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Preliminary report on port monitoring for unloading by Japanese Purse Seiners and some suggestions for data collection

WCPFC6-2009/IP19

30th November 2009

Submitted by Japan

In accordance with Paragraph 15, CMM 2008-01, Fisheries Agency of Japan (FAJ) started the 100% monitoring program on unloading by purse seiners at Japanese ports in February 2009.

This report provides, under Paragraph 43 of CMM 2008-01, a brief summery of:
(a) how monitoring is being implemented;
(b) what results were obtained; and
(c) conclusion and some suggestions that derived from (b).

1. How monitoring is implemented

Monitoring has conducted in accordance with the "Bigeye Tuna Management Plan for 2009" which was circulated to all CCM through the WCPFC Secretariat on 30 January 2009 (See Attachment).

(1) Catch limit

Catch limit of bigeye tuna for Japanese Purse Seiners in 2009 is set as 5,971 tons, 90% of 2001 – 2004 average catch, 6,634t.

(2) Port designation

To ensure the 100% monitoring, FAJ designated 5 ports for landing: Yaizu, Onagawa, Ishinomaki, Yamagawa, and Makurazaki.

(3) Procedures for monitoring

A purse seine vessel must notify FAJ and relevant authorities of name of the port it intends to enter and date of its entry immediately after it decides. Upon receipt of the notification, an inspector is dispatched to the notified port. The inspector monitors sorting and scaling, - if necessary directs correction, - endorses weight by size and species, and issues a landing certificate. As soon as the process is completed, he sends the certificate to the JFA. JFA compiles certificates and reports them to the WCPFC Secretariat promptly.

(4) Process of sorting and scaling by size (See Annex)

Sorting and weighing process begins as landing starts at a port. Fish from vessel is unloaded on conveyors for selection. First, bigeye and yellowfin are sorted out from skipjack dominated catch – skipjack will be scaled by size thereafter at the same place. Second, bigeye and yellowfin are sorted out by size and fish are compiled into the designated metal cages for weighing later. Each port has its own sizing category based on commercial practice. Yaizu port, where most of catch are unloaded, yellowfin and bigeye are sorted as shown in Fig.1. In category "e" and "f", bigeye and yellowfin are still mixed.

Fig.1 Sorting category at Yaizu

	Yellowfin	Bigeye	Mixture
Over 10kg	a	c	
Over 2.5kg	b	d	
Over 1.5kg			e
Under 1.5kg			f

Each cage with fish is scaled and volume is summed up under each category. In case of category "e" and "f", coefficient, which is a mixture rate of bigeye that derived from past seasonal sample surveys by Japanese scientists, is used respectively to get the volume of bigeye. Therefore, bigeye landed volume is calculated as follows:

Actual landed volume of bigeye =

volume "c" + volume "d" + (volume "e" x coefficient (e)) + (volume "f" x coefficient (f))

3. Results of monitoring

(1) Number of landings by month and port

From 1st of February* to 31th of October, 2009, Japanese Purse seiners conducted 197 landing operations, so 197 port monitoring were implemented in total. Among them, 123 landings (62%) were at Yaizu, followed by 38 at Makurazaki and 35 at Yamagawa. No landing was observed at Onagawa. In average, it takes 3 days to land all fish – around 800t - from fish hold.

* Since the CMM 2008-01 entered into force in February 2009, the control of landing will cover one year from February 1, 2009 to January 31, 2010.

Fig.2 Number of landings by month and port

	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Total
Onagawa	0	0	0	0	0	0	0	0	0	**0**
Ishinomaki	0	0	0	0	1	0	0	0	0	**1**
Yaizu	15	14	13	16	13	13	13	13	13	**123**
Makurazaki	4	5	4	5	4	4	3	5	4	**38**
Yamagawa	3	5	5	5	1	2	4	5	5	**35**
Total	**22**	**24**	**22**	**26**	**19**	**19**	**20**	**23**	**22**	**197**

(2) Landed volume of bigeye (confirmed)

By the end of 31th of October, landed and confirmed volume of bigeye was 3,556 tons. This accounts for 60% of catch quota (5,971 tons).

Fig.4 Landed volume of bigeye (confirmed)

	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
Volume	252t	254t	308t	442t	287t	307t	429t	614t	662t
Accumulated	252t	506t	814t	1,256t	1,543t	1,850t	2,280t	2,894t	3,556t
% of Quota	4.2%	8.5%	13.6%	21.0%	25.8%	31.0%	38.2%	48.3%	60%

(4) Gaps between reported and landed volume of bigeye

By the end of September, accumulated figure of bigeye from logsheets was 1,854tons, while that of actual landed volume was 2,894t. This means that volume reported in logsheets is 36% lower than actual landed volume.

Fig.5 Gaps between reported and landed volume of bigeye

		Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
Reported (a)		104t	126t	187t	227t	355t	202t	198t	455t※	
	(Accumulated)	104t	230t	417t	644t	999t	1,201t	1,398t	1,854t	
Landed (b)		252t	254t	308t	442t	287t	307t	429t	614t	662t
	(Accumulated)	252t	506t	814t	1,256t	1,543t	1,850t	2,280t	2,894t	3,556t
Gap (a/b %)		41%	50%	61%	51%	124%	66%	46%	74%	
	(Accumulated)	41%	45%	51%	51%	65%	65%	61%	64%	

※not all reported yet

For forty one (41) trips, observers were onboard. Gap with observer seems smaller than that without observer while it is premature to conclude difference due to the smaller sample size. However, it suggests that observer presence onboard may improve but cannot solve the problem completely.

Fig.6 Difference between with/without observer

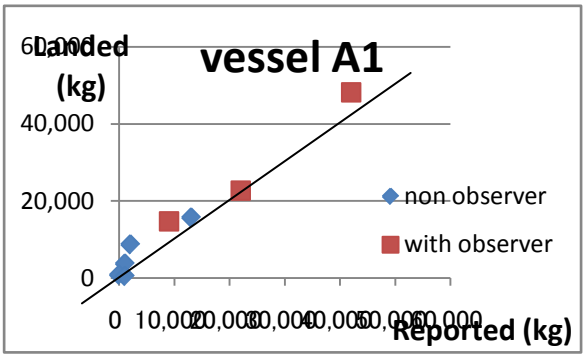
	logbook data	Landed	Gap (%)
non-observer	1,224t	2,077t	59%
with observer	630t	817t	77%
Total	1,853t	2,894t	64%

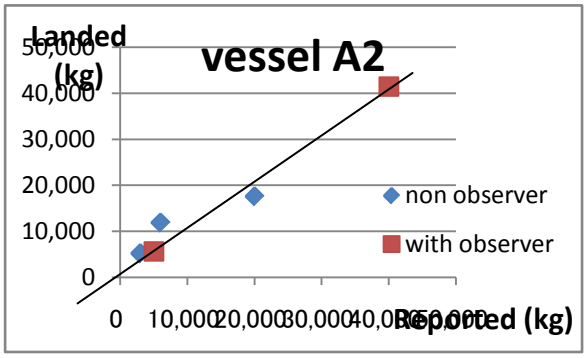
(5) Analysis by vessel basis

"Accuracy in reporting on board" differs substantially by vessel, and two actual examples are shown below.

(i) Type A

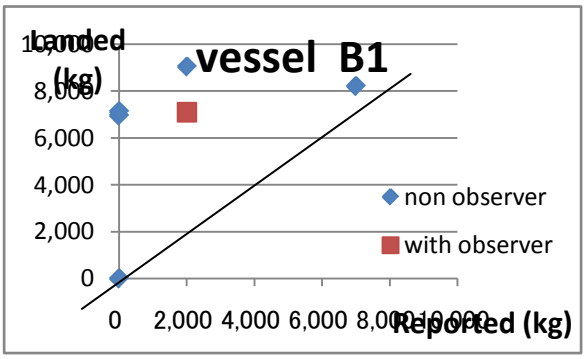
Each reported volume generally coincide confirmed landed volume.

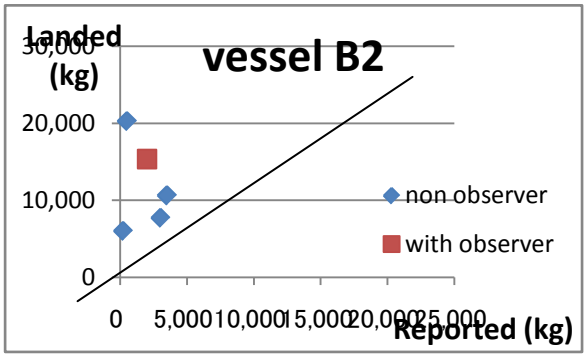




(ii) Type B

Each reported volume is far from the actual landed volume, and no correlation is observed between two figures, regardless of observer's presence.





In order to reduce reporting gaps, it also seems important to understand the reporting pattern of respective fishing master.

4. Conclusion and suggestions

(1) Port monitoring was conducted covering all the landing. By the end of October, setting catch limit functions well; actual landed volume was about 60% of the catch limit.

(2) Besides, the monitoring provides an important fact:
(i) huge gaps are observed between reported volume from logsheet and actual volume monitored;
(ii) these gaps happen even when observers are onboard; and
(iii) pattern of gaps differs by vessel

It suggests the difficulty to estimate bycatch volume accurately through onboard survey alone and the advantage of port monitoring to obtain more precise data.

(3) Therefore, Japan requests each CCM, within its ports unloading operations are conducted, to implement port monitoring and report its results to the WCPFC in accordance with paragraph 43, CMM 2008-01.

(4) Further, considering the fact that more than 700,000 tons of purse seine catch in the WCPO are transshipped and landed at Bangkok every year, it seems appropriate for the Commission to consider and establish some mechanisms with canneries in Thailand to access their sorted data by species and size and, if required, provide technical assistance to enhance sorting skills there.

(5) This suggestion corresponds to the recommendations from SC5 and TCC5 as follows:

(Paragraph 329 of SC5 Summary Report)
329. Some CCMs recommended that the trials/data comparisons suggested by the SPC during the SWG meetings, should be included in the recommendation to the Commission. In particular, it was proposed that analysis linking the cannery data with the sample estimates arising from the observer grab/spill data was necessary, specifically to compare observer grab and spill data to port sampling for that specific trip. It was agreed to reflect this in the recommendation.

(Paragraph 346 of TCC5 Summary Report)
346. Japan presented two papers regarding port sampling and the canneries in Thailand (WCPFC-TCC5-2009/IP-06 and WCPFC-TCC5-2009/IP-07). TCC5 recommended that a full range of monitoring measures including consideration of Thai and other canneries needed to be taken into account in the future.

Attachment A

An Example of Port Sampling Activity for Purse Seine Catch at a Japanese Port

In accordance with paragraph 15, CMM 2008-01, Fisheries Agency of Japan (FAJ) started the 100% monitoring program on unloading by purse seiners at Japanese ports in February 2009.

Its preliminary results were reported to TCC5 (WCPFC-TCC5-2009/DP-06) and WCPFC6 (WCPFC6-2009/DP).

For ensuring quality of monitoring, port sampling is also critical, in particular getting accurate mixing rate of bigeye in so-called yellowfin catch. In this context, Japan has also been implementing port sampling at Japanese ports.

This paper briefly shows how port sampling is carried out.

The number of annual samplings is about 25 in average: more than 10% coverage (25/220). At one sampling, about 4,500kg fish are sorted out and measured in weight and length:

Total fish weight sampled = 500kg/net X 3 times/fish hold X 3 fish holds.

Procedure for samplings: see next page

Picture 1

1. Fish are offloaded with a net.

2. One net can carry about 500kg of fish.

Picture 2

1. Fish are carried with a metal box to a flat space for sampling.

Picture 3

1. Fish are loaded on the ground for sorting and other sampling activities.

Picture 4

1. First process is sorting: skipjack and other tuna (YF and BT)

2. Usually, ten people are engaged in the sorting procedure.

Picture 5

1. Skipjack is a dominant species

Picture 6

1. Yellowfin and Bigeye are sorted out from Skipjack.

Picture 7
1. Then, Bigeye is sorted out from Yellowfin.
2. Because of the similarity, this process requires knowledge and experience.
3. Top and middle fish are Yellowfin, and bottom is Bigeye: Yellowfin is relatively slender than Bigeye.

Picture 8

1. If fish condition is good, it is easier to identify species.

2. This is Yellowfin: white dot lines are character of Yellowfin.

Picture 9

1. This is Bigeye.

2. White lines on body is solid, and space between lines are wider than that of Yellowfin.

Picture 10

1. If fish condition is bad and body lines are not identified, only clue is body shape.

2. These two fish are Bigeye: plumper than Yellowfin.

Picture 11

1. All of the individual fish (Skipjack, Yellowfin and Bigeye) are measured in length in the order of 0.1 cm.

2. Two persons consist of one team: measuring and recording.

Picture 12

1. All of the individual Yellowfin and Bigeye are weighed in the order of 0.01kg.

2. The picture is Yellowfin: 62.6cm and 5.78kg

Picture 13

1. In case of Skipjack, 20 individual fish are weighted respectively, and rest of fish is weighed together with a tray.

Attachment B

Report of field surveys on unloading from a cargo vessel and sorting process at the site of canneries at Bangkok

Summary

- Field survey was conducted at landing site and two canneries in Bangkok on 16/17 August.
- Sorting and weighing practices by species/size are not implemented in unloading operations at port, but at each cannery before fish goes into cold storage of the company.
- Each cannery compiles those size/species data with associated information such as name of the fishing vessel and carrier vessels, date of transshipped and landed.
- On the other side, both canneries acknowledged the difficulty in selecting juvenile bigeye from yellowfin and the possibility substantial amount of bigeye is overlooked and counted as yellowfin.
- At least two major canneries, those products account for about 60% of total export of Thailand's canned tuna, seem to be ready to cooperate for data provision if any kind of formal arrangement is established with WCPFC.

Suggestions

- The Commission should consider establishing cooperative mechanisms with Thailand canneries in (a) data provision, (b) capacity building for increase sorting accuracy, and (d) endorsement of those data.
- For this purpose, WCPFC should:
    1. Request canneries for data provision;
    2. Appoint surveyors to verify data;
    3. Establish cost bearing scheme among players to support data provision;
    4. Request SC to implement sampling surveys to obtain mixture rate.

Unloading, sorting and weighing process in Bangkok

Picture 1

1. Fish are unloaded directly to a truck from a carrier.

2. At this stage, no sorting or weighing by species is conducted.

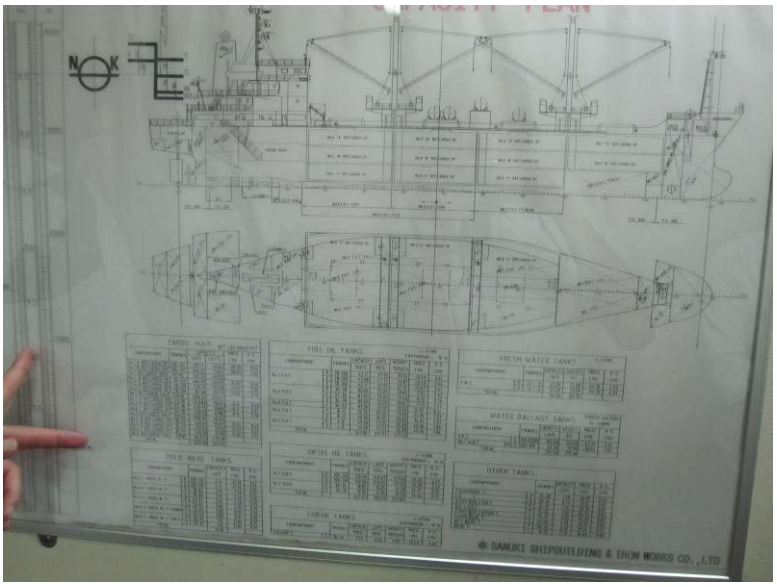
Picture 2

1. Same practice observed from the carrier.

2. One truck can carry about 18 tons of fish.

Picture 3

1. Fish are carried from hold to a truck with a net.
2. Since one net can carry about 2 tons of fish, a truck is filled by 9-net operation. (2 tons/net x 9 nets = 18 tons).



3. It takes 40 to 60 minutes for the 9-net operation.

Picture 4

1. Chart of the carrier.

2. There are 11 fish holds (3-3-3-2) and 4 hatches and 2 cranes.

3. Capacity of each hold is about 300 tons. Total capacity is more than 3,000 tons.

Picture 5

1. Labor in a fish hold.

2. Workers carry fish to the net. How tough the labor depends on the size composition of fish. If fish are bigger, labor is tougher.
3. Temperature in the hold is minus 18 degree.

Picture 6

1. When enough fish are piled, the crane lifts the net.

Picture 7

1. Fish in the hold.

2. Variety of size and species are observed.

Picture 8

Yellowfin? Bigeye? Bigeye? Bigeye?

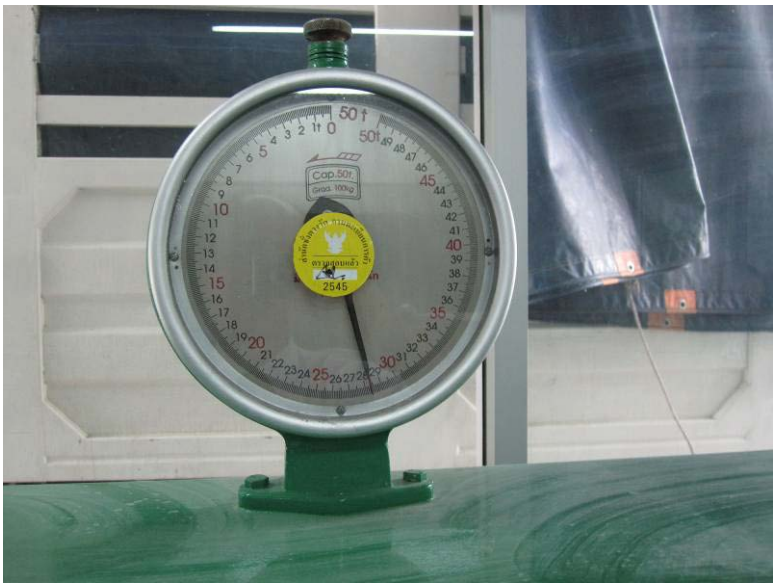
Picture 9

1. Skipjack and (?)

(Note: The young man right side is looking for a partner, not fish!)

Picture 10

1. Every truck with full of fish moves to the truck scaling office.
2. Scaling is carried out by TJ land Co. Ltd authorized by the Thai Government.
3. Scaled figure is compiled for government statistics. (Total weight only, no specification by species)
4. After scaling, the truck goes to a cannery contracted.



Picture11

1. Scaling result above is 28.4 tons.

2. Actual fish weight is derived by subtracting track weight scaled in advance.

Picture 12

1. When the truck arrives at the cannery, fish are sorted by species and size, and scaled.
2. Pictures from 12 to 21 are examples of Company A.
3. Specific procedures differ in companies.

Picture 13

1. Fish are offloaded to the sorting line.

Picture 14

1. Fish are moved to the conveyor for sorting and scaling by species and size.

2. Workers pick up fish by size and species and throw them into suitable metal boxes.

Picture 15

1. End of the conveyor, the total length is about 10m.
2. Since sorting is carried out by truck basis (max volume 18 t), huge facilities are not required.

Picture 16

1. Numbers applied to sorting of Yellowfin and Bigeye.

2. Left column (for example, 0-1.4) indicate weight, and right column indicate designated numbers corresponding to the weight.

Pictures 17

1. Continued numbers from Picture 16.

Picture 18

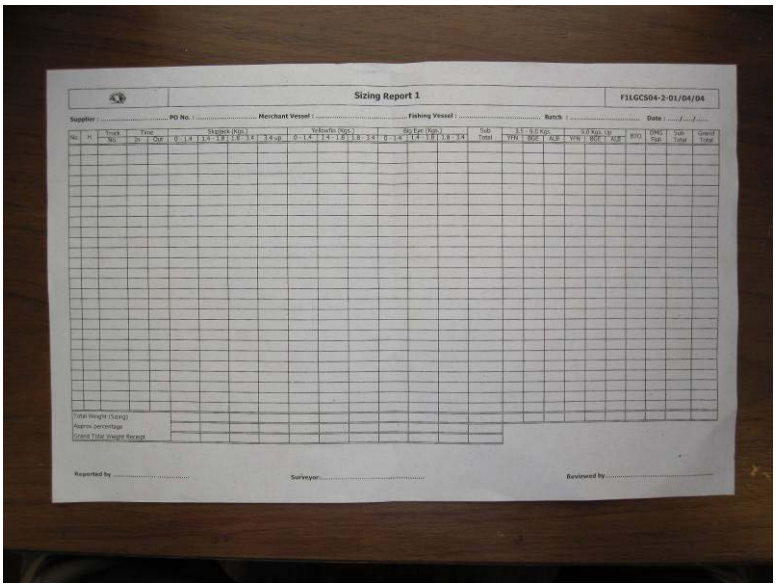
1. Bar-code tag sealed backside of can.
2. This tag indicate Yellowfin No.2 (1.4 – 1.8 kg)
3. Individual words right side indicate information of Purse Seiner that caught fish.

Picture 19

1. Fish in the can of the Picture 18.
2. Very difficult to say “no bigeye in the can”

Picture 20

1. Yellowfin in other can.
2. Workers told us “there is not bigeye, today.”
3. After scaling, each can is carried to the frozen storage.

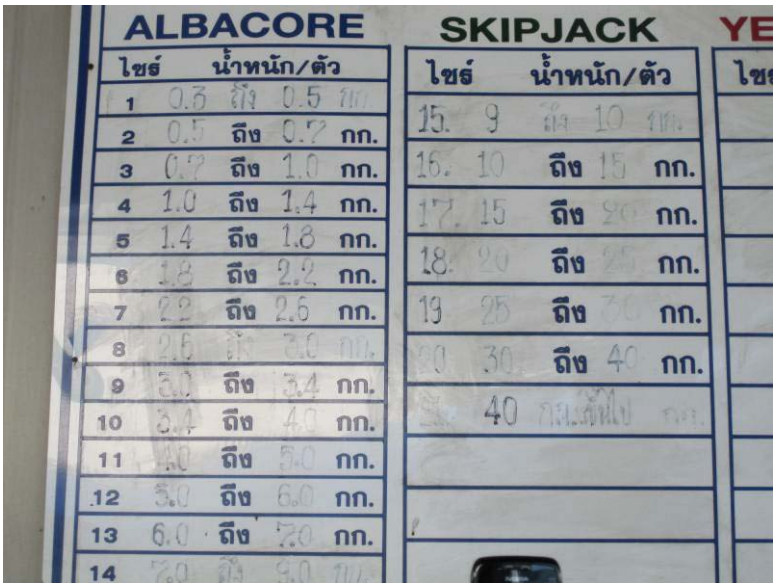


Picture 21

1. Scaled figures are compiled in the Sizing Report, which required weight by species and size, name of supplier, name of merchant vessel, and date of sorting.
2. Each cannery has its own system to record those information.

Picture 22

1. Following 5 pictures are examples of the Company B.
2. When visited, bigeye more than 10kg were sorted and scaled.
3. Basic procedures are as same as those in the Company A.
4. However, sorting classification and shape of cage are different.



Picture 23

1. Size classification commonly applied to all fish: 21 categories.

Picture 24

1. Scaling
2. Scaled weight is 872.5kg. Weight of the cage is 125kg. Net fish weight is 647kg.

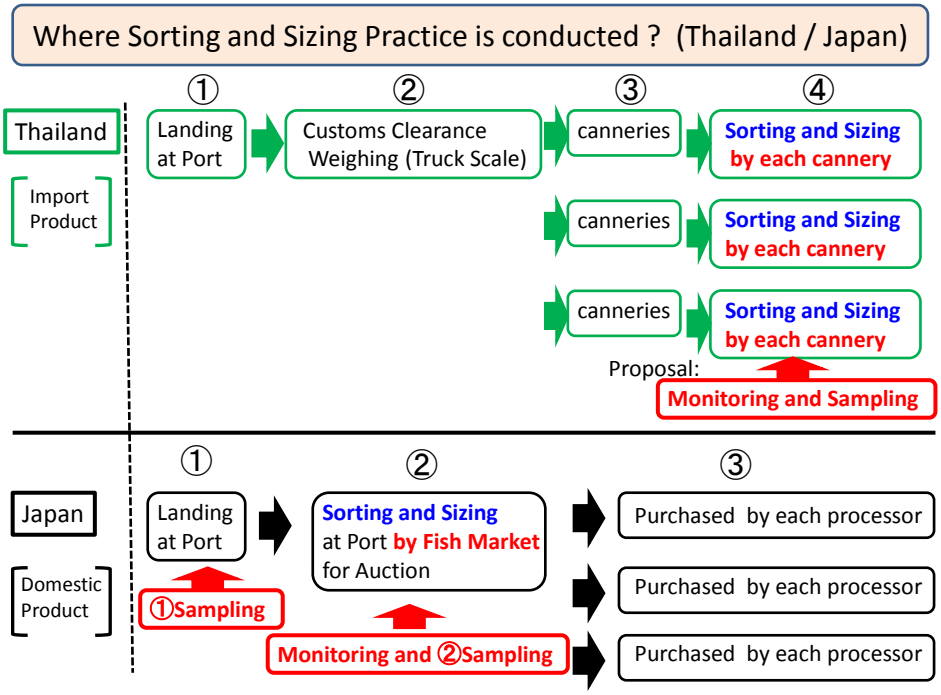
Picture 25

1. Tag for cage.
2. “9up” in red figure indicates fish bigger than 9kg.
3. BEIT981-PGin blue print is broken-down to:”BE” = bigeye,”IT” = Itochu (merchant),”981” = year 09, month 8, 1st shipment in the month.

Picture 26

1. After scaling, each cage is stored in frozen storage.

Attachment C



Attachment

FISHERIES AGENCY
MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES, GOVERNMENT OF JAPAN
2-1, 1-Chome, Kasumigaseki, Chiyoda-ku, Tokyo 100-8907, Japan TEL: +81-3-3502-8204

January 30, 2009

Andrew Wright,
Executive Director,
Western and Central Pacific Fisheries Commission,
PO Box 2356,
Kolonia, Pohnpei State 96941
Federated States of Micronesia

Dear Mr. Wright,

In accordance with paragraph 16 of Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean (CMM 2008-01), Japan herein submits the Bigeye Tuna Management Plan for 2009 to reduce the bigeye catch of its purse seine fishery in the area between 20N and 20S by a minimum of 10 percent in 2009 relative to 2001-2004 average level.

Sincerely,

Masanori Miyahara
Senior Counselor
Fisheries Agency of Japan

Bigeye Tuna Management Plan for 2009
(Intended Management Measures and Monitoring Program)

Japan

In accordance with paragraph 16 of Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean (CMM 2008-01), Japan implements measures to reduce the bigeye catch of its purse seine fishery in the area between 20N and 20S by a minimum of 10 percent in 2009 relative to 2001-2004 average level.

1. Management measures

(1) Setting catch limit

Fisheries Agency of Japan (FAJ) has set the catch limit of bigeye tuna for its purse seine fishing vessels (hereinafter referred to as "JPS") in the area bounded between 20N and 20S at 5,992MT.

(2) Monitoring of catch limit

To ensure the catch limit, when amount of bigeye tuna landed reaches 90% of the catch limit, FAJ requires JPS to make daily reporting of bigeye catch. Taking account of catch trend, FAJ directs a specific date for a closure of JPS fishing operation in the management area.

2. Specific monitoring measures

(1) Observers

In accordance with paragraph 29, CMM08-01, FAJ ensures observers from the Regional Observer Program to be boarded JPS at least 20% of all the fishing trips in the management area. FAJ is currently in preparation for these observers from island countries. These observers monitor the entire fishing trips of JPS, including upon returning to port so that the observer can view the port monitoring for each trip.

(2) Monitoring of JPS location

FAJ closely monitors locations of JPS by the established Vessel Monitoring System on a near real-time basis.

(3) Port monitoring

FAJ ensures 100% coverage of the landing inspection by inspectors. For this purpose, FAJ has designated the following five (5) ports as JPS landing ports. Any

landings by JPS at other ports are prohibited, unless additionally designated by FAJ.

- The port of Yaizu, Shizuoka prefecture, Japan
- The port of Makurazaki, Kagoshima prefecture, Japan
- The port of Yamagawa, Kagoshima prefecture, Japan
- The port of Ishinomaki, Miyagi prefecture, Japan
- The port of Onagawa, Miyagi prefecture, Japan

The inspectors conduct landing inspection for all the landings by JPS to check the actual amount of bigeye tuna. Observers from the Regional Observer Program may observe the landing and inspection.

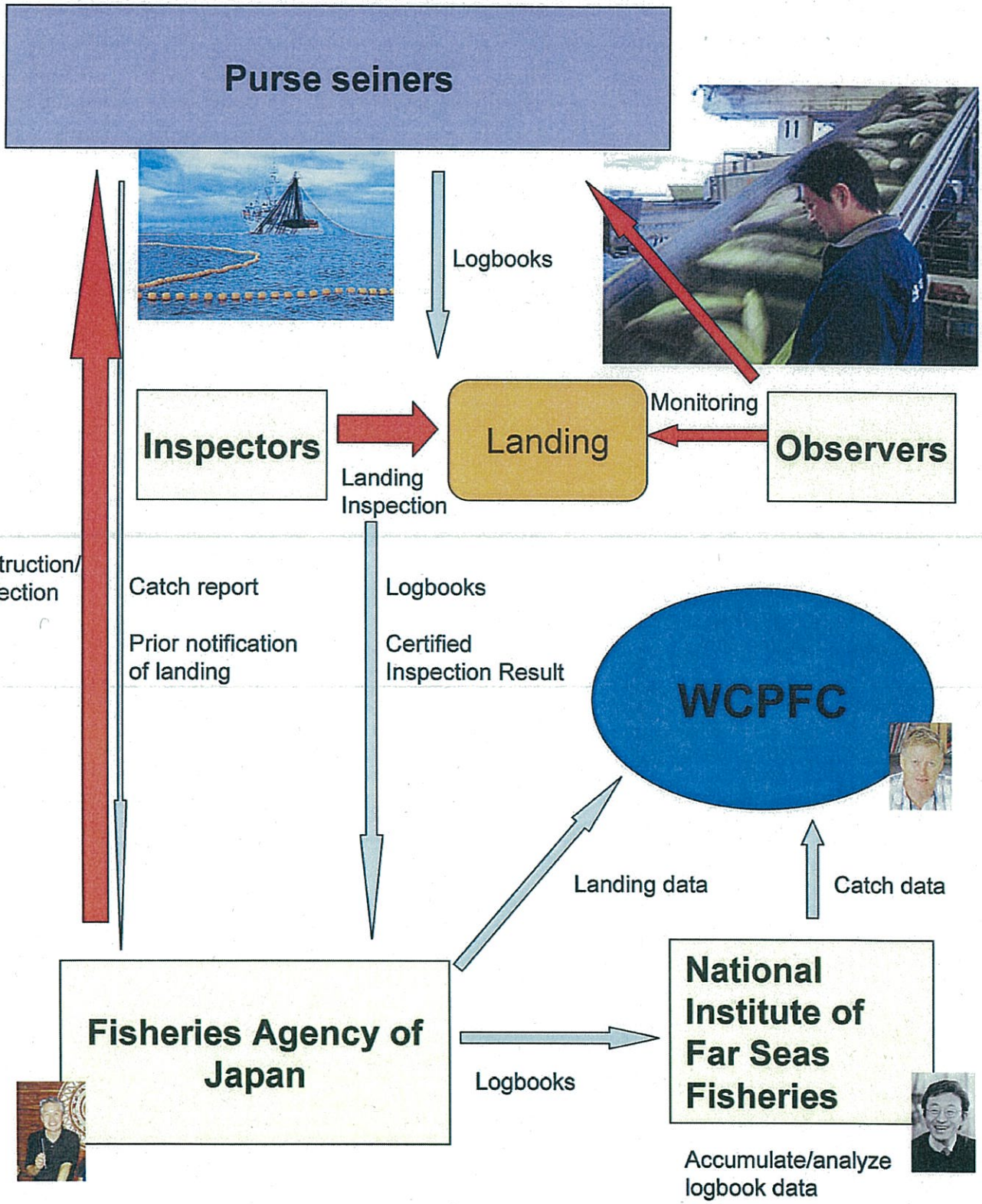
(4) Landing data

Inspectors report FAJ of certified inspection result immediately after the completion of the landing. FAJ provides data from the landing inspection for each trip by each vessel to the WCPFC Secretariat within 30 days of the completion of the landing.

3. Development of methods and techniques/ to reduce bigeye catch

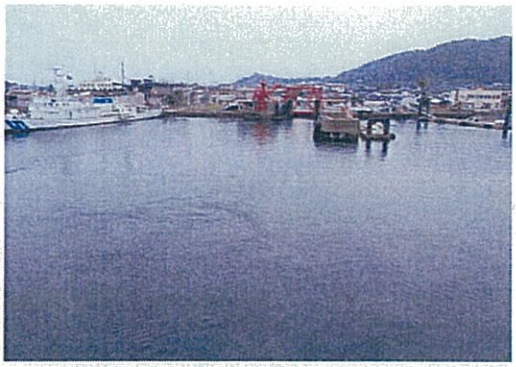
FAJ, scientists and owners/captains of JPS periodically hold consultations to review status of bigeye catch for each vessel and explore mitigation measures for bigeye tuna.

Flowchart of catch reporting and landing inspection



Designated Landing Ports

Onagawa Port



Yamagawa Port

Ishinomaki Port

Makurazaki Port

Yaizu Port