



**COUNTRY REPORT
OF PURSE SEINE FISHERIES IN
SABAH
18 – 19 SEPTEMBER, 2018**

KUALA LUMPUR, MALAYSIA

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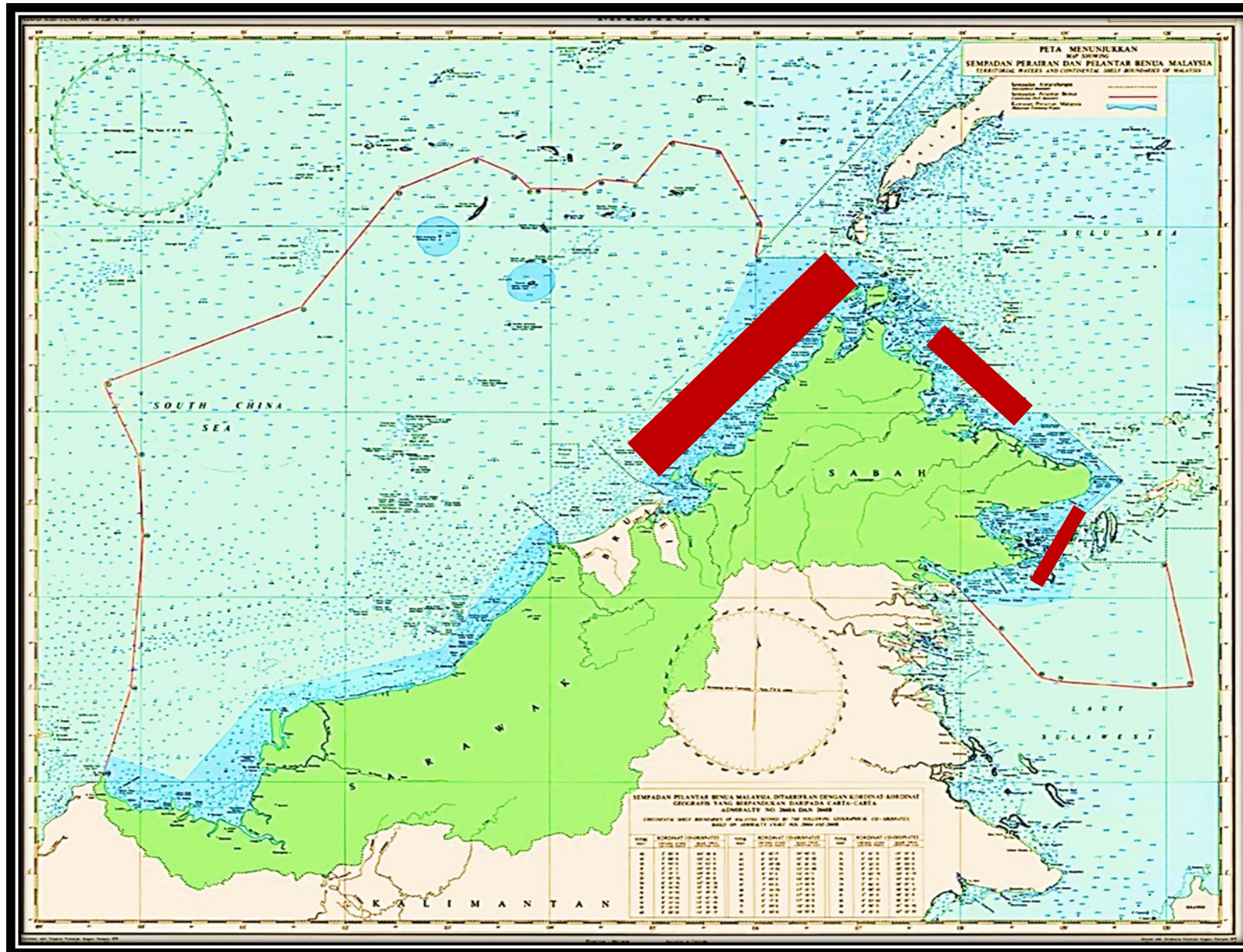
OVERVIEW

- **Demand for fish in Malaysia is always rising yearly, and it is expected to increase from 1.3 million mt in 2010 to 1.9 million mt in year 2020**
- **Fishing industry contributed close to RM 10.22 billion in 2015 and is envisaged to grow annually by 4.9% contributing close to RM 12.96 billion to the Malaysian economy by 2020 (*of course it is still far to pay the debt, we'll try...*)**
- **Fisheries industry is also an important source of protein for the nation**

OVERVIEW

- Purse seine fisheries : is **Commercial gears** in Sabah
- Fishing areas: **all fishing zones**
- Purse Seine Designed: Fine mesh & Coarser mesh
- Vessel Size: 40 to 70 GRT
- Management measures for purse seine fishery: **Licensing and Regulations are provided and managed by Sabah State Fisheries Department**

OVERVIEW



SABAH FISHERIES ZONE

07° 2.27" N, 116° 44.27 E

West Coast ZONE
71

EAST Coast ZONE
46

07° 2.27" N, 116° 44.27 E

TAWAU ZONE
160

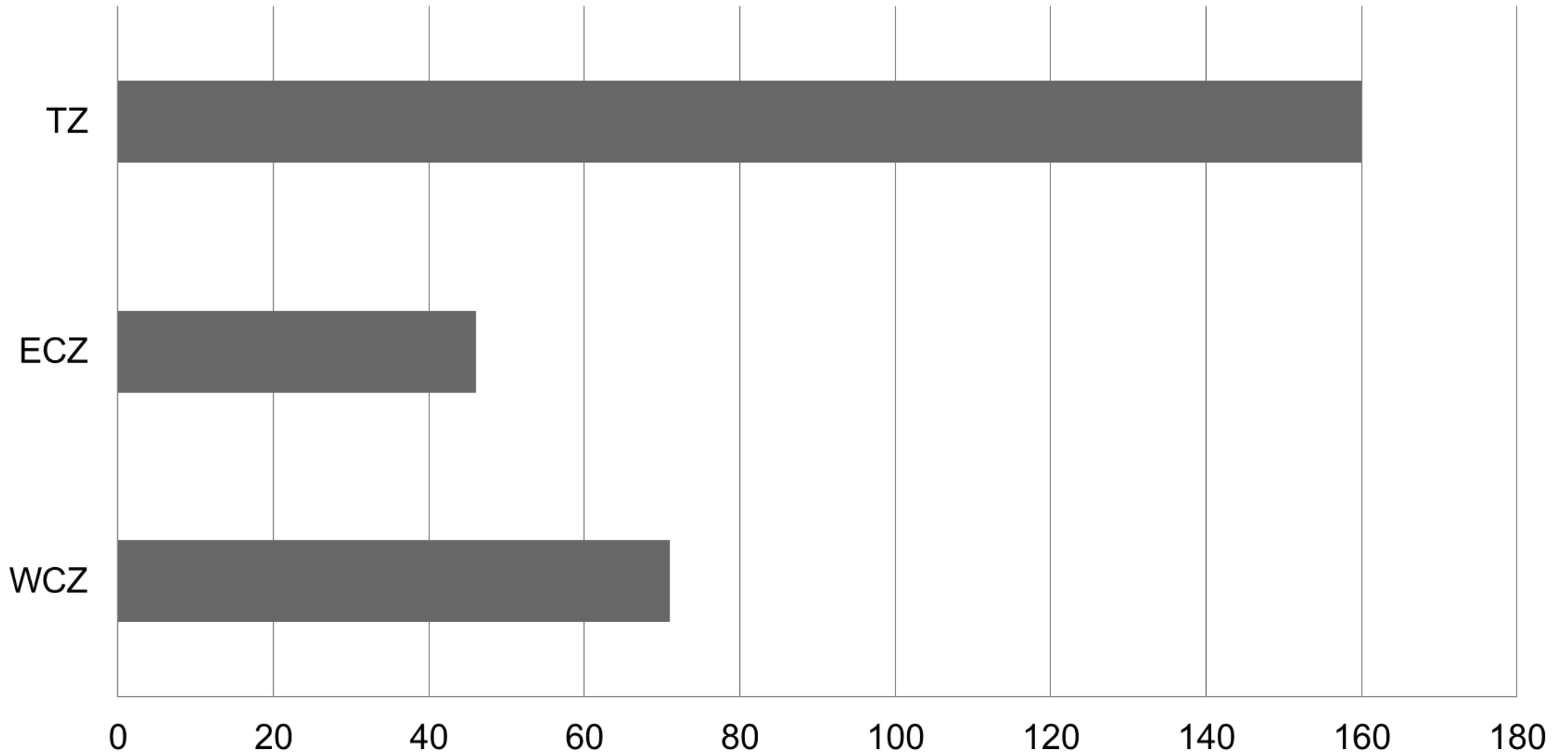


Purse Seine vessel in Sabah



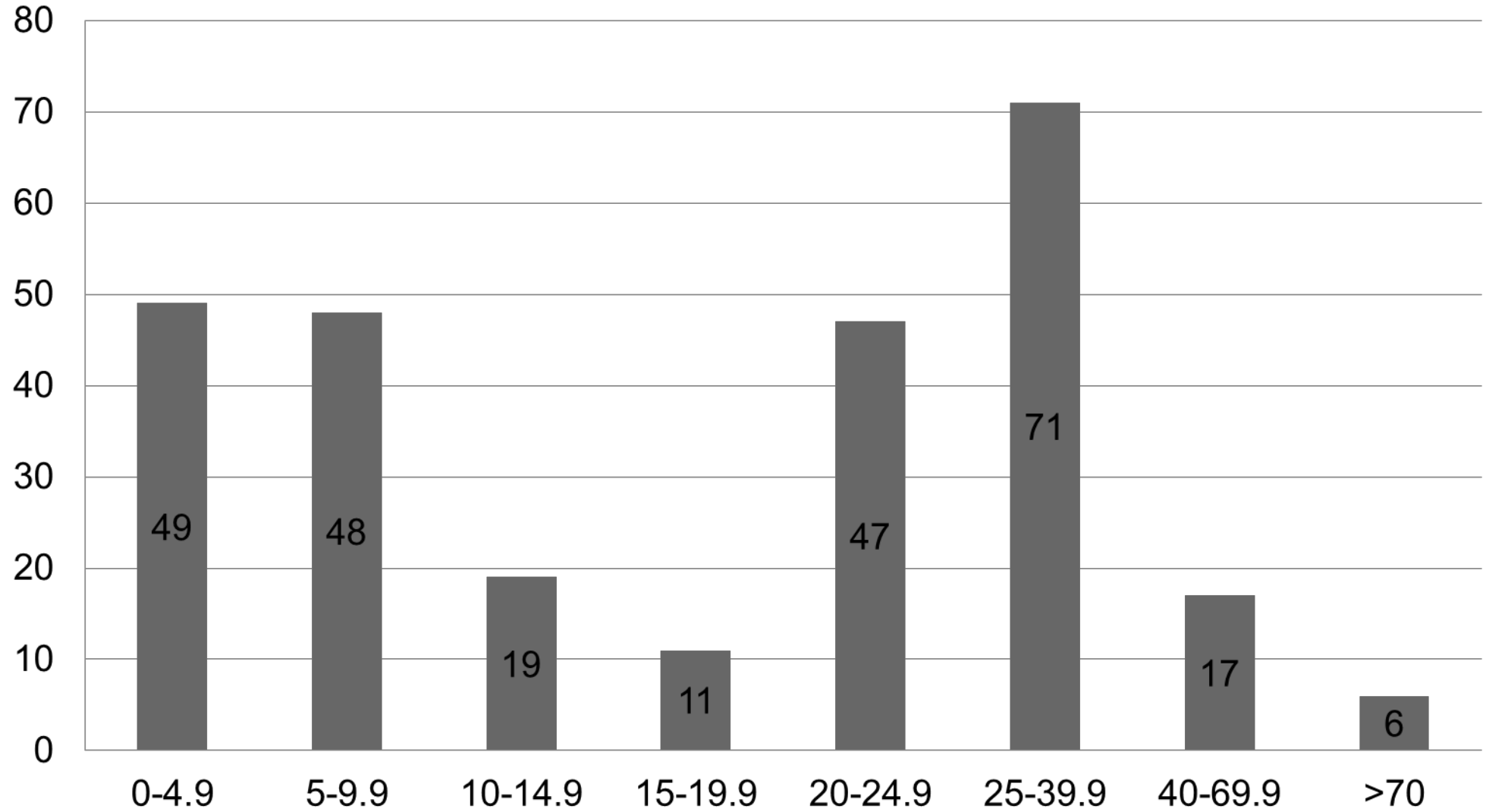
Purse Seine vessels in Sabah

Total Purse Seine Vessel by Zone 2017



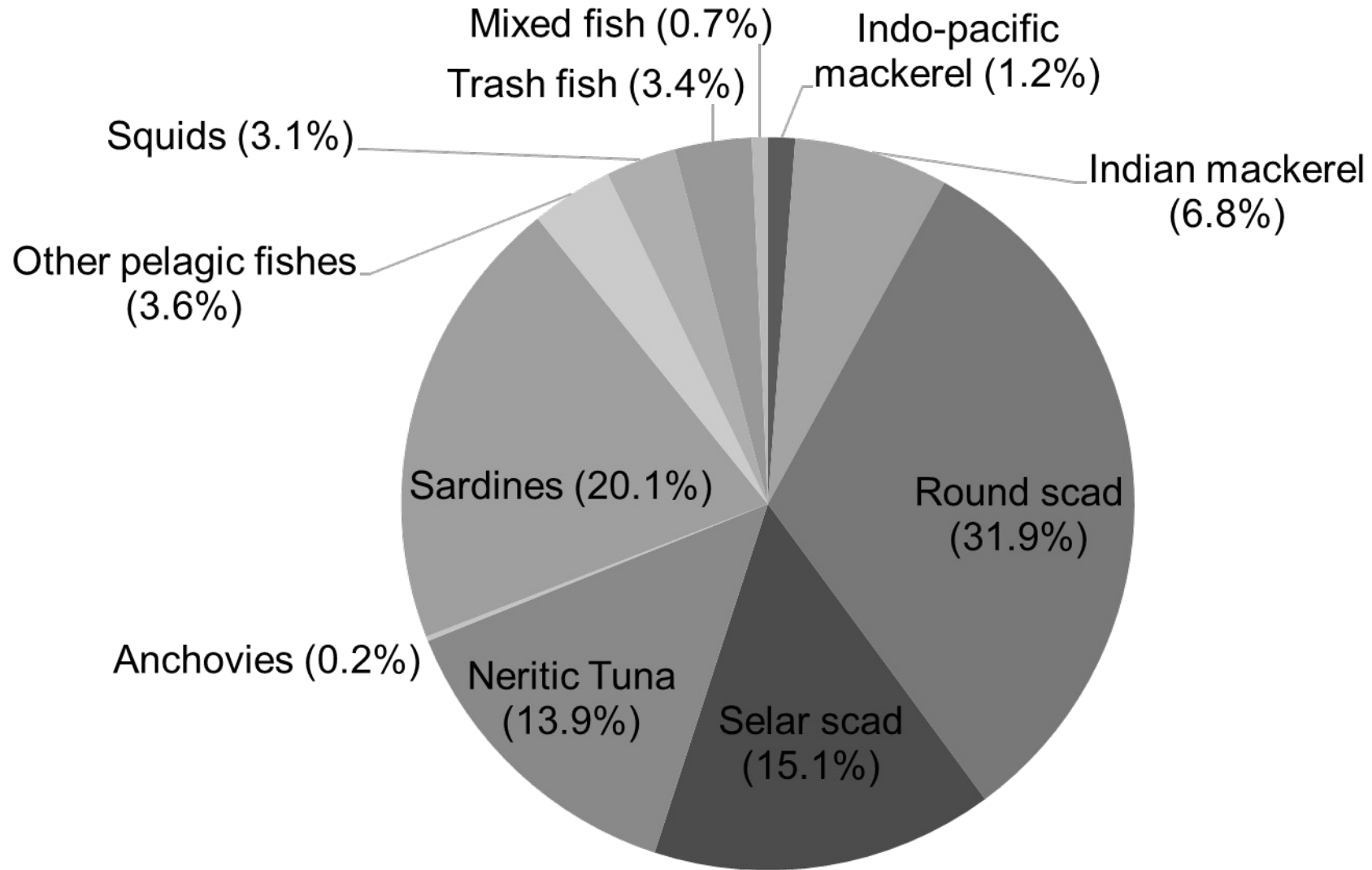
Reference: Sabah Annual Fisheries Statistic
2017

No. of Purse Seine Vessel by GRT 2017



Reference: Sabah Annual Fisheries Statistic 2017

Catch composition (MT,%) from purse seine in SABAH



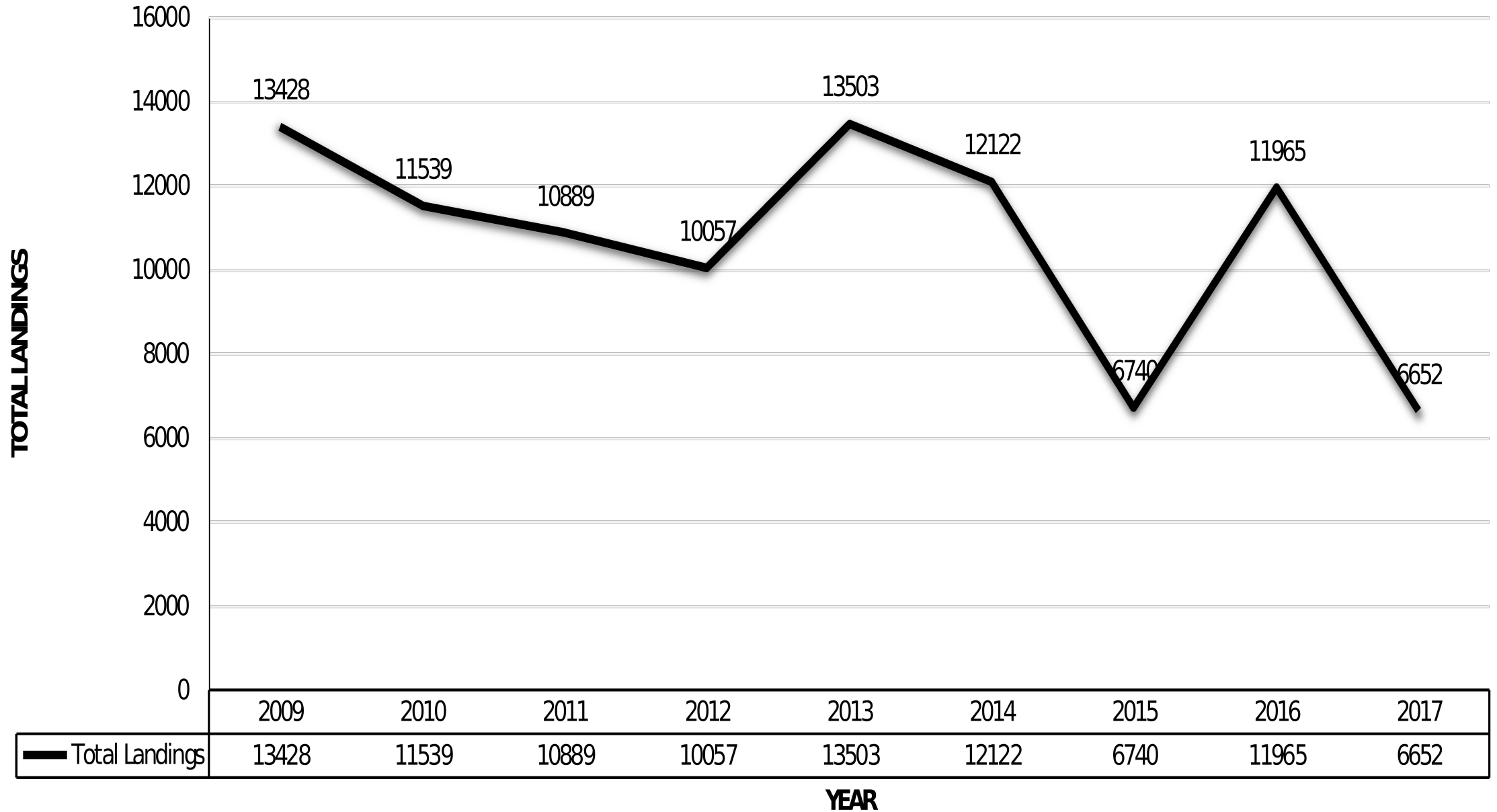
Fish Biological Information ?

(a) Length of 1st Maturity

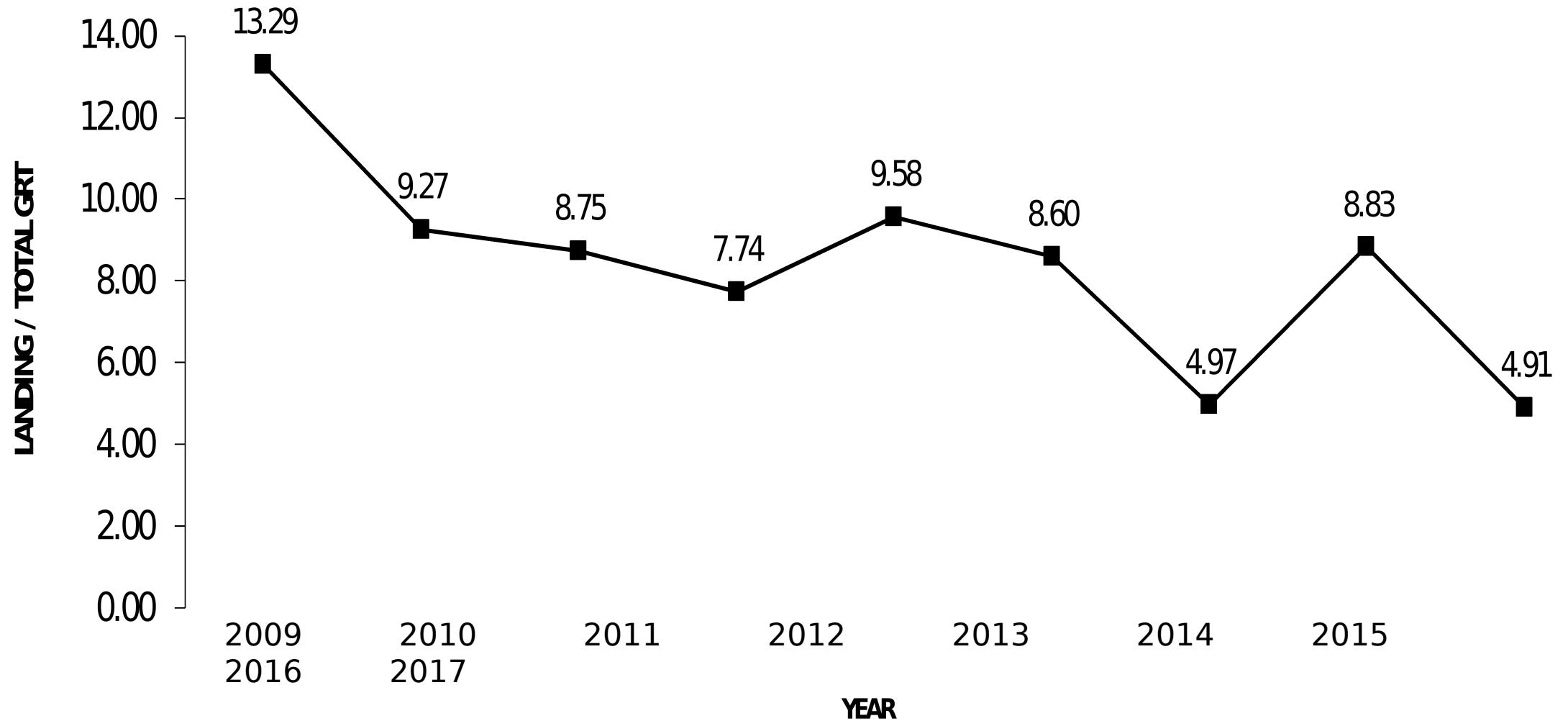
(b) Spawning Season

Need some allocation to continue!

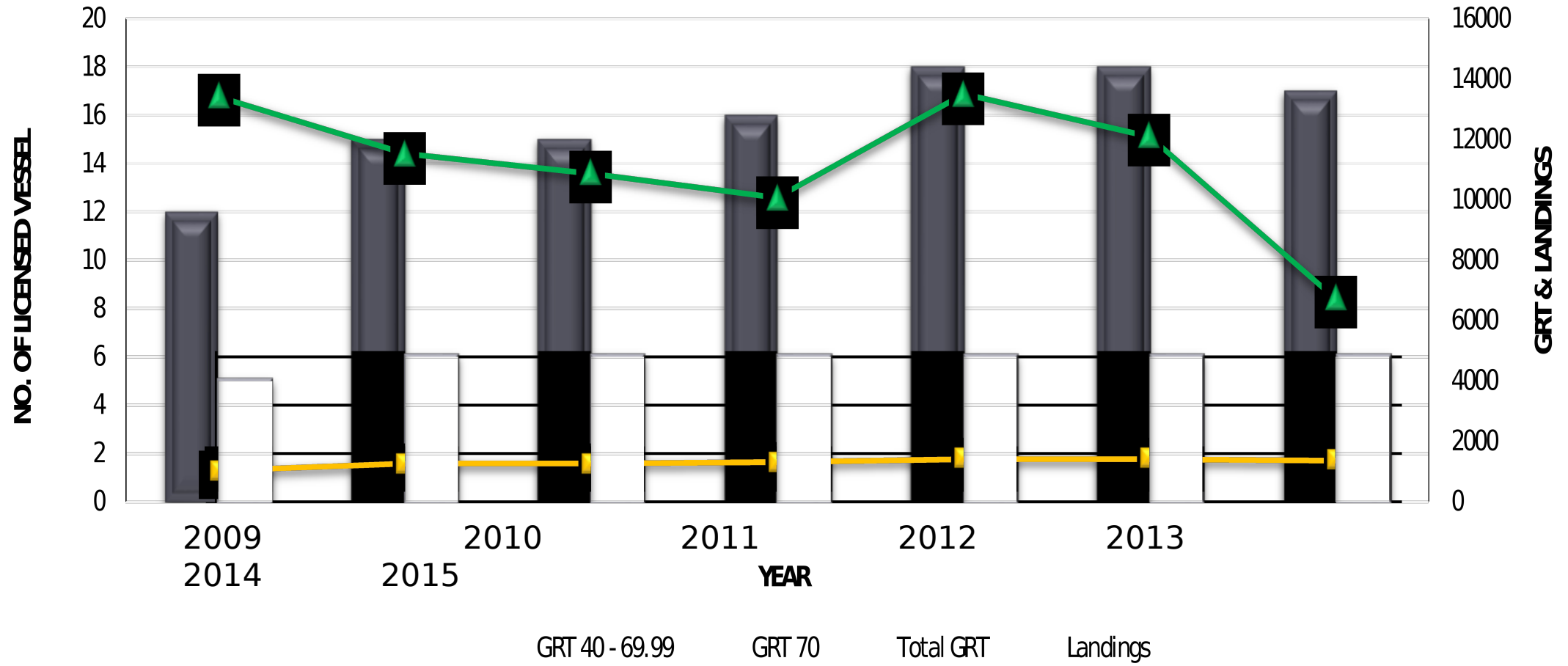
TOTAL LANDINGS MARINE FISH OF PURSE SEINE IN SABAH [2009 - mid 2017]



CPUe OF PURSE SEINE IN SABAH BY YEAR [2009 - mid 2017]



FISHING EFFORT FOR PURSE SEINE IN SABAH BY YEAR [2009 - 2015]



Management measures were developed within the framework provided by the fisheries law, **The Fisheries Act 1985 (Act 317)**. Among the main measures are:-

- Divided area into several Fishing Zones
- Closed Fishing Area
- Fishing Effort Control
- Fishing Units Control
- Port & At Sea Control
- Fishermen Registration
- Marine Habitat Conservation
- The Community-based Fisheries Management

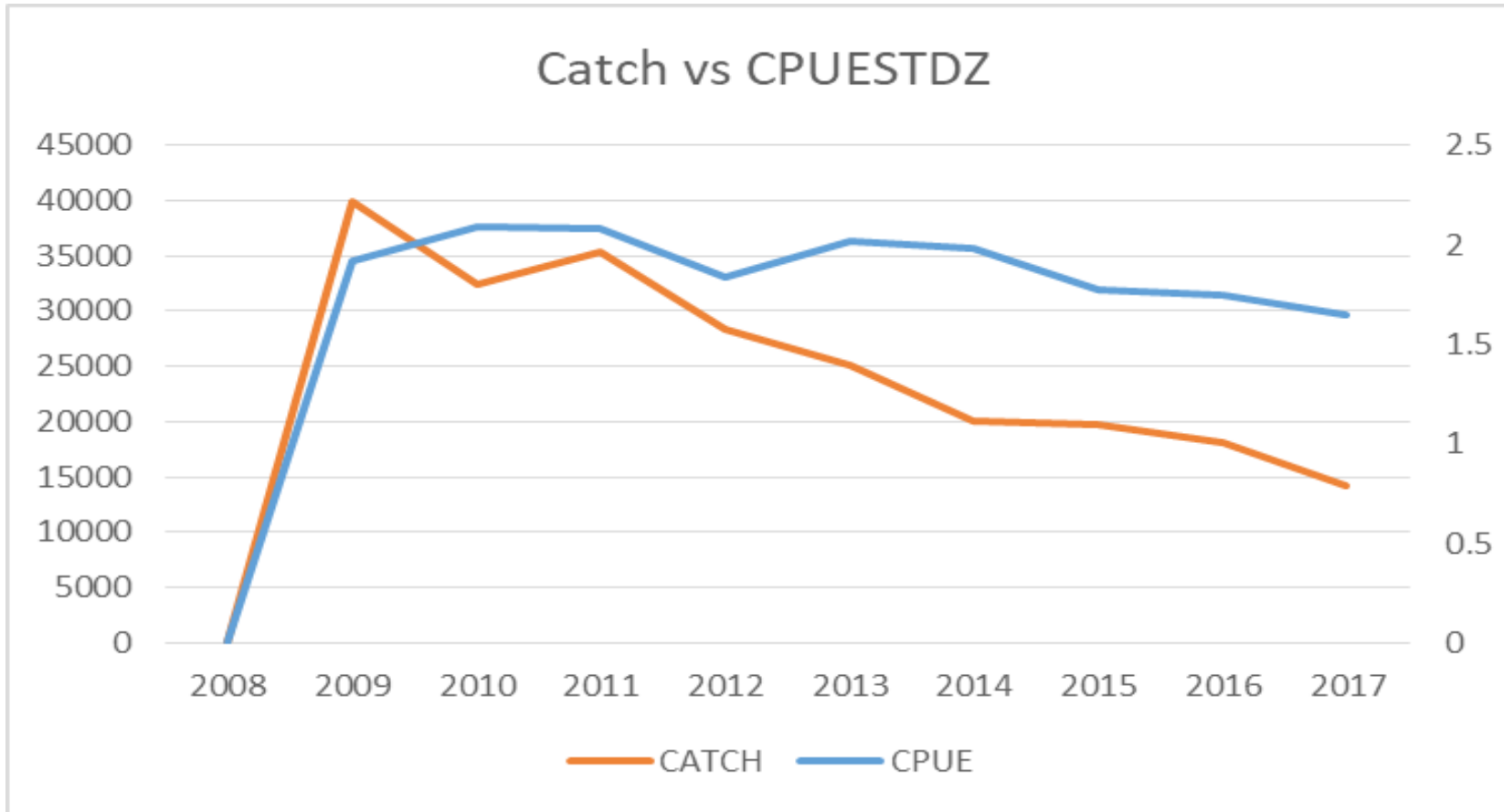
ISSUES & CHALLENGES ?

(1) LACK OF PERSONNEL TO GET of DATA LANDING

(2) LACK OF EXPERT IN FISHING biologist & technologist

Status of Pelagic Fish
Stock
for
East Coast Sabah via
Kobe Plot
(2009-2017)

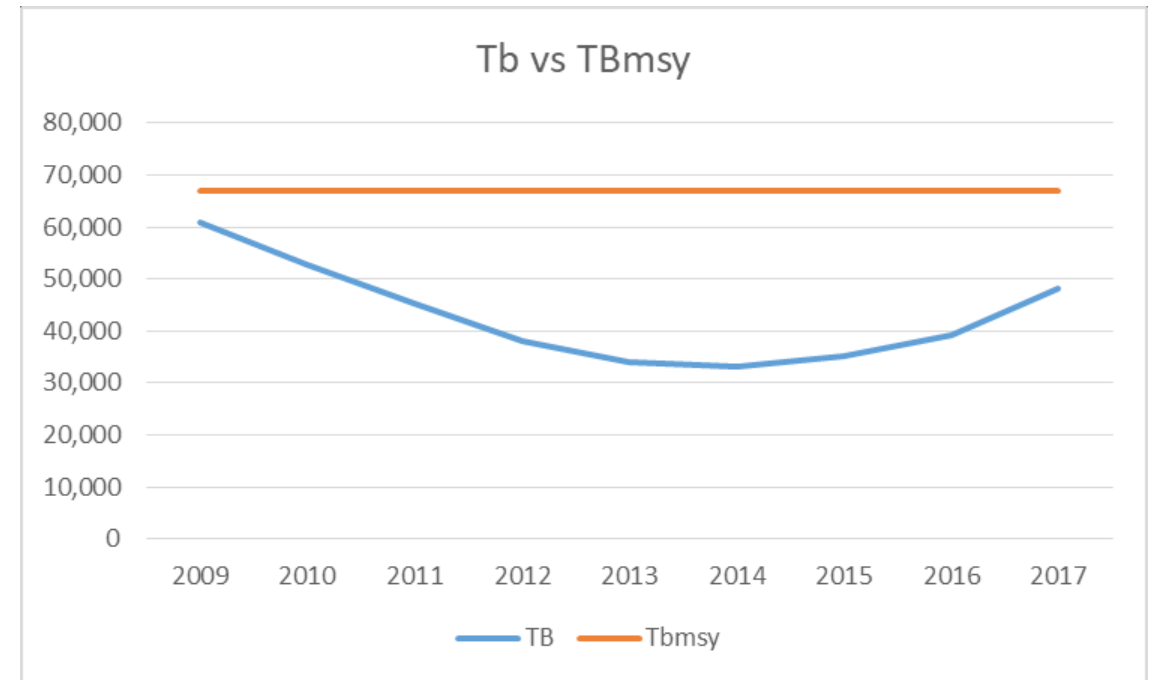
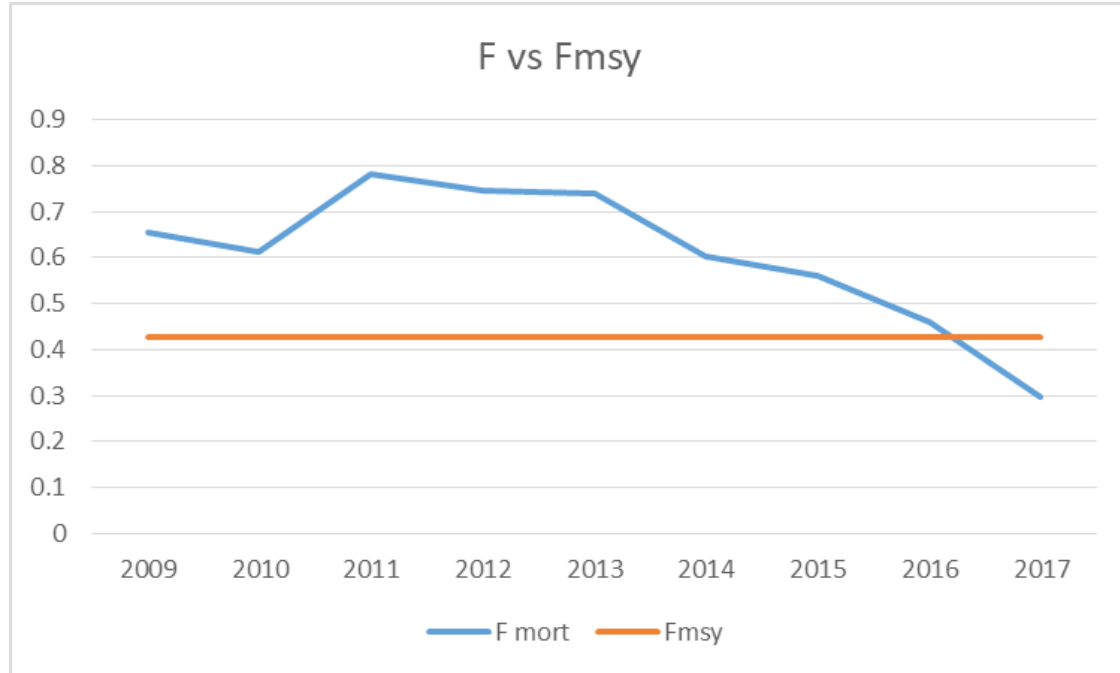
The figures show the landings and CPUE standardisation of pelagic fish from 3 types of gears (PS, Trawler and Drift Net) in EC Sabah waters from 2009 to 2017



CPUE Standardisation & Landings

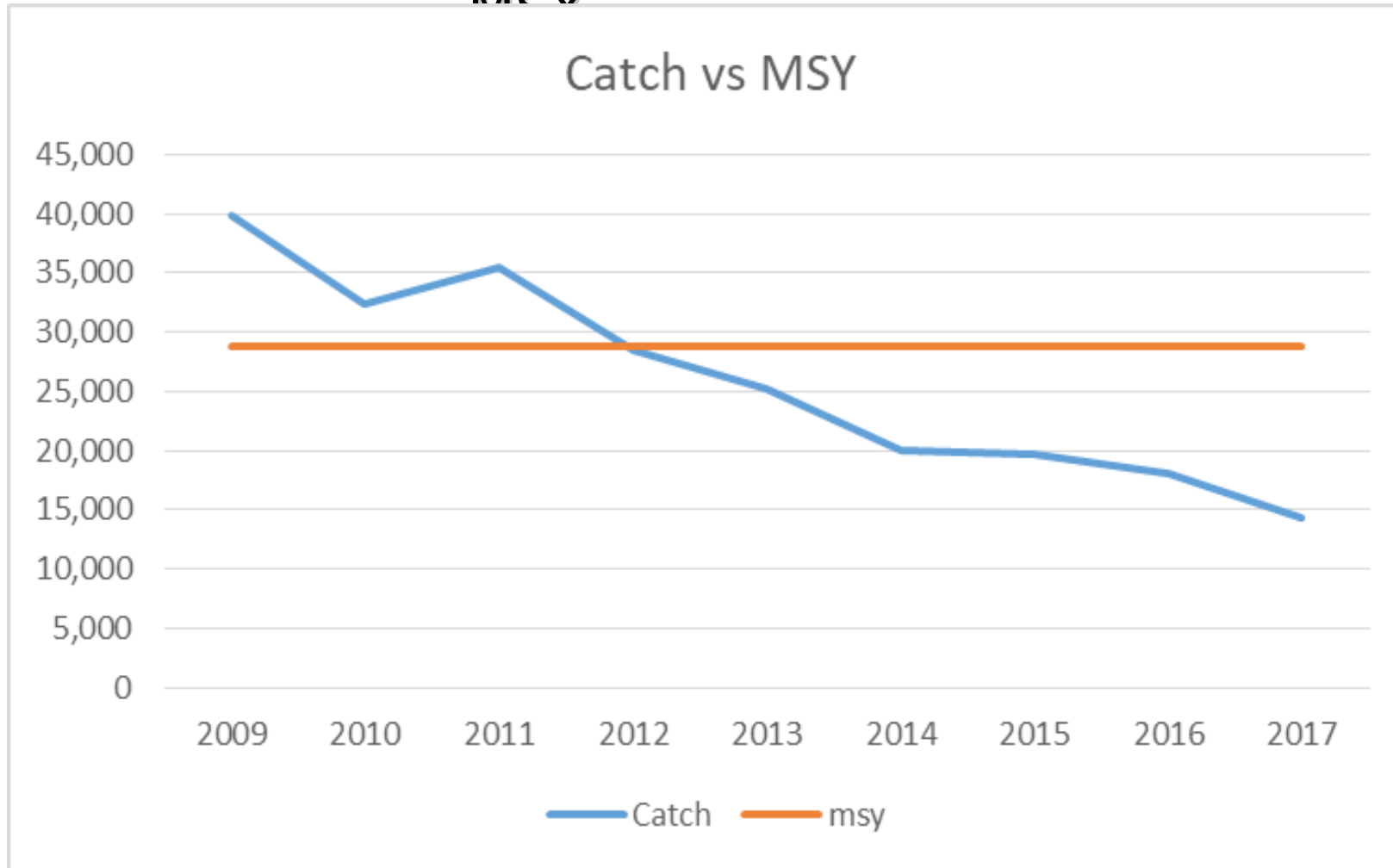
Year	CPUESTD	Catch
2009	1.92	39822
2010	2.09	32445
2011	2.08	35405
2012	1.84	28430
2013	2.02	25161
2014	1.98	20004
2015	1.77	19726
2016	1.75	18040
2017	1.65	14255

Graph F vs F_{msy} showed that pelagic fish mortality **surpassed** the F_{msy} until 2016



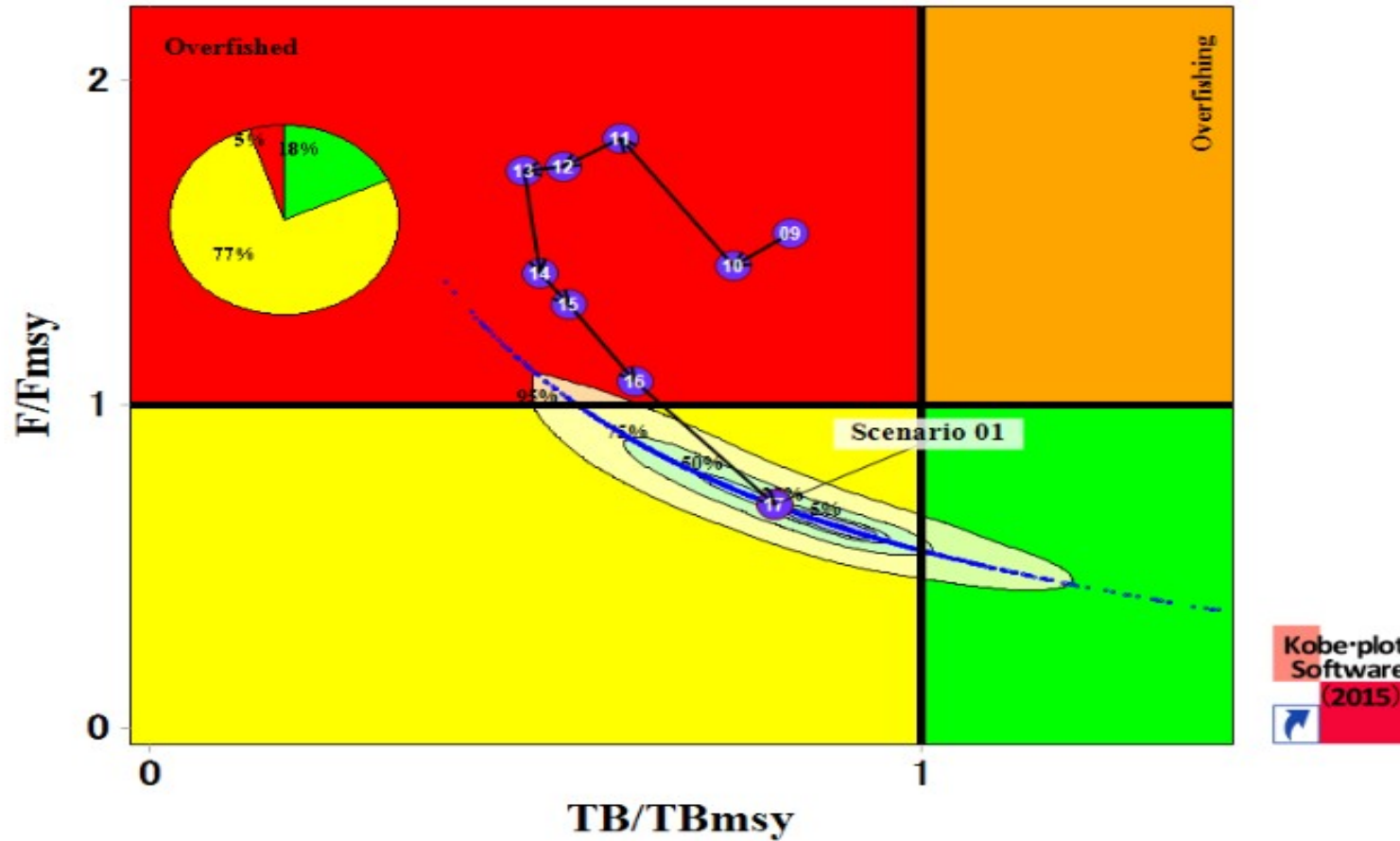
Graph TB vs TB_{msy} showed that Total Biomass of pelagic fish is under par of the TB_{msy} until 2017

Landings vs MSY



Graph shows the decrease trend of landings of pelagic fish from 2009-2017. The landings is below the MSY level from 2012.

KOBE Plot



The Kobe Plot revealed the status of pelagic fish in EC Sabah for 2017. The latest status of pelagic fishing is within the Recovery Area (Yellow = 77%)

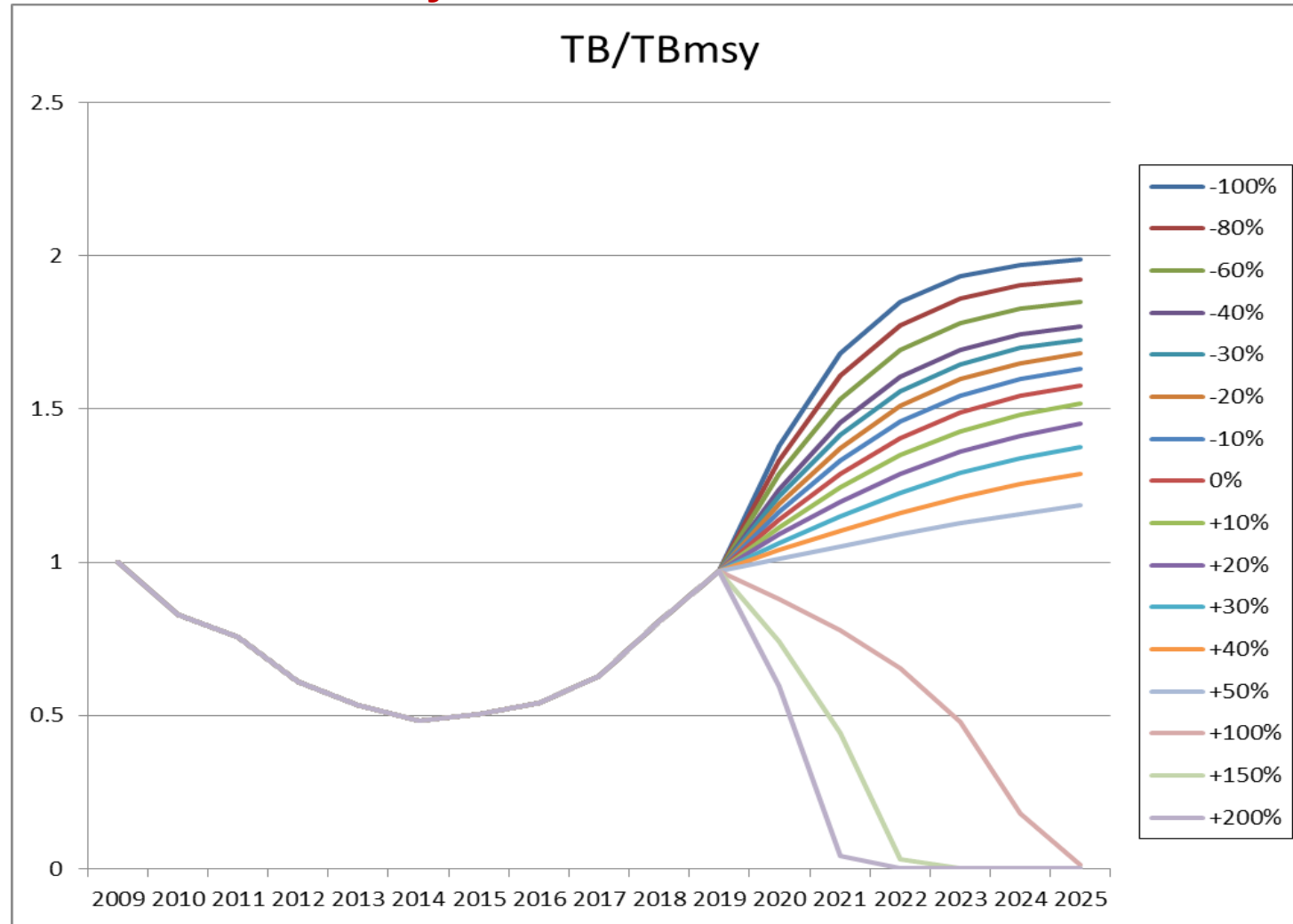
Probabilities (%) Table for Risk Assessment

Based on risk assessment, the current catch level (17,340 tonnes, 3 years average in 2015-2017) can be increased by 66% to the MSY level (28,730 tonnes). Even when the catch is increased to MSY level, the probabilities violating MSY (TB & F) are less than 45% in 10 years (2027).

Probabilities(%) violating TBmsy and Fmsy in 3 and 10 years.												
Color legend												
Risk levels	Low risk			Medium low risk			Medium high risk			High risk		
Probably	0 - 20%			20 - 50%			50 - 80%			80 - 100		
	60%	70%	80%	90%	100%	110%	120%	130%	140%	150%	166%	200%
												MSY level
10 catch scenarios (tons)	10,404	12,138	13,872	15,606	17,340	19,074	20,808	22,542	24,276	26,010	28,730	34,680
TB2020 < TBmsy	12	15	19	23	27	31	36	41	44	49	57	72
F2020 > F MSY	0	0	0	0	1	2	4	8	16	31	52	98
TB2027 < TBmsy	0	0	0	0	0	0	1	3	6	16	43	100
F2027 > F MSY	0	0	0	0	0	0	1	2	4	12	40	100

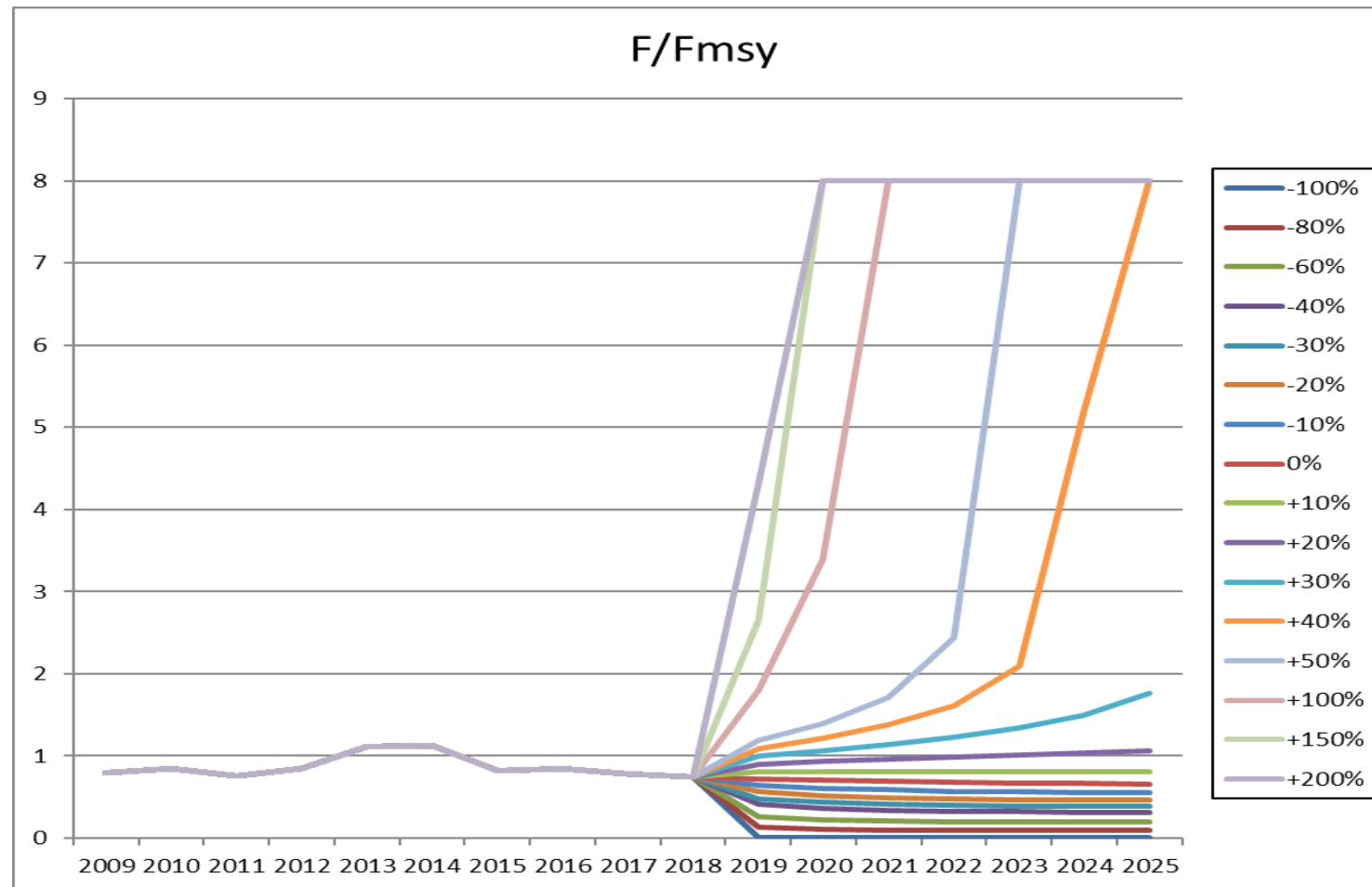
(*)The current catch level is the average catch in 3 recent years(2015-2017).

Projection TB/TB_{msy} (for next 10 years ahead, 2027)



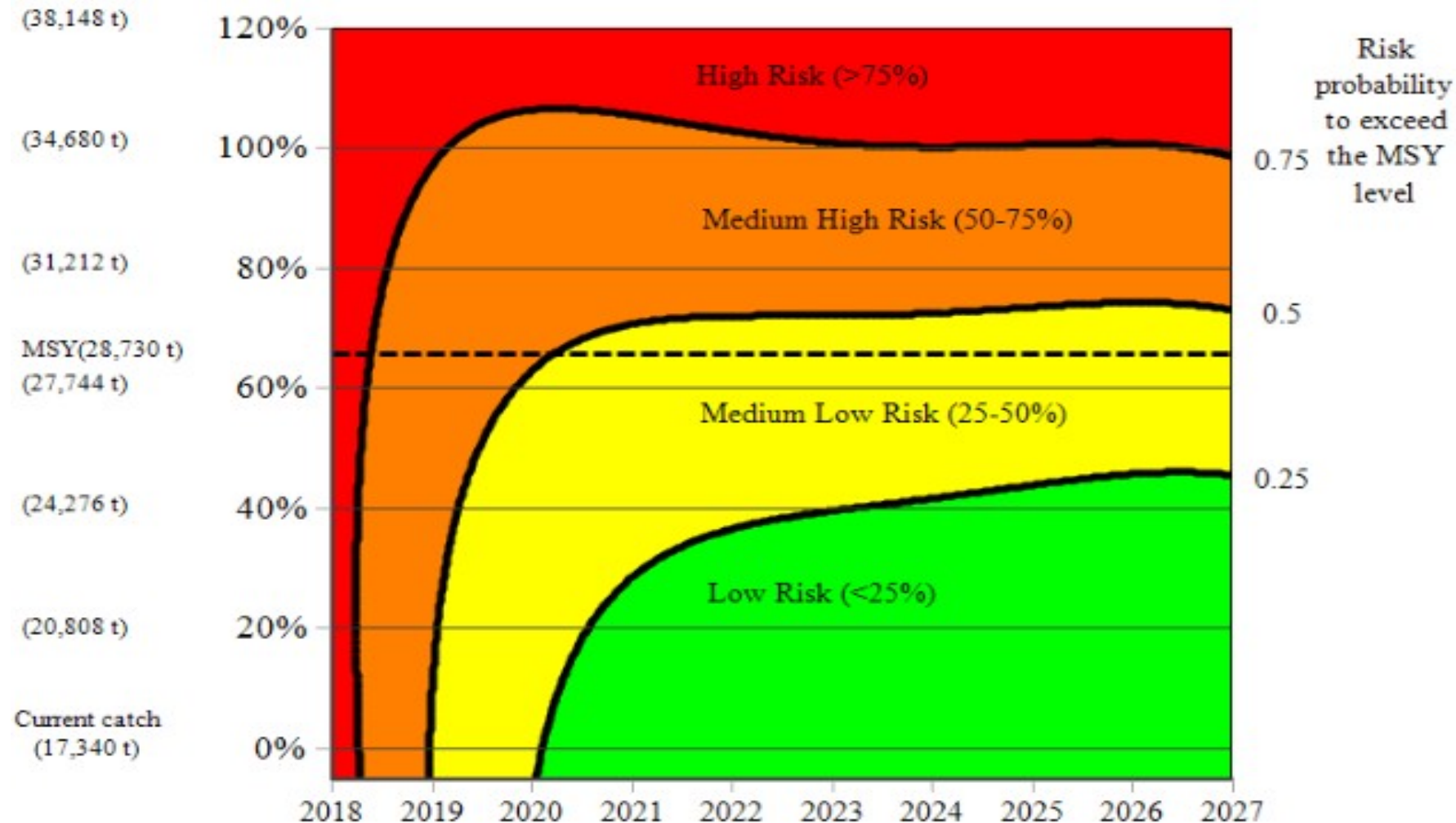
The projection of TB and F until 10 years ahead.

Projection F/F_{msy} (for next 10 years ahead, 2027)



The projection for F and F_{msy} by percentage increasing and decreasing until the next 10 years (2027)

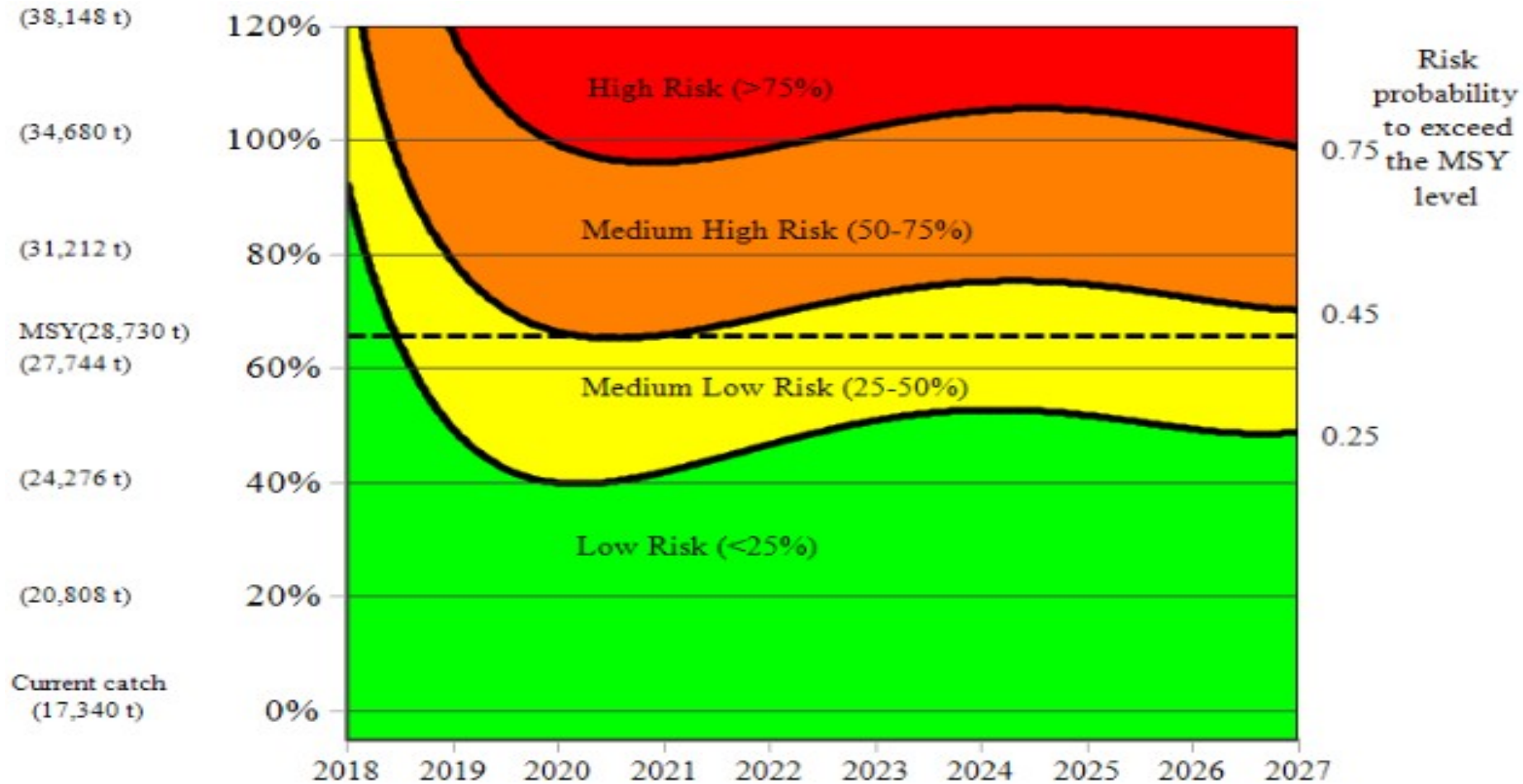
Total Biomass Risk Assessment



The figure shows the status of TB Risk

1. Green Zone (next 10 years) - if no increase in catch (same as 2017)
2. Yellow Zone (year 2020) - if increase by $\leq 60\%$ in catch from 2017

Fishing Mortality Risk Assessment



The figure shows the status of landings and MSY for pelagic fish in EC Sabah:

1. Landing in 2017 (17,340 mt) is still under MSY level (27,730T).
2. Status of pelagic resources in next 10 years will remain in Green zone even when catch is increased by $\leq 50\%$.
3. Increase in catch $\geq 50\%$ will reach Yellow zone.

Existing Management Strategies

- Joint venture program, close season and closed area management is in the process
- Now Malaysia is in the process of drafting the Fisheries Management Plan in all areas
- Pelagic fisheries management could be facilitated by kobe plot analysis



**THANK YOU VERY
MUCH !**