel stock
6. Regularly update and refine inputs

| **ITEM** | **2024 summer** | **2025 winter** | **2025 summer** | **2026** | **2027** | **2028** | **Progress** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regular update of inputs** |  |  |  |  |  |  |  |
| Research survey indices | Finalize data used for the stock assessment | Update |  | Update | Update | Update | Research survey indices have been finalized and used for stock assessment. |
| CPUE indices | Finalized CPUE standardization | Update |  | Update | Update | Update | CPUE standardization has been finalized and used for stock assessment. |
| Catch data/catch composition | Finalize data used for the stock assessment | Update CAA data |  | Update | Update | Update | Catch data and catch composition have been finalized and used for stock assessment. |
| Biological parameters (maturity, M, weight) | Finalize assumptions for the stock assessment | * Review biological parameters * Discuss setting of natural mortality at age for future base cases * Explore mechanisms of temporal change of maturity at age and weight at age used for calculation of reference points and future projections * Bridge the gaps in maturity at age data among Members |  | Review biological parameters | Review biological parameters | Review biological parameters | Assumptions on biological parameters have been finalized and used for stock assessment. |
| Quarterly fishery data (CAA, WAA, Maturity-at-age) | * Submit quarterly fishery data * Share and standardize age-counting rule | * Update quarterly fishery data * Share and standardize age-counting rule |  | Update | Update | Update | Quarterly fishery data has been submitted. |
| **Stock assessment** |  |  |  |  |  |  |  |
| Benchmark stock assessment | Complete stock assessment with the selected SA model |  | Update SA | Update SA | Update SA | Update SA | Benchmark stock assessment has been conducted. |
| 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 | Review and improve, if needed, the SA model | Review and improve, if needed, the SA model |  |
| New stock assessment models |  |  | Explore new stock assessment models, if available | Explore new stock assessment models, if available | Explore new stock assessment models, if available | Explore new stock assessment models, if available |  |
| **Reference points, HCR, future projections and MSE** |  |  |  |  |  |  |  |
| Set biological reference points (limit and target) | Review and calculate reference points | Discuss how to calculate biological reference points in consideration of nature of temporal changes in biological parameters | Review and calculate reference points | Review and calculate reference points | Review and calculate reference points | Review and calculate reference points | Commonly used reference points are reviewed, and calculation with the results of SA have been completed |
| Develop future projections | Provide preliminary results of future projection, if possible | * Initiate discussion of harvest control rule (HCR) to determined future catch, according to traits of CM biological parameters * Explore more sophisticated method for conducting future projections with more uncertainties | Candidates of HCR are tested in future projections | Selection of HCR | Improvement | Improvement | Preliminary results of future projection have been provided. |
| Develop Management Strategy Evaluation (MSE) |  | Start discussion | Development | Trial to be used for selection of HCR | Improvement | Improvement |  |