**Mackerels**

Stock Assessment in 2018

Proposal of new reference points (Scientific meeting April 2019)
Calculation on the probability of achieving the goal in 2030
based on controlling F in HCR since 2020

Set TAC for 2019

Improvement on stock assessment method

Explanation of stock assessment in the 1st Stakeholder meeting

Demand of additional analysis from the 1st Stakeholder meeting

Stock assessment in 2019 (Meeting held in November 2019)

Future projection based on the renewed stock assessment

2nd Stakeholder meeting
Explanation on the stock assessment

2nd Stakeholder meeting
Answer to the additional analysis

Convert calendar year to fishing year

Set TAC for 2020
(Pacific stock : β=0.9)

Set TAC for 2020
(Tsuchima & E. China Sea stock : β=0.95)

Peer-Review

Management based on TAC (with new fishing law in advance)

**Sardine and Jack mackerels**

Stock Assessment in 2019

Proposal of new reference points (Scientific meeting March 2020)
Calculation on the probability of achieving the goal in 2031
based on controlling F in HCR since 2021

Set TAC for 2020

Improvement on stock assessment method

Explanation of stock assessment in the 1st Stakeholder meeting

Demand of additional analysis from the 1st Stakeholder meeting

Stock assessment in 2020 (Meeting held in August 2020)

Future projection based on the renewed stock assessment

2nd Stakeholder meeting
Explanation on the stock assessment

2nd Stakeholder meeting
Answer to the additional analysis

Jack: Set TAC for 2021
(for two populations)

Sardine: Set TAC for 2021
Fishery Agency proposes fishing scenario based on the additional analysis

Peer-Review

Management based on TAC (with new fishing)