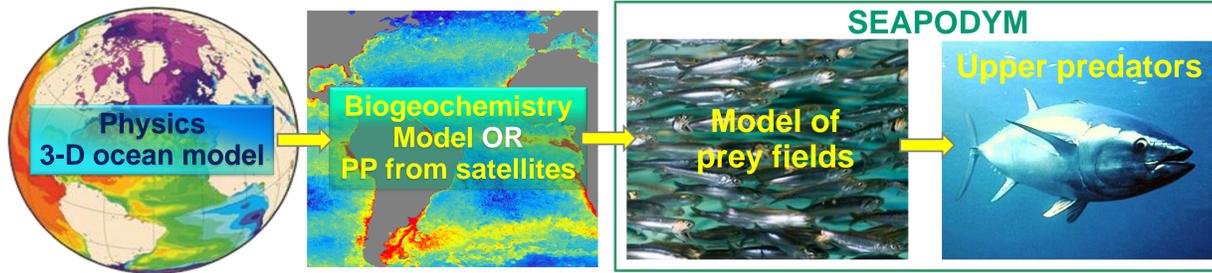


Operational management of tuna fisheries in Indonesia



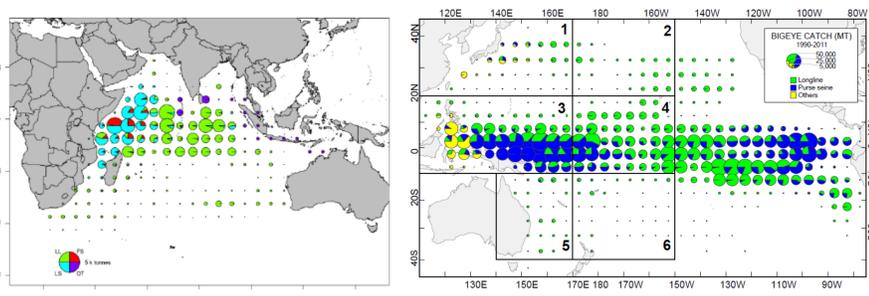
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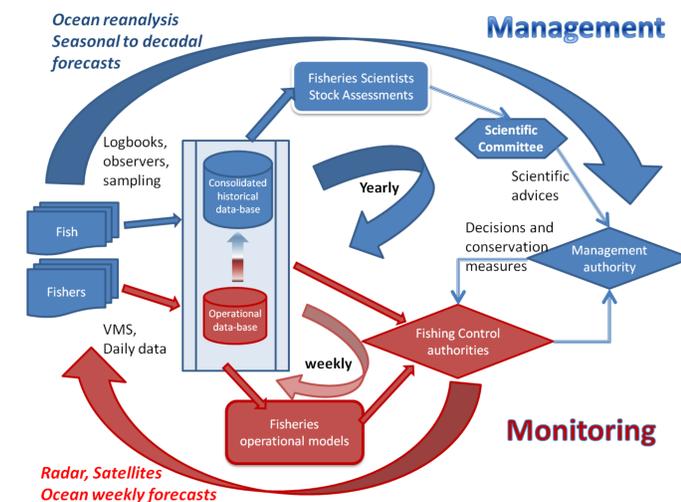
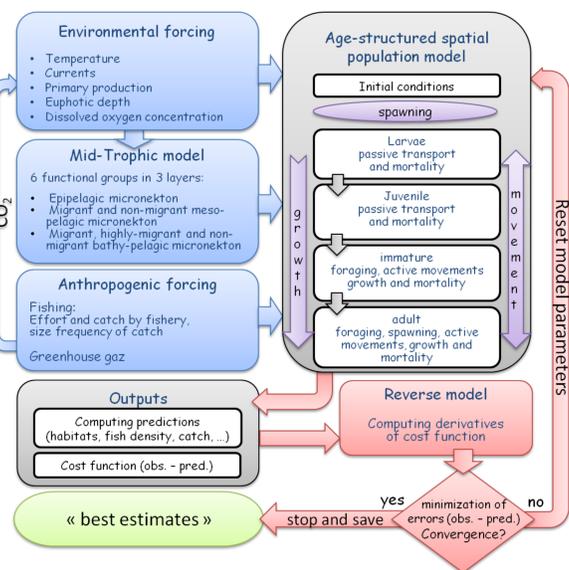
Despite that tuna fisheries are a major economical sector in Indonesia (annual catch > 600,000 t), very few is known about the dynamics and real abundance of tuna in the region.



Total catch of bigeye tuna by ocean and by gear.
Left: Distribution in 2010 based on IOTC database (green= longline; red = purse seine on free school; blue = purse seine on logs; purple = other gears). Right: 1990-2011 tuna catch in the WCPO (Williams and Terawasi, 2012) by gear (green = longline; blue = purse seine; yellow = other gears).

At basin scale, tuna stocks are managed by international tuna commissions: the Indian Ocean Tuna Commission in the Indian Ocean, and the Western Central Pacific Fisheries Commission and the Inter-American Tropical Tuna Commission in the Pacific Ocean.

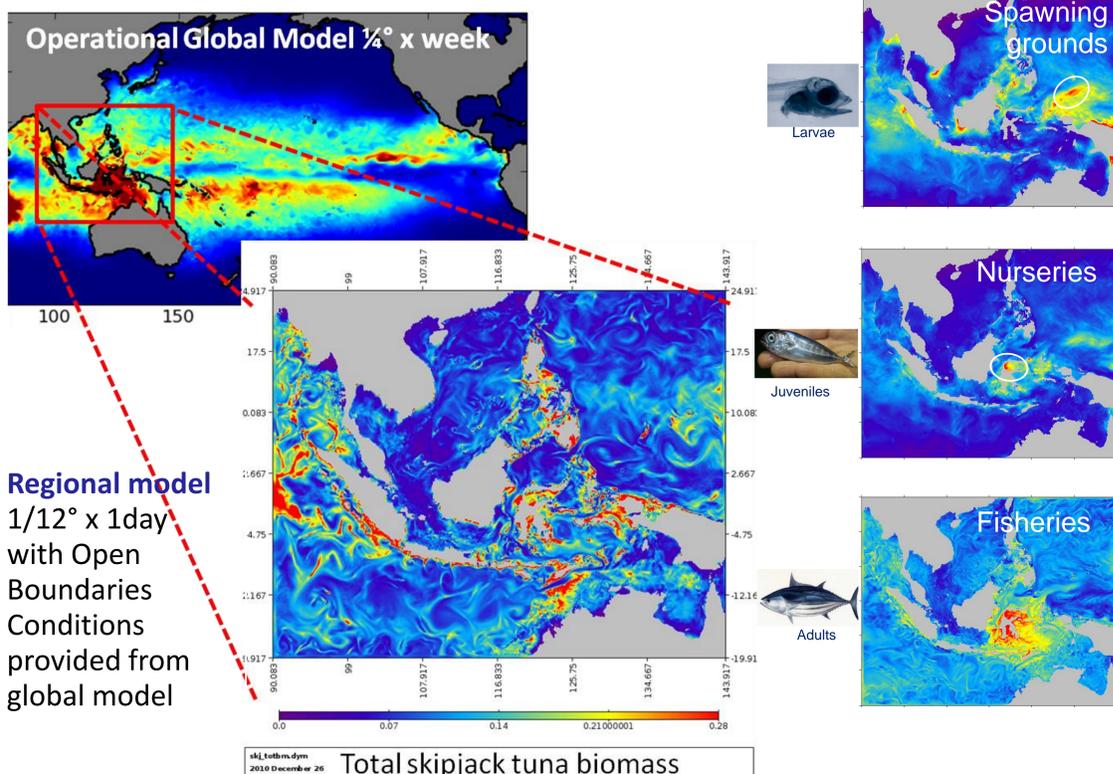
With the INDESO project the Indonesian government is implementing a chain of operational regional models from physics to fish at a resolution of 1/12°x day, with the objective of monitoring the tuna stocks and fisheries.



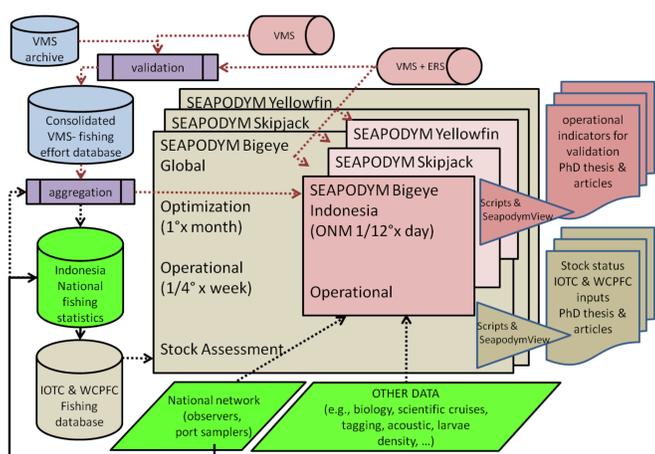
A modern view for the management and monitoring of marine resources

Outputs of the Indonesian regional ocean model and satellite-derived primary production and euphotic depth are used to drive the Spatial Ecosystem And Population Dynamics Model (SEAPODYM) for three tuna species (skipjack, yellowfin and bigeye) and their fisheries, optimized with fishing data at basin (and stock) scale.

SEAPODYM: an integrated system for operational modeling of tuna stock



Regional model 1/12° x 1day with Open Boundaries Conditions provided from global model



Workflow of the tuna fish stock application

Once a week, 10-day forecast of fish density at different life stages will assist the monitoring and sustainable management of 3 major tuna species