

IUMI 2017
TOKYO



Tsunami Impact on the Fishing Industry

Koji Okumura
Underwriter, Munich Re



Agenda



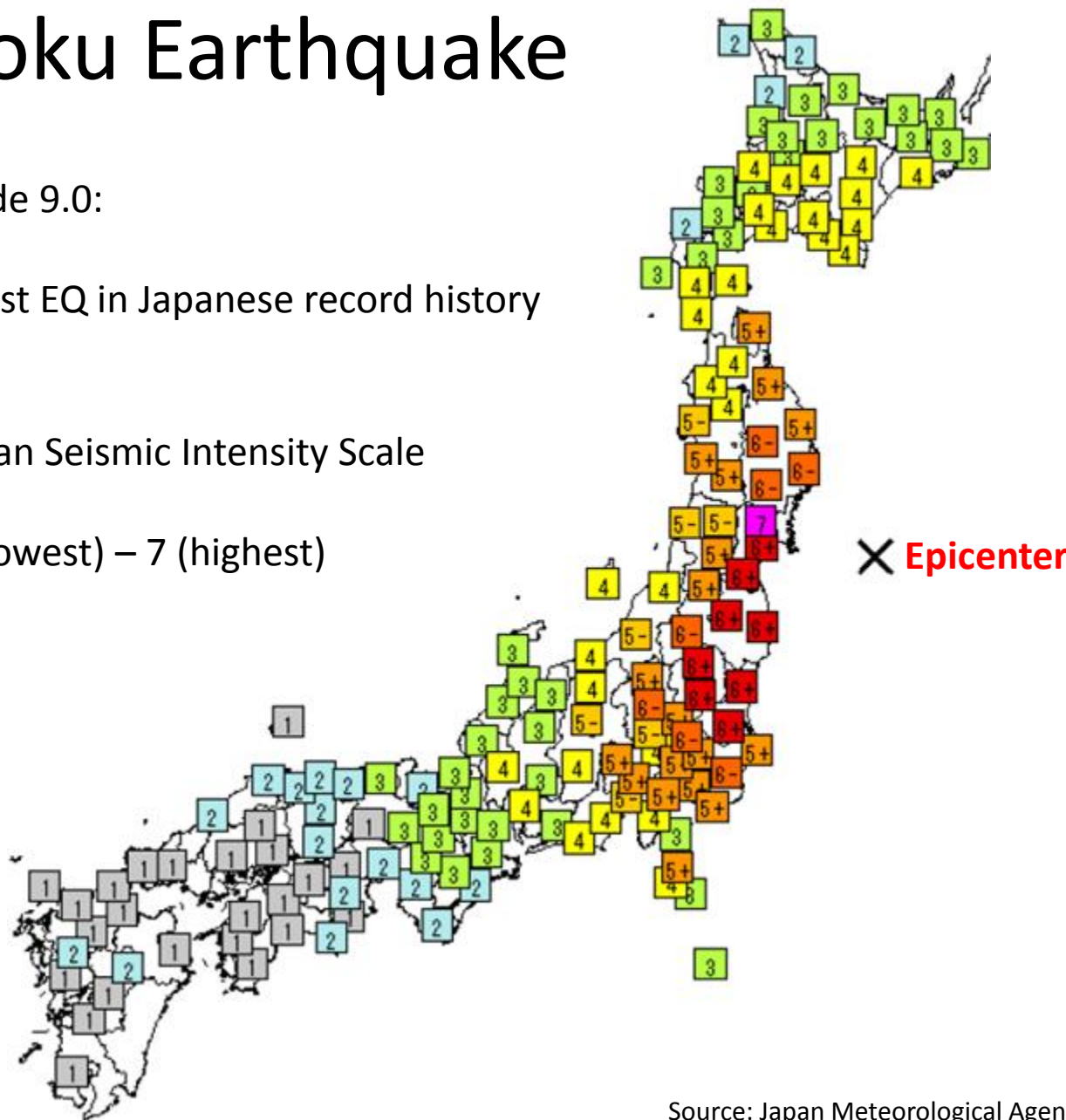
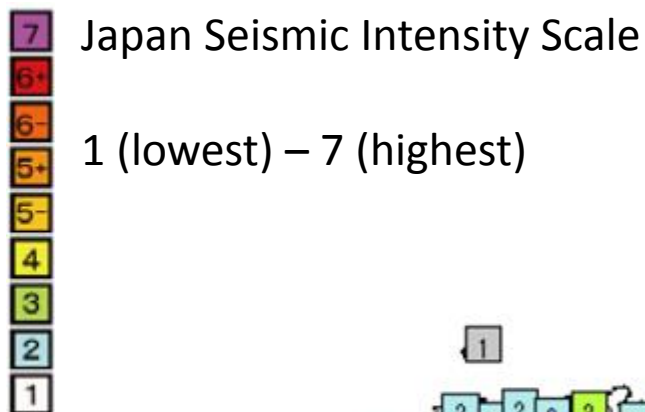
- Damage from Tohoku EQ/Tsunami
- Recovery of Fishing Industries
- Fishing Vessel Insurance
- Challenges, Efforts, and Risk Management
- Conclusion

Damage from Tohoku Earthquake in 2011

Tohoku Earthquake

Magnitude 9.0:

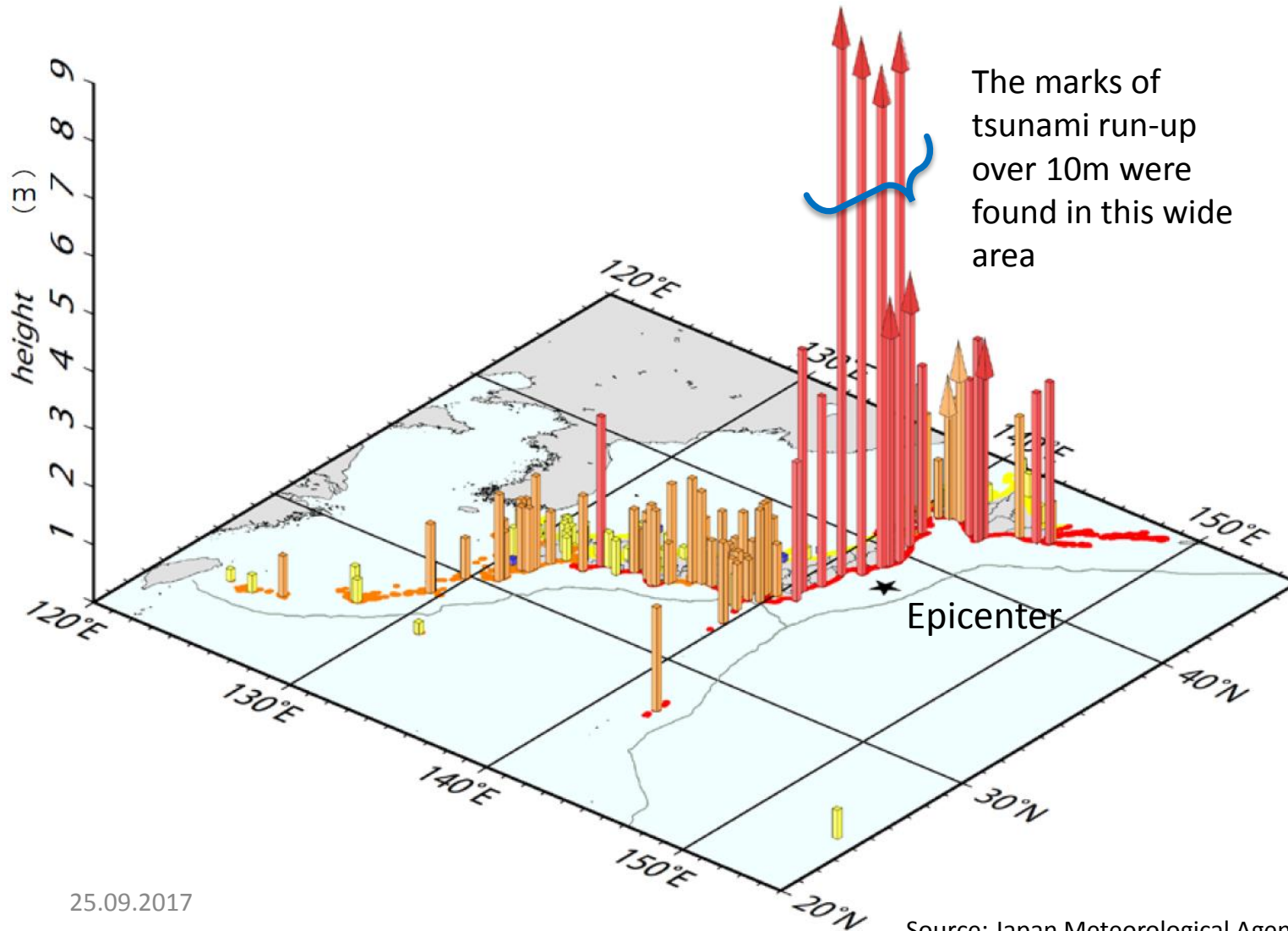
The largest EQ in Japanese record history



Height of the Tsunami



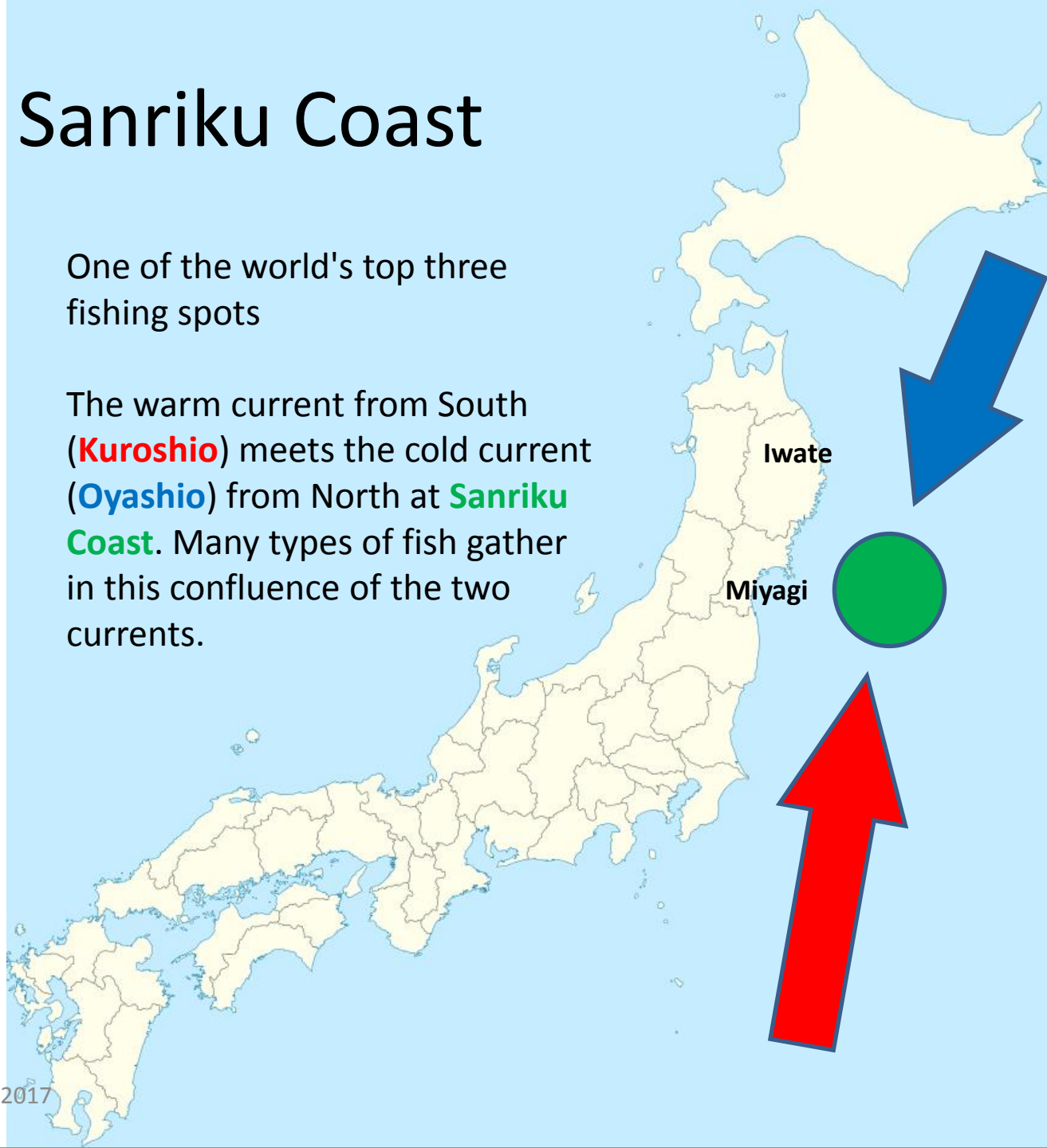
2017 TOKYO
September 17-20



The Sanriku Coast

One of the world's top three fishing spots

The warm current from South (**Kuroshio**) meets the cold current (**Oyashio**) from North at **Sanriku Coast**. Many types of fish gather in this confluence of the two currents.



Damages on Fishery Industry

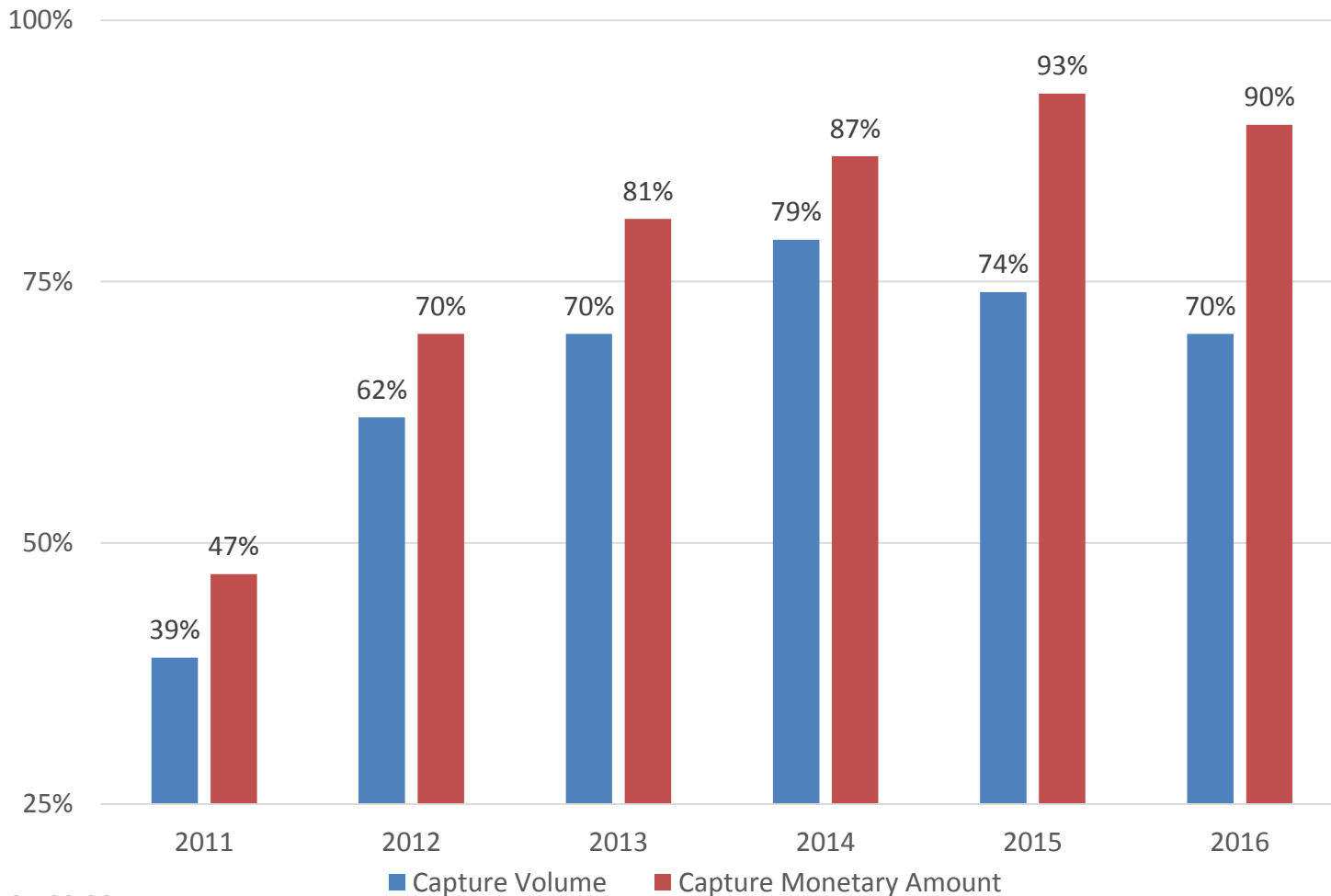
99.3% of the damage are concentrated on 7 provinces on the east coast.

Major Damage	No of Damaged Items	Amount (USD million)
Fishing Vessels	28,612 (vessels)	2,293
Fishing Ports and Facilities (ports)	319 (ports)	10,359
Acquaculture Facility		929
Acquaculture Stock		751
Common Facilities	1,725 (facilities)	1,572
	Total	15,904

Recovery of Fishing Industry

Recovery of Fish Capture Volume / Amount

% of Volume / Monetary Amount before Tohoku EQ in 2011

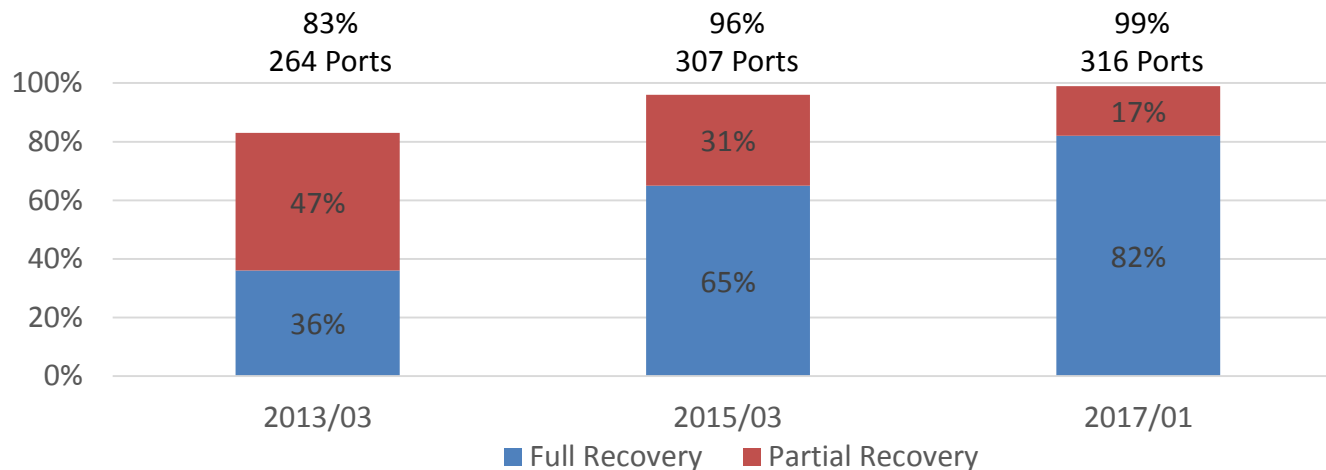


25.09.2017

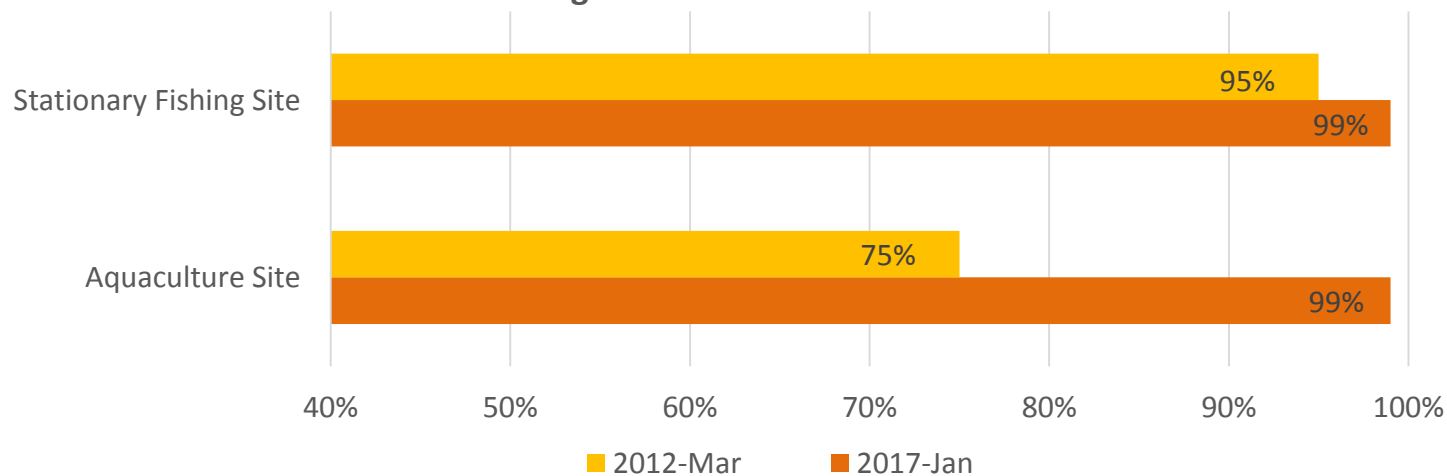
Source: White Paper on Fisheries 2016 (MAFF)

Recovery of Fishing Ports / Wreck Removal

Number of Ports for Landing Quay Function

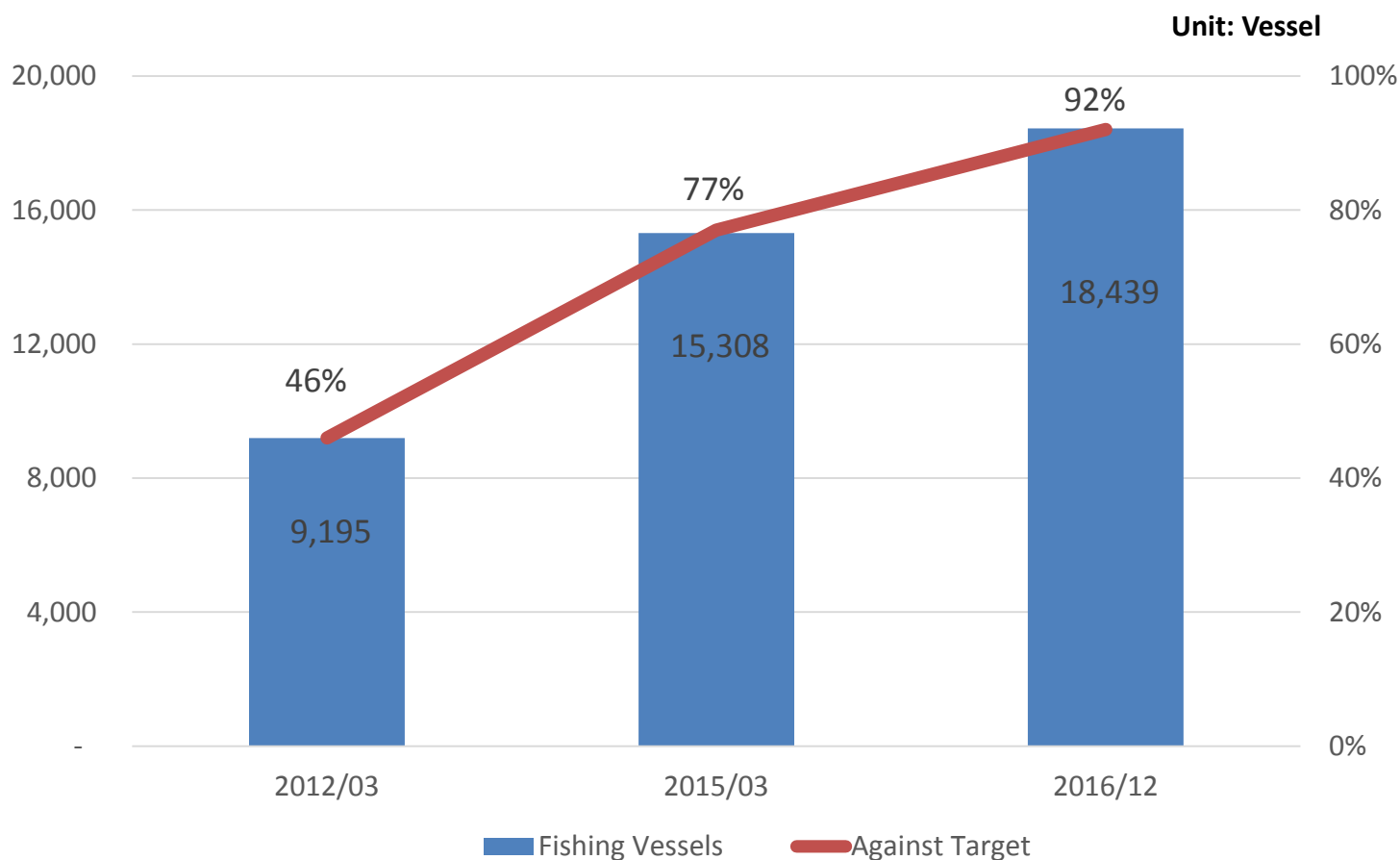


Progress of Wreck Removal



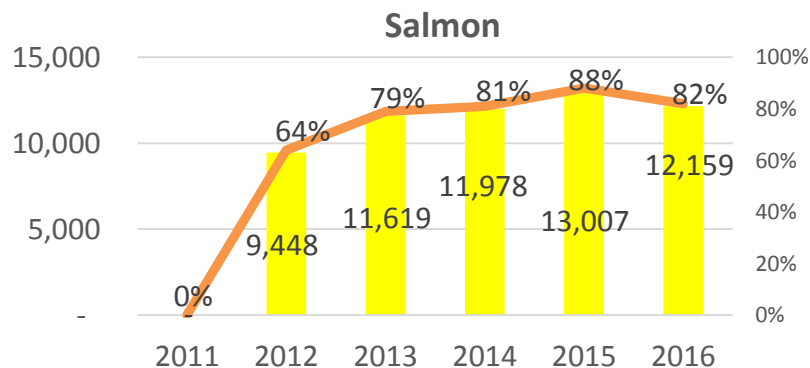
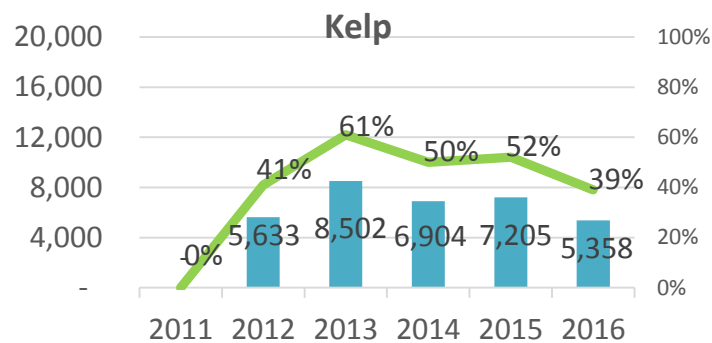
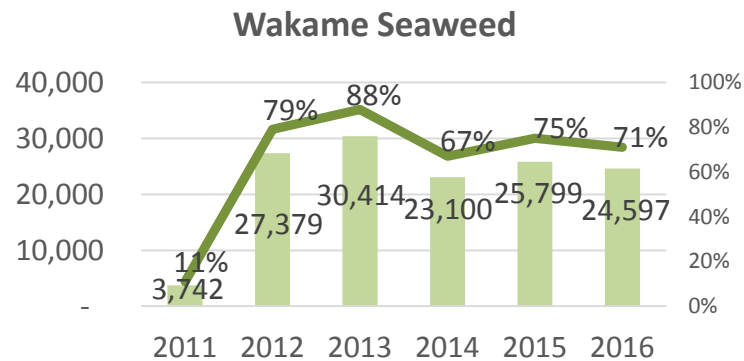
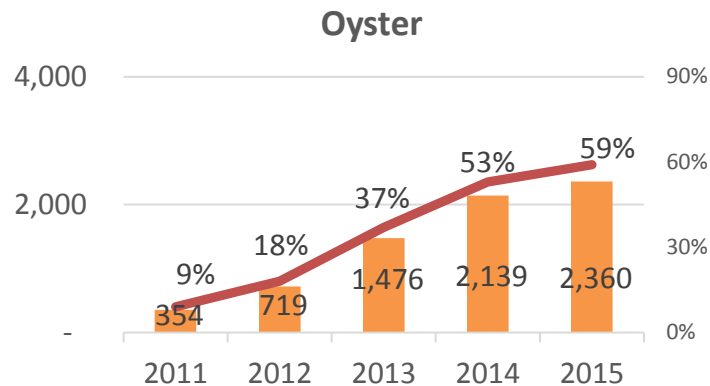
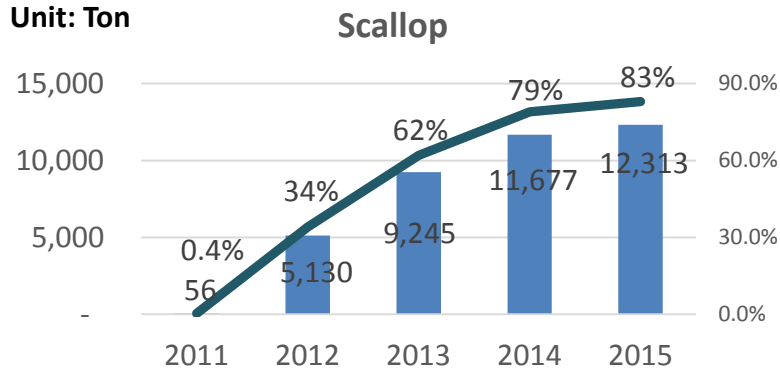
The Number of Recovered Fishing Vessels

About 29,000 fishing vessels were struck and damaged by Tsunami and EQ in 2011. The recovery target was set as 20,000 vessels and % below is against the target.



Aquaculture Products:

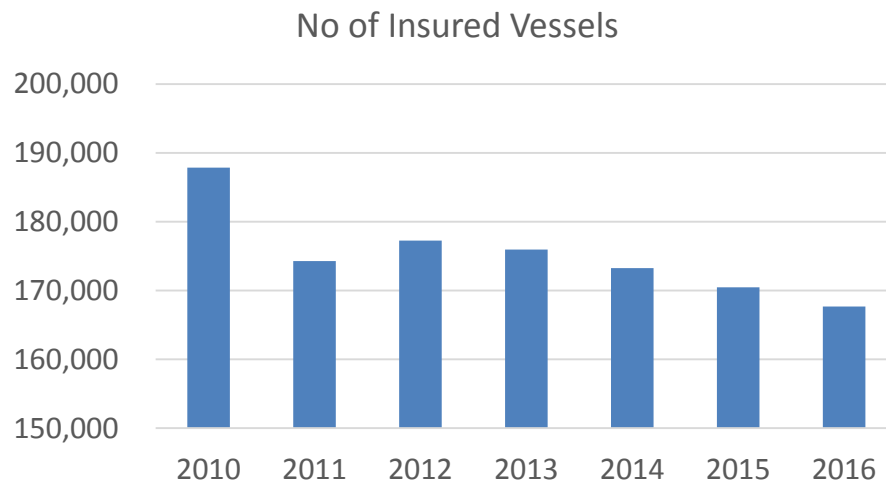
Unit: Ton



Fishing Vessel Insurance

Fishing Vessel Insurance System

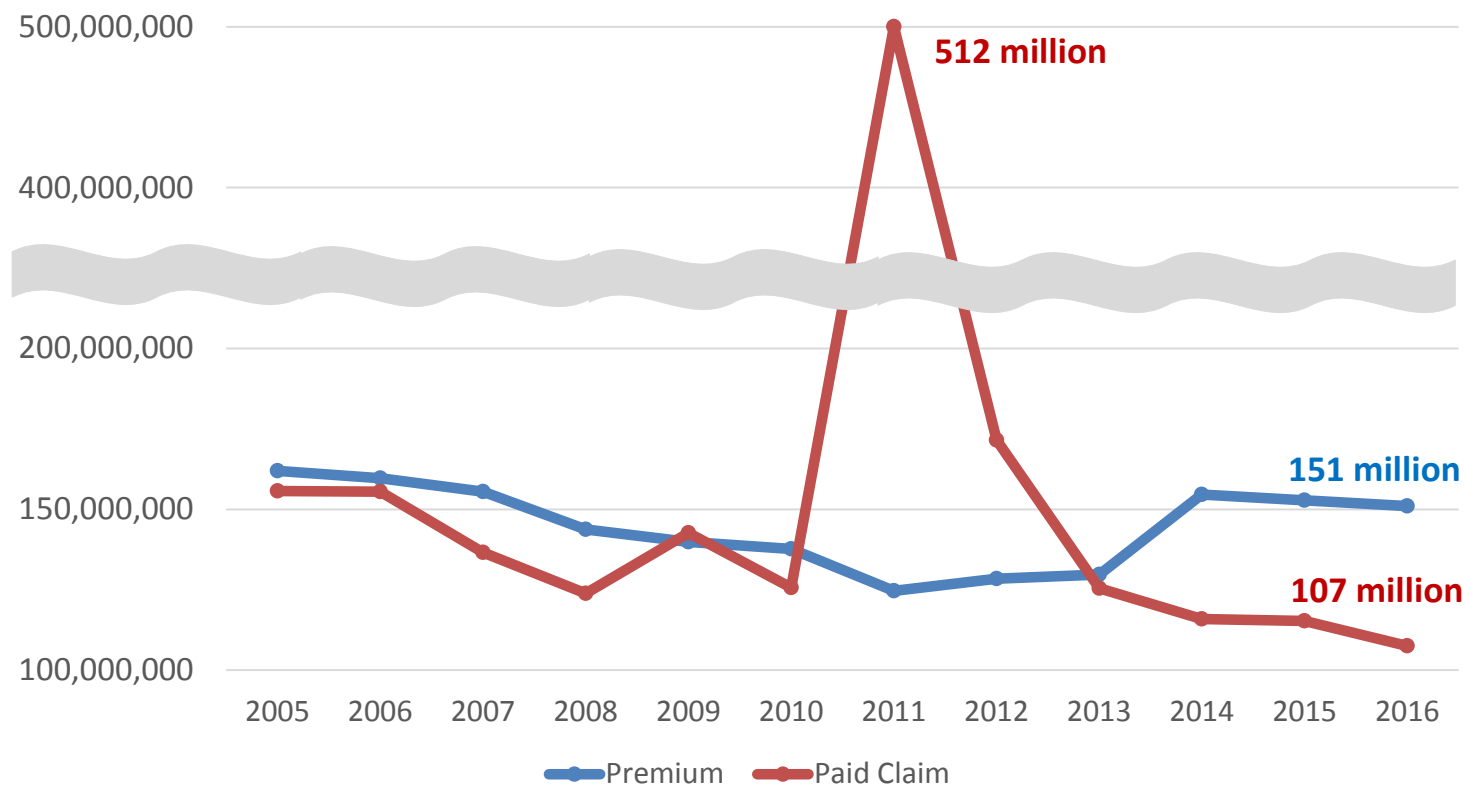
- Fishing Vessel Insurance Association (Nihon Gyosen Hoken Kumiai) insures majority of the fishing vessels in Japan. It covers fishing vessels up to 1,000 ton.
- It's mutual insurance and reinsured by government for catastrophic losses.
- 167,111 insured fishing vessels in 2016.
- Coverage of Hull & Machinery (Total Loss, Partial Loss, Rescue Fee) and War. P&I coverage is available as a separate policy.



Fishing Vessel Insurance: Historical Result

Premium increase in 2014 was due mainly to review of premium rate after the catastrophic loss in 2011. The review is done every 3 years.

CCY: USD (JPY 111.89 = 1USD: Average ROE of last 2 years)



Challenges, Efforts and Risk Management

Challenges Fishing Industry Facing

- Aging and declining number of fishermen
 - Average age of fishermen is 56.2
 - The number of fishermen: 222,000 in 2008 to 160,000 in 2016.
- Declining Consumption of Fish
 - Declining domestic fish consumption. Less than meat consumption per capita after 2011.
 - Competition with imported fish

Efforts

- Expansion of Direct Fishing Market
 - More direct selling by fishermen
 - Better control of price by fishermen.

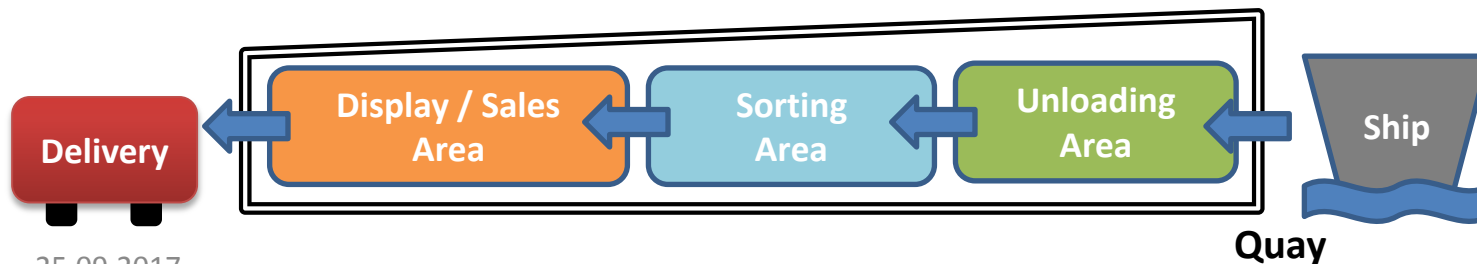
- Growing Aquaculture
 - Kindai Tuna, succeeding in the complete farming of Northern Blue Tuna, cultivating from egg to adult.

Efforts

- **Advanced Hygiene Management System:**

- Major ports in the struck areas are adopting Advanced Hygiene Management system. Use of auto sorting machine and belt conveyer, seawater cleanup system with UV and electrolysis, complete sterilization of gloves and boots, and tire of trucks. Use of electric folk lifts.
- Conduct HACCP (Hazard analysis and critical control points). More preventive approach than traditional approach to maintain high hygienic level in whole production and handling processes.

Whole Sale Fish Market Building



Risk Management against Tsunami

- Combination of breakwater and tide embankment
- Simulation and guideline
- Ground raising, relocation to high ground
- Auto / remote closure of water gates

Conclusion

- Tohoku EQ and Tsunami in 2011 made a big impact on Japanese fishing industry but making good progress in recovery
- Facing challenges
- New development with efforts
- Risk improvement measures towards Tsunami +

I thank you for your attention!

Koji Okumura

Underwriter, Marine

Munich Re

Email: Kokumura@munichre.com

Phone: +852-2536-6958

Web: www.munichre.com

Munich RE 