

Possible Management Measures for Purse Seine Fisheries in ASEAN Region

MATSUISHI TAKASHI FRITZ

HOKKAIDO UNIVERSITY

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Framework of the fisheries management for purse seine

- ▶ Purse seine fishery is highly multi-species fisheries.
- ▶ Sometimes species composition is not reliable.
- ▶ Fisher can not select species = Non selective fisheries.

- ▶ Consider pelagic fish group as a stock.
- ▶ Calculate MSY or ABC for fisheries not species.
- ▶ Implement fisheries management to the fisheries.
- ▶ Special care for specific species if necessary.

Data collection

- ▶ Improved.
- ▶ Some countries still has difficulties
- ▶ For some countries, data cleaning may be needed
- ▶ Catch statistics better than Effort.
- ▶ Effort unit can be selected from various units
- ▶ Sometimes standardization of the CPUE is necessary

Calculation

- ▶ ASPIC can be useful when CPUE can available.
- ▶ Be sure to use cleaned data
- ▶ Be careful to choose model Fox / Shaefer
 - ▶ Fox can made overestimate for optimal effort
- ▶ ABC rule type 2 can be used for data poor situation.
- ▶ Estimation can be conservative / safe

Fisheries Management Measure

- ▶ Input control

- ▶ Number of Vessel
- ▶ Operation days
- ▶ Number of Halts

- ▶ Output control

- ▶ Catch Limit (TAC)

- ▶ Other control

- ▶ Zooning
- ▶ Seasonal / Areal closure

Combination of Input and Output Control

- ▶ Output control is sometimes difficult to implement because it needs real-time catch statistics.
- ▶ Input control can be applied if catch statistics has time lag.
- ▶ Adjust fishing effort to F_{MSY} or $F_{cur} TAC / C_{cur}$
- ▶ Monitor the catch and adjust fishing effort to achieve TAC

Fisheries Management Plan

- ▶ To implement regional fisheries management of purse seine fisheries, FMP will be important for explain to the decision maker and stakeholders
- ▶ TAC allocation rule should be decided and made consensus among countries.

Monitoring Control and Surveillance (MCS)

- ▶ FMP have to include measures on MCS
- ▶ Port state measures can be used for MCS
- ▶ Similar challenges to IUU fisheries

Regular meeting on the Purse seine Fisheries Management

- ▶ Several Meetings
 - ▶ Data collection
 - ▶ Calculation
 - ▶ TAC decision
 - ▶ Allocation
 - ▶ MCS
- ▶ Fisher (group) have to commit all procedures

Time Schedule --- example

- ▶ Jan-Dec 2019 : Data collection
- ▶ Jan-May 2020 : Data check and cleaning
- ▶ Jun-Aug 2020 : Calculation to ABC2021
- ▶ Sep-Oct 2020 : Decision on TAC2021
- ▶ Nov-Dec 2020: Allocation to the nations
- ▶ Jan-Dec 2021: Implementation

Special species

- ▶ Sharks and Rays
- ▶ Neritic Tuna
- ▶ Depleted stock
 - ▶ *Rastliger brachysoma*
ปลาหู in GOT
- ▶ Stock Identification
- ▶ Biological Data
- ▶ Migration
- ▶ Single species stock assessment
 - ▶ Age based method
- ▶ Single species fishery management for all gears targeting