The Status of Neritic Tunas in Andaman Sea during the Transition Period of Fishery Reformation in Thailand

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Abstract

During the year of 2015-2017, Thailand has in the period of fishery reformation. The reformation included not only the principle legislations on fisheries but also the fishery registration system, fishing effort control via the fishing day scheme and the monitoring control and surveillance (MCS). This changing affects number of purse seiners and their effort. So, the consequent to the catch and catch rate of this fishing gear is expected.

This report reviews the historical number of purse seiners, catch and effort as well as catch rate of neritic tuna in the Andaman Sea. The assessment of the changing through the data collection program is also presented. However, it is the ongoing activities. The result of the assessment is expected to be presented in the next fishing year.

Keywords: Fishery Reform, fishing effort, purse seiners, monitoring control and surveillance (MCS)

Introduction

Thailand attached high priority to eliminating IUU fishing and effort to address the concerns by reforming and modernizing the fisheries sector in compliance with international rules : include to revise the fisheries laws. So far, Thailand has spent more than two years to resolve IUU fishing problem from since May, 2015 .

The Thai Government overhauled its legal and policy frameworks governing Thai fisheries within the first 8 months of its reform. The passage of the Royal Ordinance on Fisheries B.E. 2558 (2015) in November 2015 and the adoption of the Fisheries Management Plan (FMP) 2015-2019 in December 2015 , are the two important landmarks in the reform.

The new Royal Ordinance provides the legislative framework for Thailand to combat IUU fishing including strong penalties against infringements. Since May, 2015, 76 cases of wrongdoings have been brought against Thai vessels operating overseas, 773 cases against Thai vessels operating in Thai water, 115 cases

against foreign and stateless vessels, and 51 cases against sea food processing establishments.

To expedite the above legal proceedings, a special taskforce, consisting of an inter-agency team, has been set up for better coordination-sharing in order to closely monitor the progress of these cases with the aim of having a court ruling within six month after indictment, or within one year for cases of greater complexity.

Fishery Legislation Framework

Royal Ordinance on Fisheries B.E. 2558(2015)

The Royal Ordinance on Fisheries B.E. 2558(2015) comprises 11 Chapters of176 sections, including the transitory provisions.

Section 1 – Section 7 : Show the deemed expedient to revise the laws on fisheries and the definitions. The provisions of this Royal Ordinance aim to reorganize fisheries in Thailand and in waters at large with a view to preventing IUU fishing in order to preserve aquatic animal resources as a sustainable sources of food for humanity and preserve the environment in an appropriate state along the line of approaches, criteria and standards recognized internationally, as well as to protect the welfare of seaman and prevent all forms of forced labour in the fisheries sector, with due regard to the following objectives.

(1) Achieving good governance in the management and conservation of aquatic resources and the fisheries sector, and ensuring that complete and accurate data thereof are collected;
(2) Protection of special interests of artisanal fisheries and local fisheries communities;
(3) Fulfillment of Thailand' international obligations with regard to the conservation and management of aquatic resources;
(4) To provide effective means for preventing , deterring and eliminating IUU fishing, as well as unlawful labour practices in fisheries sector;
(5) Use the best available scientific evidence to achieve long-term economic, social and environmental sustainability;
(6) To prevent and eliminate overfishing and overcapacity and ensure that the level of fishing effort does not undermine the sustainability of fisheries resources;
(7) Implementation of systematic measures for the application of this Royal Ordinance;
(8) Cooperation with other States, private agencies, as well as international organizations, with a view to achieving the objectives under this Royal Ordinance;
(9) Ensuring legal working conditions and welfare of workers in all areas of the fisheries sector;

(10) Ensuring effective monitoring, surveillance and control of fishing activities;

(11) Implementation of an effective traceability system from fishing operations to ultimate consumers; and

(12) Imposing proportional and deterrent administrative and criminal sanctions.

Chapter 1: General Provisions

Chapter 2: Fisheries Management

Part 1 : The national fisheries committee

Part 2 : Provincial fisheries committee

Chapter 3: Fishing Operations in Thai Waters

Chapter 4: Fishing Operations outside Thai Waters

Chapter 5: Conservation and Management Measures

Chapter 6: Aquaculture Promotion

Chapter 7: Control, Surveillance, Traceability, and Inspection

Part 1 : Control and Surveillance

Part 2 : Evidence for the Purposes of Traceability

Part 3 : Inspection Measures

Chapter 8: Hygiene Standards of Aquatic Animals or Aquatic Products

Chapter 9: Competent officials

Chapter 10: Administrative Measures

Chapter 11: Sanctions

Section 171 – Section 176 : Transitory Provisions

Fisheries Management Plan (FMP)

The newly adopted FMP outlines key principles and policy priorities to tackle overcapacity of the Thai fishing fleet and over fishing as well as prevent the degradation of marine resources. An important development under the new FMP is the introduction of the new "electronic fishing license scheme (E-license)"[1] and the "fishing day scheme" since April 2016, which mark a transition from open-access to limited-access fisheries.

Thailand revolutionize its fishing license regime as part of the sweeping reform of the country's fisheries management. The latest step marks another milestone in the Thai Government's battle against illegal fishing, with the goal of ensuring the long-term sustainability of living marine resource.

All fishing license issued by the former fisheries law, expired at the end of March 2016. The new fishing licenses are required from 1 April 2016 onwards and it will be valid for 2 years. The fishing operators could request the new fishing licenses during 1-15 March 2016.

The issuance of new fishing license is consistent with the maximum sustainable yield (MSY) stipulated in the Marine Fisheries Management Plan (FMP). This practice, mandated by section 36 of the Royal Ordinance, signifies a science-based approach to fisheries management in line with international standards.

As such, the number of fishing license granted will not exceed the level of catch permitted by MSY. Hence, the new fishing license regime marks a transition from open-access to limited-access fisheries. It will eliminate overcapacity of the fishing fleet and over fishing, thereby to preventing the degradation fisheries resources.

Monitoring, control and surveillance (MCS) have been applied in Thailand since 2015 to ensure that fishing activities comply with the new fisheries laws and regulations to prevent and combat IUU fishing. The significant progress to improve and enhance MCS has been achieved such as the improving of VMS technology, the training officials in monitoring and control of fishing operations, the upgrade of VMS center, establishment of 32 Port-In and Port-Out (PIPO) Control Center. All commercial fishing vessels greater than 30GT, must be equipped with VMS and required to report to PIPO control center for checking documents, inspection of vessel, catch, and crew when calling for port-out or port-in. Accordingly, all purse seiners are in this group.

The review of historical data

Mostly, neritic tuna in Thailand caught by purse seiners even in Andaman Sea. The total number of purse seiners in Thailand was 1,461 vessels which include327 vessels in Andaman sea and the rest was the vessels in the Gulf of Thailand. The purse seiners in Andaman shared 7.98% of all registered gears in Andaman and 1.39 % of all registered gears in Thailand. The number of purse seiners in Andaman Sea provinces during 2008 - 2014 showed in Table 1.

Table 1 Number of purse seiners registered by province along the Andaman Sea coast of Thailand,during 2008-2014.

Province	2008	2009	2010	2011	2012	2013	2014
Ranong	15	26	45	49	45	43	61
Phangnga	45	46	63	39	50	58	72
Phuket	17	29	30	21	35	39	17
Krabi	3	8	10	15	87	15	19
Trang	66	82	79	77	63	65	62
Satun	62	79	85	57	69	62	96
Total	**208**	**270**	**312**	**258**	**349**	**282**	**327**

Source: DOF, 2014

Figure 1 showed the historical trends of purse seine fleet, which was increasing from 2008 to 2014, forecast that after the enter into force of the new Royal Ordinance, the purse seine fleet will decrease and it may accordingly effect the catch of neritic tuna.

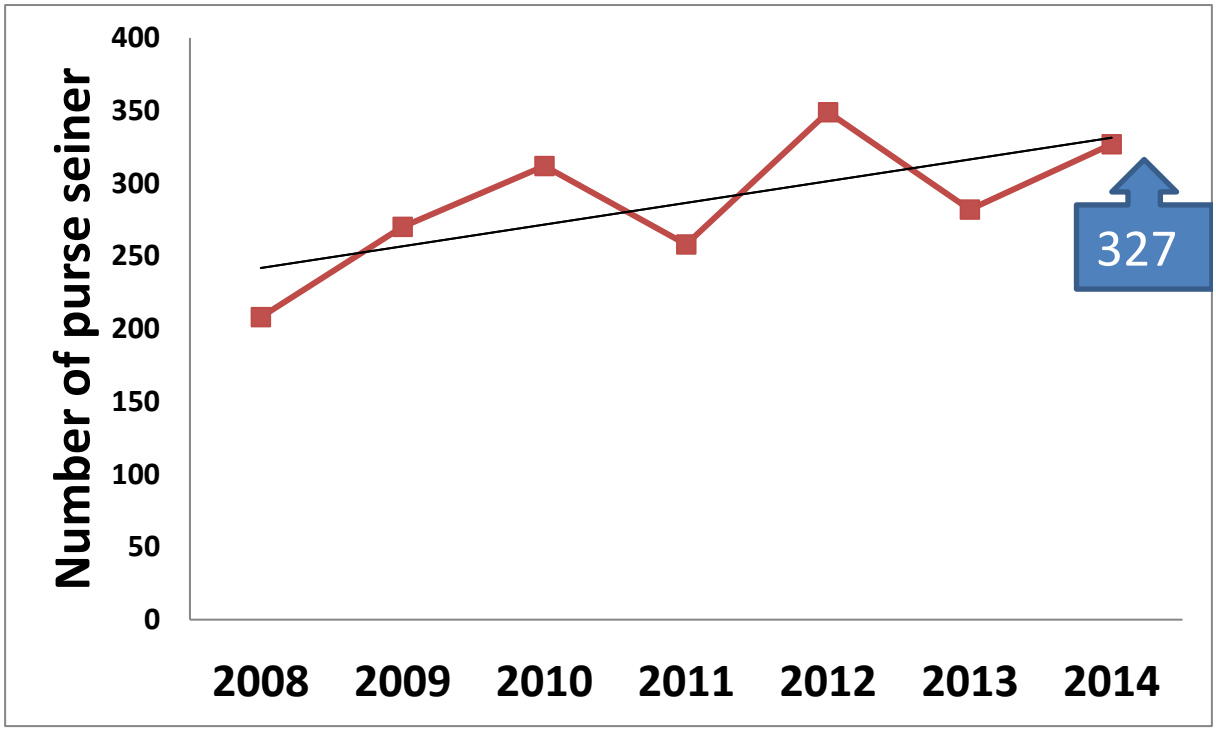

Figure 1 Number of purse seiner registered and trends of the vessels

The historical caught composition of neritic tuna in Andaman Sea showed four species of neritic tuna including longtail tuna, kawakawa, bullet tuna and frigate tuna. The majority of catch was longtail tuna following by kawakawa and others. The historical catch of neritic tuna showed in Table 2.

Table 2 Species composition of neritic tuna during ,2010-2014.

Species	2010	2011	2012	2013	2014
Longtail tuna	14	14.7	17.8	15.9	17.1
kawakawa and others	21.1	23.6	21.5	23.4	24.9
total	**35.1**	**38.3**	**39.3**	**39.3**	**42.0**

Source: DOF 2010 – 2014

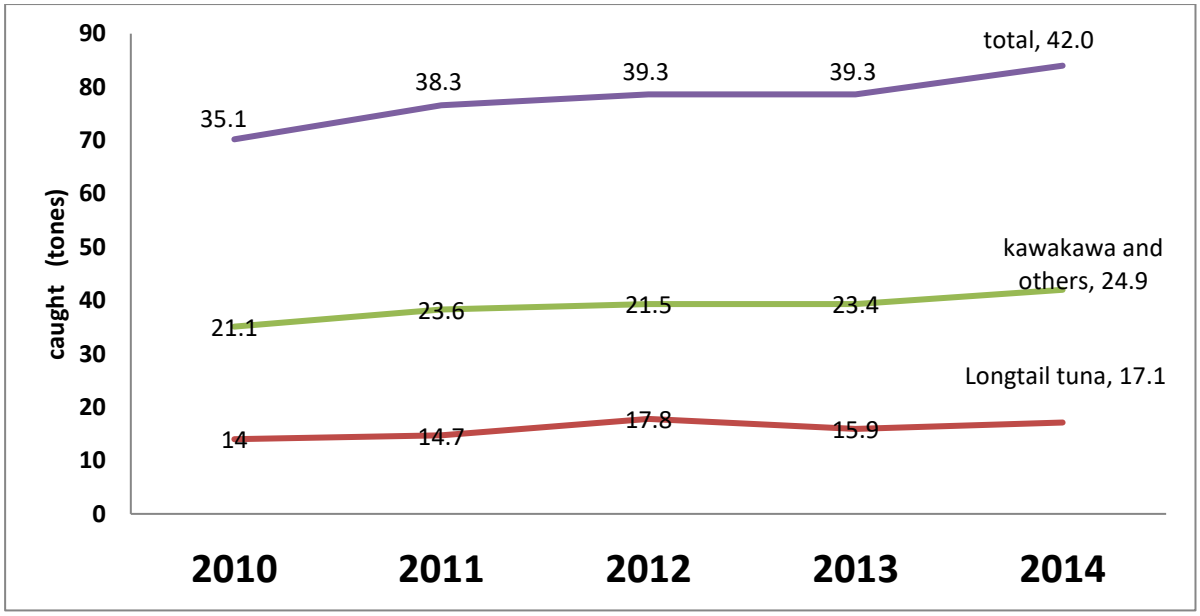

Figure 2 Neritic tuna catch in Andaman Sea coast of Thailand,during 2010 to 2014.

Total catch of all species was increasing from the year 2010 to 2014 . However, during these year, the catch was not separate bullet tuna and frigate tuna from kawakawa. Catch of longtail tuna is lower than kawakawa and others. Its catch was highest in 2012 as 17.8 tones and decreased to 15.9 tons in the following year. For kawakawa and others, the highest catch was in 2014 as 24.9 tones and lowest in 2010 as 21.1 tones.

After the entering into force of the new Royal Ordinance, Thai government had conducted a nation-wide survey of all existing Thai-flagged fishing vessels to confirm and cross-checked the actual number of fishing vessels, vessel-types and fishing gears, as well as the validity of their vessel registration and fishing license. As a result, currently, Thailand has a clear picture of its fleet structure with an up-to-date vessel database called “Fishing Info” which provides the real-time information of fishing vessels. This integrated vessel database provides a strong basis for effective implementation of Thailand’s fleet management and capacity reduction strategy.

Currently, the total number of purse seiners in Andaman Sea is 259 vessels, which decreases from 327 in 2014. There are 88 vessels registered in Phangnga, 46, 37, 36 in Satun, ranong, Phuket, respectively and the rest were registered in other province such as Chumporn Krabi Pattani Prachuabkirikhun Songkhla Trang and Rayong .

Table 3 The number of purse seine fishing in Andaman sea, 2016.

Province	**No. of vessel**	**percent (%)**
Krabi	17	6
Phangnga	108	42
Phuket	36	14
Ranong	37	14
Satun	46	18
Trang	15	6
Total	**259**	**100**

Source : personal contact

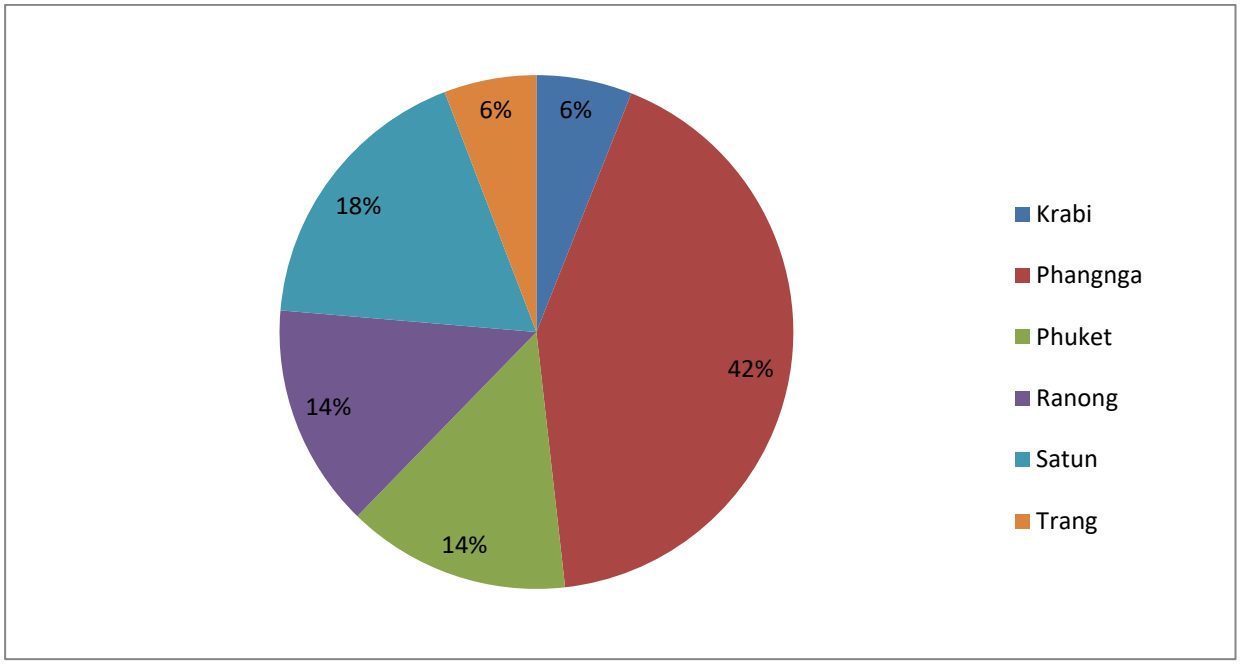

Figure 4. Percentage of purse seiner in Andaman Sea by province registered in 2016

The catch of neritic tuna by type of fishing gear in Andaman Sea showed in Table 4. The highest catch was Longtail tuna (52.05%), followed by Kawakawa (34.23%), Frigate tuna (10.44%) and Bullet tuna (3.28%). The common Thai purse seiner accounted the highest catch of the total neritic tuna (46.12%) that composed of longtail tuna for 42.08% and a little frigate tuna and kawakawa. The

FADs purse seiners accounted 33.81% of the total neritic tuna that included kawakawa for 19.37%, longtail tuna for 4.77%, frigate tuna for 6.95% and Bullet tuna for 2.72%. The Luring purse seiners (LPS) accounted 20.07% of the total neritic tuna which included kawakawa for 12.89%, longtail for 5.20%, frigate tuna for 1.42% and and bullet tuna for 0.56%.

Table 4 Percentage of neritic tuna caught by type of purse seine, 2016

Species	FADs	LPS	TPS	Total
Bullet tuna	2.72	0.56	0	3.28
Frigate tuna	6.95	1.42	2.07	10.44
Kawakawa	19.37	12.89	1.97	34.23
Longtail tuna	4.77	5.2	42.08	52.05
Total	**33.81**	**20.07**	**46.12**	**100**

Source: AFRDEC sampling data, 20 16

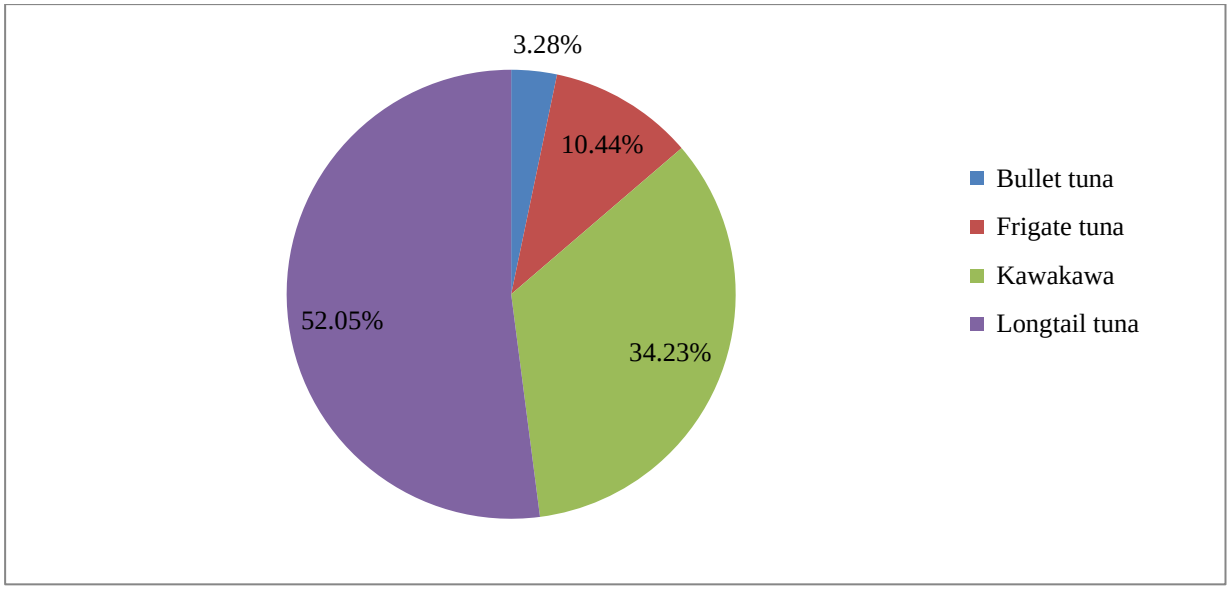

Figure 5 Percentage of neritic tuna caught by purse seine,2016

Table 5 CPUE (kgs/day) of neritic tunas caught by purse seine along the Andaman Sea Coast of Thailand,2016

Species	Bullet tuna	Frigate tuna	Kawakawa	Longtail tuna	Total tuna	Average CPUE
Jan	55.74	28.40	192.39	59.70	336.24	6266.71
Feb	0.00	69.57	189.40	197.09	456.06	3527.04
Mar	18.12	76.70	173.18	114.11	382.11	7117.82
Apr	62.56	319.55	535.29	96.45	1013.85	5881.81
May	32.67	41.84	455.78	0.00	530.30	5886.32
Jun	44.69	252.50	608.06	21.48	926.73	2974.76
Jul	78.35	16.48	251.51	836.03	1182.37	3728.42
Aug	88.88	8.40	106.52	18.75	222.55	3485.41
Sep	0.00	9.11	129.23	111.88	250.23	2406.94
Oct	7.02	1.26	286.79	8.41	303.47	2628.99
Nov	0.20	207.12	146.09	2813.91	3167.32	4015.74
Dec	0.00	0.16	313.42	1.98	315.56	2456.67

Source : AFRDEC sampling data, 2016

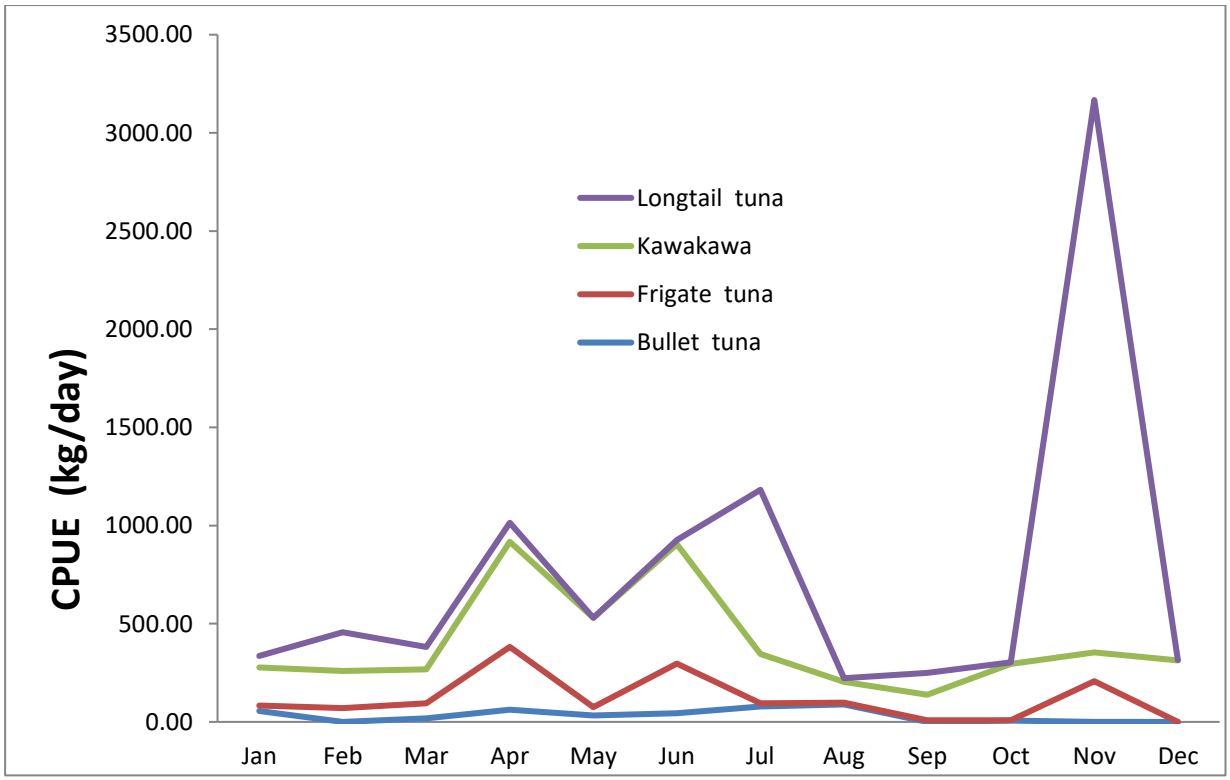

Figure 6 CPUE (kgs/day) of neritic tunas caught by purse seine along the Andaman Sea Coast of Thailand,2016

The maximum catch rate of neritic tuna was 3,167.32 kgs/day, in November , which mostly from TPS. The lowest catch was 222.55 kgs/day in August. The catch rate of Bullet tuna was higher during March to September. The catch rate of frigate tuna was higher in April, June and November. The peak of catch rate of kawakawa was during April to June. However, for the longtail tuna, the highest catch rate was in November and fluctuated in other months.

Conclusion and Recommendation

Fishery reformation in Thailand made the change in the input fishing capacity for neritic tuna fisheries in Andaman Sea in term of number of fishing vessels, towards the input fishing effort. This changing may somewhat affect the catch and catch rate. However, the changes may be not discovered after a short period, but it needs the continue collecting activity to pursue and assess the result of the management measure. **So, the port sampling program will continue and to report in the next IOTC meeting.**

Problem and Solution

1. Knowledge and methodology to identification neritic tunas in field
2. Lack of staff and and worker in order to do the port sampling when the purse seiner landing simultaneously
3. Sampling ports is far away from each other. It spend time to go and do the sampling such as Phang Nga province has more than 5 ports and are located in separate area. In addition, mostly neritic tuna is caught from Phang Nga province.

References

Department of Fisheries. 2012-2014. Fisheries statistics of Thailand 2014. Information and Communication Technology Center, Department of Fisheries.

Department of Fisheries. 2016. Statistics of Marines Fish at Landing Place 2014. Information and Communication Technology Center, Department of Fisheries.

Department of Fisheries. 2016. Thai Fishing Vessels Statistics 2014. Fishery Information Center, Department of Fisheries.

Bhumiphol Adulyadej,
Rex. 2015. Royal
Ordinance on Fisheries

B.E. 2558 (2015).
Thailand. 45 pages.