



## FISHERIES TRADE POLICY

### Fisheries aspects of the Trans-Pacific Partnership

The Trans-Pacific Partnership (TPP) is a major macro-regional free trade agreement that encompasses 12 countries on the Pacific rim: Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States and Vietnam. The text was agreed and released publicly on 5 October 2015 after seven years of negotiations. However, ratification is still subject to Congressional approval in the US and elsewhere and is thus far from a done-deal.

TPP and the parallel Trans-Atlantic Trade and Investment Partnership (TTIP is currently under negotiation between the EU and US) can be seen as reactions to the failure of negotiations at the WTO (see story below) and the growing power of China. The US government sees TPP and TTIP as companion agreements. In this sense, these two macro-regional FTAs can be seen as potentially reshaping spheres of economic and geo-political influence. And most of all, if both deals are ratified they will likely lay the basis for future rules in other trade agreements.

TPP contains several fisheries-related components.<sup>2</sup> The chapter on Environment contains commitments to maintain a basic marine capture fisheries management system based on international best practices. This is followed by rules that prohibit the provision of subsidies to boats that fish on overfished stocks or that engage in IUU, thereby providing a minimum ambition baseline for disciplines to fisheries subsidies, following the failure to achieve broader disciplines at the WTO. The Environment chapter also includes a range of measures such as monitoring, control, surveillance, compliance and enforcement that are designed to combat IUU fishing and unregulated transshipment practices.

The seafood market access aspects of TPP are potentially very significant for participating Members, as well as the fisheries industries, including in the tuna sector, more broadly. The deal is being 'sold' to the seafood industry in Canada and the US as providing market access opportunities in Malaysia, New Zealand and Vietnam which will all end immediately import tariffs on 100% of fish and fish products, and in Japan which will do so for 92.6% of products. While this tariff elimination is from a low base of a maximum applied tariff of 5% for New Zealand, it is a cut from 15% for Malaysia and Japan and from 34% for Vietnam. However, the Canada Fish, Food and Allied Workers Union has raised concerns that it is not yet clear whether the deal will benefit Canadian seafood workers.<sup>3</sup>

If TPP comes into force, Japan will eliminate immediately tariffs on canned tuna (currently 9.6%, but where Thailand already dominates and has duty free access) and on fresh and frozen skipjack and yellowfin (3.5%). The major exception to rapid tariff elimination is a phase out to zero over 11 years for all species of fresh and frozen Bluefin and Bigeye tuna (currently 3.5%), except for fresh Atlantic Bluefin which will phase out in 6 years.<sup>4</sup> The impact on Japan's tuna sashimi market will be limited because of the application of TPP rules of origin (RoO) which exclude fish caught by Japan's current major suppliers: Taiwan, Indonesia and South Korea. TPP RoO require that the fish is caught by a vessel registered, listed or recorded by a TPP partner country and entitled to fly its flag. However, there are concerns in Japan that FOC vessels from China and Taiwan will switch to TPP flags in order to access the Japanese market at reduced duty.

Vietnam is a potential major beneficiary of TPP in terms of enhanced access to markets for tuna, shrimp and squid,<sup>5</sup> including – *eventually* – the US canned tuna market. The US negotiated a phase-in over 10 years for canned tuna in oil (normally

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*If ratified, TPP will lay the basis for rules in other trade agreements*

35%) and in water (12.5% when over quota) where the duty will be reduced annually before hitting zero.<sup>6</sup> For Vietnam, this comes in parallel with duty free market access in its bilateral FTA with the EU for an annual quota of 11,500 mt.<sup>7</sup> Given eventual dual access to the EU and US canned tuna markets, Vietnam could become a major tuna processing player should it be able to procure RoO-compliant fish.

## Fisheries subsidies negotiations fail at WTO 10<sup>th</sup> Ministerial

Efforts to use the WTO Doha Round to eliminate subsidies to the fishing industry have long been stalemated. In the lead up to the 10<sup>th</sup> Ministerial Meeting of the WTO in December 2015, Members submitted a flurry of new proposals on rules to target fisheries subsidies. The proposals were notable in reflecting a dramatically reduced ambition in the scope of proposed disciplines. Over the period 2005-2014, negotiations focussed on three main topics: (i) scope of the prohibition of subsidies; (ii) special and differential treatment for developing countries; and, (iii) fisheries management conditionalities for non-prohibited subsidies. In the months leading up to the Ministerial, they narrowed to the following:

- improved transparency requirements for existing subsidy programmes;
- disciplines on subsidies to vessels that are fishing on overfished stocks or engaged in IUU fishing;
- a standstill on introducing new subsidies or maintenance of existing subsidies in these two narrow areas beyond a transition period.

In the new proposals, S&DT focusses on a threshold for reporting requirements and an extended transition period. This minimal S&DT reflects that the disciplines are extremely narrow and thus unlikely to have significant impact on the development aspirations of developing country fisheries.

There are at least two reasons for this dramatic reduction: first the minimum bar might represent the only way toward agreement following years of stalemate; and second, the proposals mirror agreements on fisheries subsidies adopted in the Environment Chapter of the Trans-Pacific Partnership Agreement (see above), and the United Nations Sustainable Development Goal #14 on the Oceans.<sup>8</sup>

Despite this reduced ambition, and parallel agreement at Nairobi on historically gridlocked debates including on agricultural export subsidies, Members failed to reach agreement on disciplines for fisheries subsidies. Reportedly, resistance emerged around three issues:<sup>9</sup>

- The chair's draft proposed to work towards completing negotiations within a specific timeframe – potentially two years, though this was bracketed – for prohibitions on subsidies linked to IUU and effort on stocks in an overfished condition. The EU bloc reportedly resisted this timeline.
- The chair's document included a provision that would have had members commit to a best endeavour standstill provision on new subsidies in prohibited areas. This provision was rejected by China.
- On transparency and reporting, the draft decision included specific fisheries subsidy programmes notification commitments under the Agreement on Subsidies and Countervailing Measures. It included details on format and accounted for members' resources and technical capacity, a key issue of debate in the lead up to the Ministerial. China and India reportedly struck out against the supplementary notifications, arguing that these did not constitute a development outcome because of their potential additional burden on poorer countries.

*TPP includes commitments on banning certain fisheries subsidies and combatting IUU*

*New seafood markets will open to TPP signatories, but the impact on Japan's tuna sashimi markets are likely to be minor*

*Eventual duty-free access to US canned tuna market may make Vietnam a more competitive tuna processor if it can comply with TPP rules of origin*



Following the failure, 28 WTO members, including Fiji, Papua New Guinea, Solomon Islands and Vanuatu released a ministerial statement pledging to reinvigorate WTO work in order to achieve ambitious and effective disciplines on fisheries subsidies.<sup>10</sup> However, the relevance of the WTO's multilateral work on fisheries subsidies is questionable given the difficulty in generating consensus around even a narrow scope of rules. Instead it seems that future rules in this area will be developed in other forums, such as the UN Sustainable Development Goals and the TPP on fisheries subsidies disciplines.

## TUNA ACCESS ARRANGEMENTS

### US Treaty remains fragile as vessel day price soars and skipjack prices plummet

As reported in a prior issue of *FFA Trade and Industry News*, the terms, conditions and longevity of the US Treaty have been in flux over the last several negotiations. In the most recent agreement, which was set to go into effect at the start of 2016, the Pacific Island Parties, the US State Department and the US fleet reached a one year interim arrangement that granted the US fleet 5,700 fishing days in PNA waters except for Kiribati. The agreement grants the US fleet 300 fishing days in Kiribati's waters and additional days in the Cook Islands, Fiji, Niue, Samoa, Tonga, and Vanuatu. The total price tag of the deal was US\$89.2 million.<sup>11</sup> The US fleet has since asked the PNA to reduce the allocation by almost 2,000 days, citing the fishing arrangement as unaffordable given falling fish prices.<sup>12</sup>

Pacific Island Parties have asked the US to respect the signed agreement, noting that in both of the last two years' negotiations the US demanded *more* days from the PNA pool than the PIPs had proposed. PNA Chair Eugene Pangelinan said that if the US does not pay what it agreed, the Pacific islands will face serious economic problems. PNG Fisheries Minister Mao Zeming noted that the arrangement was signed in good faith, was only in force for a one year period, and was not purely a fishing agreement but one that takes into account US national security interests in the region. He urged the US to be mindful of the implications of their request on the economies of Pacific Island states.<sup>13</sup> The Pacific Islands Forum Fisheries Agency, which administers the Treaty, announced that – as per the terms of the agreement – if the US defaulted on its first payment, due before 31<sup>st</sup> December, it will not issue licenses for 2016 until payment is forthcoming. FFA emphasised that most PIPs, particularly those who participate in the Vessel Day Scheme have finalized agreements with other vessels and flag States and have budgeted on projected revenue from the August Statement of Intent.<sup>14</sup> PNA CEO Tranform Aqorau welcomed FFA's position and taking a longer view, expressed confidence that a more flexible arrangement can be developed to sustain the long-running relationship between the US and the Pacific.<sup>15</sup> As this newsletter went to press, it is understood that the US have confirmed that they will not make the first payment, and as a result licences will not be issued in January.

Other fishing nations and fleets have taken the US fleet's move as an opportunity to highlight changing economics in the sector. For example, New Zealand also drew attention to the tension between high access fees and low fish prices.<sup>16</sup> In response to such conditions, and citing the US Treaty breakdown as motivation, the World Tuna Purse Seine Organization (WTPO) announced that its members will buy 20-30 percent fewer vessel days than they purchased in 2015. In their recent meeting, WTPO members blamed disproportionate access costs for making fishing economically unviable and called on policy makers to take action to reduce capacity.<sup>17</sup>

**New WTO fisheries subsidies proposals narrowed focus to transparency, overfished stocks and IUU fishing**

**At the WTO 10<sup>th</sup> Ministerial, Members failed to agree on fisheries subsidies disciplines.**

**Citing low fish prices, the US asks for reduction in vessel fishing days**



## FISHERIES MANAGEMENT

### Several FFA Member priorities met at a WCPFC12 otherwise stymied around tropical tuna measures<sup>18</sup>

From 3-8 December 2015, the Twelfth Regular Session of the Western and Central Pacific Fisheries Commission (WCPFC12) was held in Bali, Indonesia. Over 500 delegates attended, representing 25 Commission Members, 6 Participating Territories, 7 Cooperating Non-Members, 8 Inter-Governmental Observers and 22 NGO Observers. This was the first regular session under the new leadership of Ms. Rhea Moss-Christian (Chair) and Mr. Feleti Teo (Executive Director).

Three of FFA members' identified four top priorities were achieved at the meeting. First, WCPFC12 yielded adoption of a target reference point for skipjack of 50% of unfished spawning biomass, which is in line with current catch and effort levels. To reach consensus, FFA members and Japan compromised on language in the text of the measure to address Japan's concerns about range contraction and localized depletion, which they believe is negatively impacting on Japan's coastal skipjack tuna fishery. This outcome is a positive step forward for management of WCPO's skipjack resources and is also critical for PNA's MSC certification for free-school skipjack, which requires a target reference point for skipjack to be adopted as a condition of certification by end 2016.

Second, CMM 2014-06 tasked WCPFC12 to establish a formal framework (i.e. a work plan and indicative timeframes) for the development of harvest strategies for WCPO's key fisheries and stocks. While WCPFC12 adopted a work plan, given several concerns raised by China and Japan, some elements of the work plan that were not agreed upon will be carried forward for re-consideration at WCPFC13 (2016).

Third, a new two-year compliance monitoring measure – designed to assess the level of implementation and compliance of members – was adopted and will be independently reviewed at the end of 2017. Given the Charter Notification Scheme (CMM 2012-05) expired at the end of 2015, WCPFC12 agreed to extend the scheme for another three years with no changes to the existing arrangements (now CMM 2015-05).

FFA members' fourth priority area, a target reference point for albacore, was not achieved. Strong opposition was voiced by China and Chinese Taipei to FFA Members' proposal to establish an interim target reference point for South Pacific albacore of 45% of unfished spawning biomass. While the 2015 stock assessment for albacore indicates that stocks are still not biologically overfished, FFA members have called for strengthened best practice management which will not only maintain the biological health of the fishery, but economic viability as well. A number of FFA members have domestic South Pacific albacore longline industries which have suffered significantly over the past several years due to competition from a large influx of subsidised Chinese longline vessels. China and Chinese Taipei opposed the 37% reduction in albacore catches required to achieve the 45% target reference point, on the grounds that there is no biological or scientific rationale for cutbacks. The only positive outcome for albacore was a minor revision to the current conservation and management measure (CMM 2010-05) with members agreeing to provide vessel-level data by species for 2006-2014 for all fleets operating in the South Pacific albacore fishery. These data will be useful for future stock assessments and assessing the effectiveness of CMM 2010-05 (now CMM 2015-02). No agreement was reached on FFA members' proposal to strengthen the measure to ensure that the number of fishing vessels operating in the fishery does not exceed the 2000-2004 average (or 2005) levels (as per CMM 2010-05) and so that compliance with the measure can be effectively assessed.

*The US fleet has not paid its first quarter Treaty fees; FFA has not issued 2016 licenses*

*PIPs emphasise the economic importance of the Treaty; DWFNs and DWFs decry costs*

*WCPFC12 adopted a target reference point of 50% of unfished spawning biomass for skipjack, but could not reach agreement for Southern albacore*

Little to no progress was made on other substantive issues, most notably, the conservation and management measure for tropical tunas (skipjack, yellowfin and bigeye). Despite bigeye's continued precarious stock status (overfished and overfishing occurring) and a scientific recommendation that additional or alternative measures for purse seine and longline are required to reduce bigeye mortality by 36% to bring the stock back in line with maximum sustainable yield (MSY), there was no consensus on revisions to CMM 2014-01 to further strengthen management measures. Strongly ingrained positions were maintained between the purse seine/longline sectors and coastal states/distant water fishing nations. PNA and Tokelau (PNA+) tabled a proposal along similar lines to that in 2014 which presented a 'package' of purse seine and longline measures.

PNA+ firmly maintains that the purse seine sector has borne a disproportionate conservation burden for bigeye through FAD measures already adopted, and that additional purse seine measures will only be agreed if additional longline measures are also put in place. However, distant water fishing nations with strong longline fishing interests (i.e. Taiwan, US, Japan, China) maintain that they will not accept additional measures as they have already implemented a 30% cut in longline bigeye catches in line with scientific advice, while purse seine bigeye catches continue to increase.

Despite the Chair and Executive Director stressing that status quo was not an option for tropical tunas (and other issues), plus strong efforts by the Chair during several small working group sessions including proposed textural revisions to progress discussions, no agreement was reached. In 2016, 2015 measures will be rolled-over, including the three month-FAD closure and fourth month FAD closure/total limit on FAD sets for the purse seine fishery, as well as bigeye catch limits for the longline fishery (CMM 2016-01). PNA members have reiterated that given failure of WCPFC to reach agreement that they will continue to apply their own measures within PNA waters including a FAD monitoring and charging scheme and Longline Vessel Day Scheme in 2016.

Observer safety was a key discussion point during the course of WCPFC12, with FFA members stressing that observer safety is of paramount importance. WCPFC12 agreed that a conservation and management measure should be drafted for consideration by TCC12 and WCPFC13 on flag state responsibilities for observer safety incidents. WCPFC12 also adopted a process whereby coastal states' observer providers will pre-notify flag states of possible alleged infringements by their vessels, as well as new fields in WCPFC's Minimum Fields for the Regional Observer Program for observer safety at sea and emergency action plans.

Once again, consensus was not reached on strengthened management of enclosed and semi-enclosed high seas areas, port state measures for monitoring, control and surveillance or replacement of the 5% fin:carcass ratio for sharks, with fins required to be attached.

### **PNA gains MSC certification for free-school yellowfin**

From 26 November 2015, free-school yellowfin caught in PNA EEZs and retained by purse seiners participating in PNA's MSC certification scheme will be eligible for MSC certification from 4 January 2016. Four years after first obtaining MSC certification for skipjack, PNA has passed an expedited MSC assessment under Principle 1 (target stock status) for yellowfin. PNA's yellowfin MSC certification is the first major yellowfin fishery to be certified in the world with MSC-eligible annual catches of around 140,000 mt potentially.<sup>19</sup> This result sets an encouraging precedent for other Pacific tuna fisheries hoping to

*Deeply ingrained positions resulted in no progress at WCPFC12 on stronger measures for tropical tunas.*

*No consensus was reached on high seas management, port state measures or sharks*



certify yellowfin. However, it is in contrast to the Maldives pole and line yellowfin tuna fishery's MSC certification which is under scrutiny given IOTC's recently released stock assessment indicating that the Indian Ocean's yellowfin stock status is in an unhealthy state.

The PNA's initial five year certification is due to expire in December 2016 and the PNA have signalled an intention to enter their skipjack and yellowfin fisheries into re-assessment. PNA skipjack is currently sold in the US, EU and Australian markets, with finished goods bearing the Pacific logo (Pacific being a joint venture between PNA and Netherlands-based Sustainable to handle marketing of PNA MSC tuna).

## TUNA INDUSTRY

### Thai Union-Bumble Bee mega-merger terminated, allegations that US brands price fix move forward

Thai Union's acquisition of Bumble Bee Seafoods from the private equity firm Lion Capital was cancelled in December 2015, almost exactly 12 months after being publicly announced. The deal was marred by a U.S. Department of Justice anti-trust investigation,<sup>20</sup> which pushed the implementation of the share purchase beyond the terms of the agreement. The President and CEO of Thai Union, Thiraphong Chansiri, noted the 'efforts to get this deal approved' but that US government approval was 'now unlikely due to a higher level of complexity in the process'.<sup>21</sup>

While Thai Union will continue to be a major player in the US market, not least through its ownership of the Chicken of the Sea brand; the failed deal is a major setback as it would have given Thai Union control of a premium canned tuna brand and allowed it to challenge head-on the market leader Star-Kist, owned by Dongwon. Given that Chicken of the Sea is a 'follower' brand – chasing Star-Kist's market-leadership, Dongwon will remain top dog in the US canned tuna retail segment. Despite this, Thai Union continues to be the largest canned tuna firm in the world and is likely to focus on consolidating its lead in other markets such as the EU and growing into new ones with lower trade barriers such as the Middle East and Africa.<sup>22</sup> In parallel, the second largest Thai canned tuna firm – Sea Value – is seeking to bypass EU tuna tariffs and heighten its position in the French foodservice market by buying a processing facility in Brittany, France.<sup>23</sup>

Meanwhile, nine putative class action lawsuits and 44 related cases accusing Starkist, Bumble Bee Foods and Thai Union (owner of Chicken of the Sea) of a price-fixing scheme have been consolidated into a multidistrict litigation in California's Southern District.<sup>24</sup> One of the first proposed class actions lawsuits was filed by Olean Wholesale Grocery Cooperative Inc. The original suit alleges that the three firms worked together to artificially fix, raise and maintain tuna and other shelf-stable seafood product price in the US. Olean alleged that consumption of canned tuna in the US has declined while prices have not and that in the face of declining skipjack prices, high raw material costs cannot be blamed.

### Thai industry responses vary to growing child and forced-labour allegations

Prior issues of *FFA Trade and Industry News* have reported on mounting concerns over human rights abuses in Thailand's seafood sector, as well as the fallout for industry. Thailand has earned the lowest tier in the US State Department's Trafficking in Persons report. Despite the ranking, the US State Department has not sanctioned

**PNA obtains world's first major yellowfin fishery to be MSC certified**

**US anti-trust investigation cripples merger, but Thai Union is likely to expand elsewhere**

Thailand in the same way it has to other countries with similarly weak human trafficking records because it is a strategically critical Southeast Asian ally. US Federal authorities say that an exception for items that consumers cannot get from another source prevents them from banning imports. By contrast, the EU has trebled import tariffs on shrimp products and is presently debating a potential outright ban.<sup>25</sup>

As Thai industry and government have lined up responses, allegations continue to mount. Recently, the Associated Press (AP) released results of an in-depth investigation that revealed widespread child and slave labour practices in the peeled shrimp sector.<sup>26</sup> Using US import data, the AP traced slave-labour produced shrimp to more than 40 brands and 150 stores. The AP also traced slave labour to products destined for EU, Asian and Australian markets. The wide network of suppliers have enabled Thai processing firms to outsource risks and lower their costs, but this structure is now proving to pose liabilities: production practices are difficult to track and control over and above supplier commitments to adhere to codes of conduct developed by the purchasing firms.

Thai industry responses are varied. For example, following reports that Thai Union inspectors visited some of the shrimp peeling sites and were aware of work practices and conditions, Thiraphong Chansiri, CEO of canned tuna giant Thai Union, admitted 'that illicitly sourced product may have fraudulently entered [Thai Union's] supply chain' and confirmed that a supplier 'was doing business with an unregistered pre-processor in violation of our code of conduct.'<sup>27</sup> Notably, prior to the AP's story, Thai Union announced plans to bring all shrimp processing in-house by the end of 2015 and provide jobs to workers whose factories close as a result.<sup>28</sup> In the wake of the report, its subsidiary, Okeanus, terminated its relationship with a supplier that it suspected was breaking the firm's code of conduct.<sup>29</sup> On the other hand, K. Poj Aramwattananont, president of the Thai Frozen Foods Association and CEO of Sea Value, denied the AP allegations. He indicated that shrimp plants no longer employ children or illegal foreign workers. He added that if any firms are found to have used illegal or forced labour, they will be removed from the supply chain.<sup>30</sup>

As the public relations nightmare plays out in major markets, retailers and restaurant chains around the world take pains to demonstrate that their supply chains are clean of slave labor.<sup>31</sup> Meanwhile, Greenpeace argued that Thai industry can no longer claim ignorance and called for it to do more to end the abhorrent practices.<sup>32</sup>

### What is the current potential for drone use in tuna purse seine fisheries?

Productivity and profitability in purse seine fisheries are driven by technological innovations such as satellite-derived oceanographic information, enhanced fish finding and sonar capabilities, and echo sounder GPS buoys. An earlier innovation, helicopters for spotting fish and monitoring sets played a similar role in recent decades. But helicopter use is expensive and requires a high degree of expertise in the form of licensed pilots and mechanics. It is also dangerous: mishaps involving helicopters result in injuries and fatalities in the industry. In addition to the human cost, such accidents result in financial costs, including higher insurance premiums.

The recent rapid technical improvements in the capabilities of drones (broadly defined by several governmental authorities as unmanned aircraft systems, or UAS) and their navigation and video systems have resulted in increased terrestrial applications. Drones are now employed in surveying and mapping, photography, and aspects of wildlife monitoring. For example, the Danish Pelagic Producers Organisation is implementing a project funded by the Danish government to test the use of drones in spotting fish shoals.<sup>33</sup>

## Another investigation finds slave labour in Thai seafood processing sector

## Thai Union brings processing in-house to end slave-labour; Sea Value denies allegations



The use of drones in tuna purse seine fishing could improve safety and potentially lower operational costs by enhancing fish spotting efforts and monitoring activity during a set. The former activity has become even more important with the increases in FAD closures and other restrictions that may place greater reliance on locating schools of fish.

There are at least two distinct categories of activities for possible drone use on purse seiners. The first is long-range searching that requires systems with the ability to remain airborne for extended periods and transmit information back to the ship in a usable form. The second category would involve smaller drones, sometimes referred to as quad-copters because many less expensive models have four rotors (although some models have up to eight rotors). These drones typically could be used to monitor specific activity prior to or during a set closer to the vessel, although air time for most is limited to less than that required for a complete purse seine set. Both would require an operator onboard the vessel and a means to transmit the information quickly and efficiently to the captain or whoever is directing the seiner during operations. Existing high definition video systems are already used in both types of drones. There would probably be a learning curve associated with interpreting the transmitted images, not unlike that required for the use of new fish-finding or sonar equipment onboard.

The technology of long range drones that might be used in the purse seine fishery is being driven primarily by military applications up to and including unmanned helicopters. An Austrian company produces a highly sophisticated drone for commercial use that is essentially a small unmanned helicopter about 2 meters in length. One was successfully used in 2015 by a private organization in the Mediterranean to search for and rescue boats of migrants attempting to reach southern Europe from North Africa. The drone was launched from a small helicopter pad on the stern of the rescue ship and flown at an elevation of approximately 600 meters while transmitting real-time video back to the rescue ship.<sup>34</sup>

In 2014 the US National Oceanographic and Atmospheric Administration tested a smaller, hand-launched fixed-wing drone in a fish spotting application in the Atlantic Ocean. NOAA also has been using them, reportedly to look for sea birds, whales, turtles, and marine debris.<sup>35</sup>

One US company has introduced a fixed-wing drone described as a 'long range robotic aircraft' that is designed to operate over oceans and remote areas that purportedly can send high quality imagery using daylight and infrared cameras. The company claims that the geo-referenced data obtained by the drone can be merged with data from other electronic equipment onboard and distributed to multiple displays.

A perceived disadvantage to using fixed wing drones versus those that are helicopter-like is the problem of recovery. Possibilities include water landings or net capture systems for vessel landings. For purse seiners, workboats are commonly carried onboard and could be deployed to retrieve a drone after a water landing. It is believed that at least one purse seine fishing operation in the WCPO will be testing a fixed wing drone during 2016.

Long range drones, either fixed wing or helicopter-like, currently must utilize a ship-based fixed work station and installed antenna to receive distant signals from the drone. Future technology advances could enable the information to be sent by satellite to a central control in much the same manner as some satellite FAD buoys are managed. The resulting central monitoring of multiple systems could reduce

*Drones could improve safety and reduce costs in purse seining, especially for non-FAD fishing*

*Drones have been used to rescue migrants in the Mediterranean Sea and to spot fish in the Atlantic*



the manpower required for constant monitoring onboard and more efficiently use systems in a fleet environment.

The smaller multi-rotor systems can be controlled from a portable box with a joy stick already familiar to hobbyists. The technological improvements to smaller drones are those that have become available in very small packages and are in some ways similar to improvements that have revolutionized smart phones: GPS units, high definition cameras, and sensors such as altimeters. Because of the surging popularity of these types of drones it would not be surprising if at least some of the boats in the WCPO are experimenting with their use.

Current technology probably makes it possible to supplant or enhance helicopter use on purse seiners with both long and short range drones, but there are important cost and legal considerations. The capabilities of the helicopter-like drone used in the Mediterranean refugee searches do not come cheap. The drones reportedly cost more than US\$2 million each, with alternative rental costs of around \$150,000 per month. NOAA's two fixed-wing drone systems described above are reported to have cost \$250,000 each. A Chinese company has been manufacturing and selling a wide range of relatively inexpensive small camera-equipped drones with maximum flight times of from 15 to 23 minutes. These (and others from different manufacturers) offer a surprisingly sophisticated performance package for well under US\$1,000. Although the more advanced versions that can carry heavier payloads are marketed at around \$4,000 to \$5,000, they do not appear to have significantly increased flight times.

In terms of cost per unit, the large long range drones will probably remain expensive until significantly increased terrestrial use enables economies of scale to be realized, particularly in the area of the miniaturization of propulsion systems. The current exploding market demand for the smaller drones should result in short-term reductions in prices to consumers and increased demand that could contribute to further enhanced capabilities beyond those currently available. Their use in some form can be expected in the WCPO purse seine fishery, as competition will remain high, and vessels using advanced equipment will have an edge over those who continue to rely on older technology.<sup>36</sup>

On the legal front, regulators and lawmakers in many countries are still playing catch-up to the technologies currently being used. The increased terrestrial use of drones has brought with it a plethora of privacy and safety issues. There are concerns about uses that can be dangerous, such as drone operation near airports or airplane flight paths, and mechanical failures that could injure or kill people on the ground. Some drone manufacturers are now equipping their units with 'geofencing' capabilities that would enable exclusion from certain areas as defined by geographic coordinates coupled with the drone's GPS system.

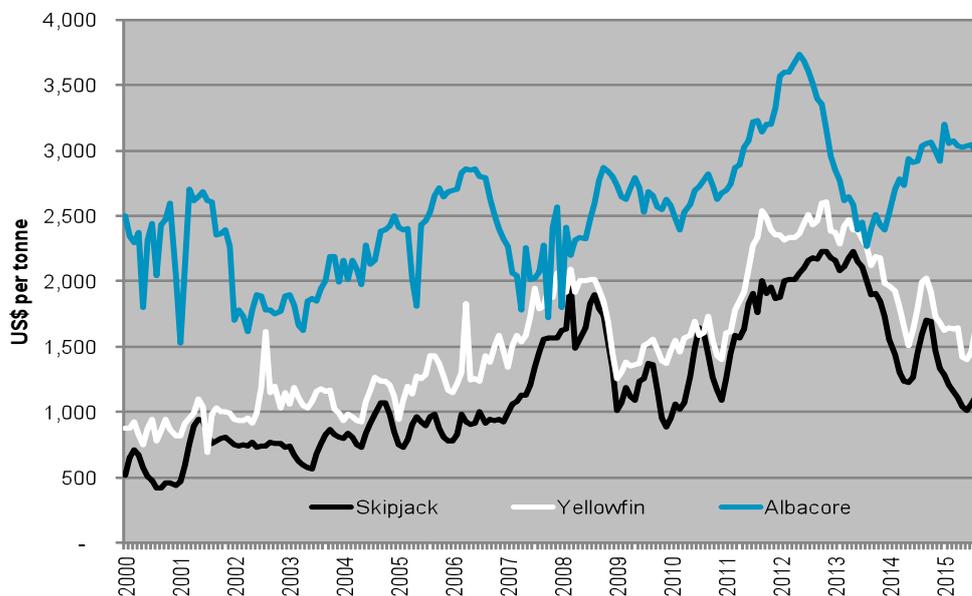
Several governments are rushing to either regulate drone use or eliminate overlapping domestic jurisdictions and regulatory responsibilities that cause confusion in enforcement. The most common element in drone regulation for commercial systems other than those for hobbyists appears to be the requirement that the operator be a licensed aircraft pilot. The requirements of some countries differentiate between drone activity flown within sight of the operator and those activities that may take place beyond the operator's sight. It could be assumed that many of the Pacific Island Countries do not possess the legal or regulatory infrastructure to manage the use of drones, and this may provide those countries with an advantage in the fishery over others that have or will have such restrictions.

*Fixed wing  
drones can  
operate over  
longer distances  
and are  
reportedly to  
be tested in the  
WCPO purse  
seine fishery in  
2016*

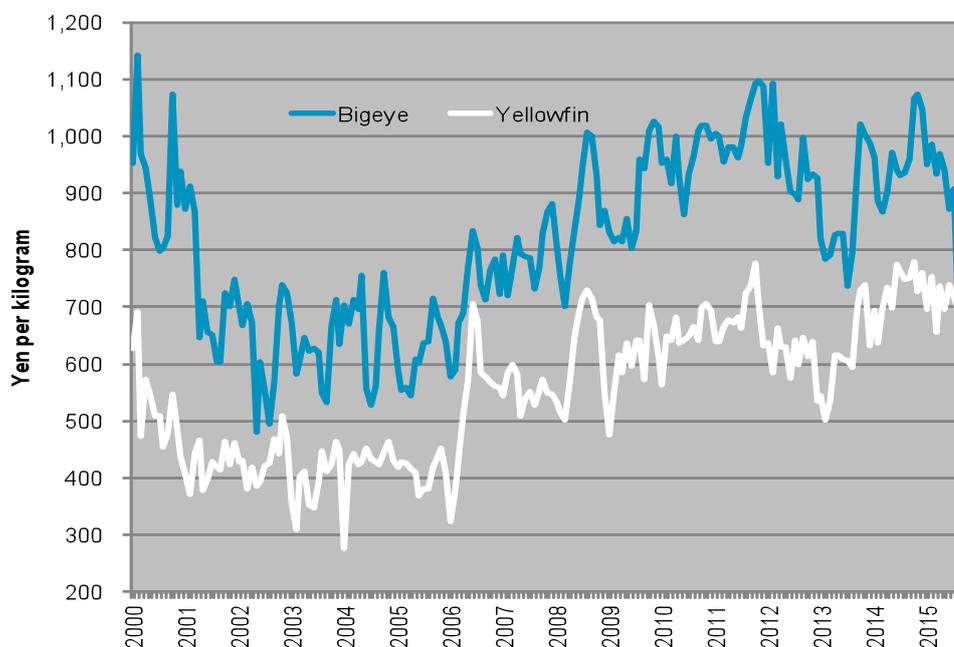
*Regulators are  
playing catch-up  
with booming  
commercial and  
consumer drone  
use*

## TUNA PRICE TRENDS<sup>37</sup>

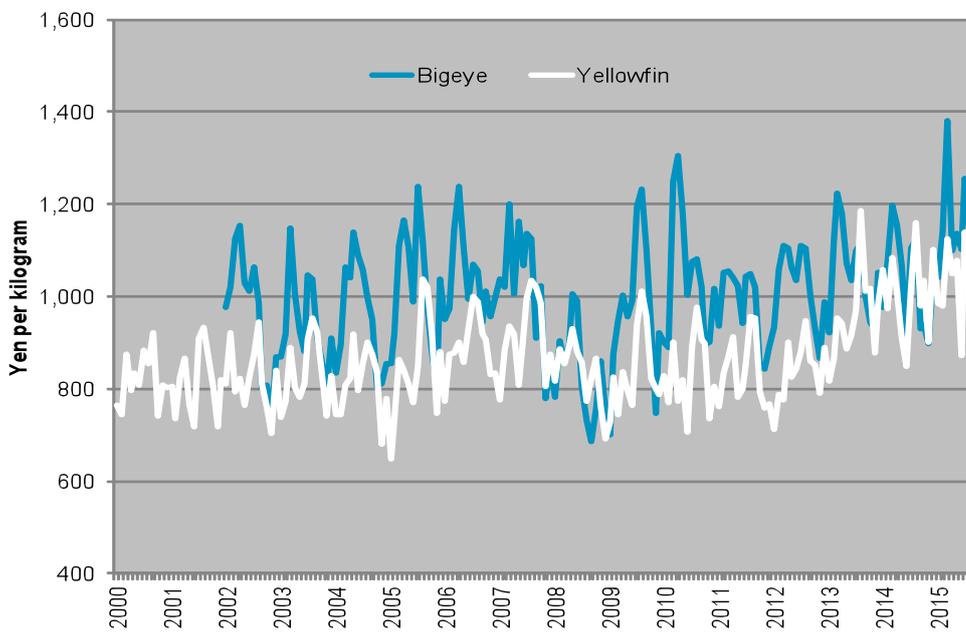
### Bangkok canning-grade prices to October 2015<sup>38</sup>



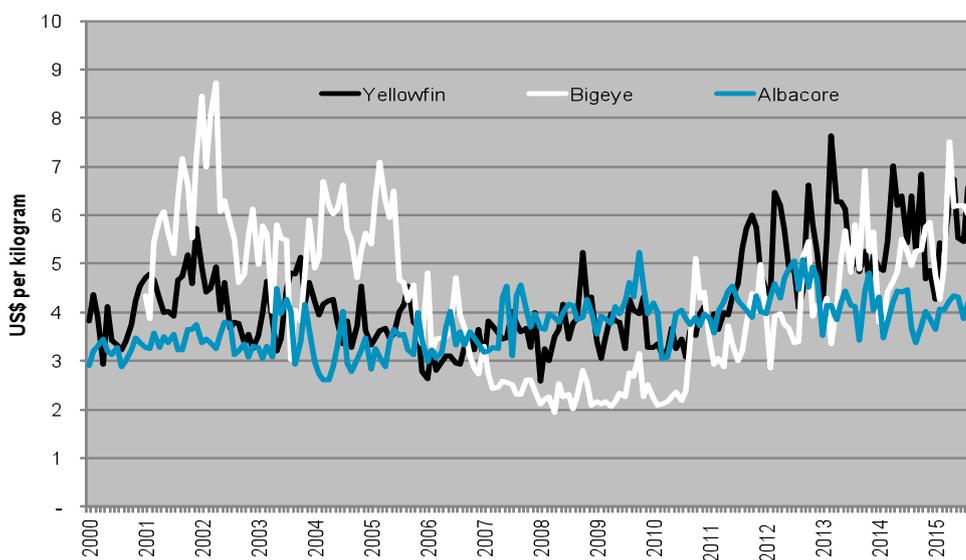
### Japan frozen sashimi prices (ex-vessel, Japanese ports) to October 2015<sup>39</sup>



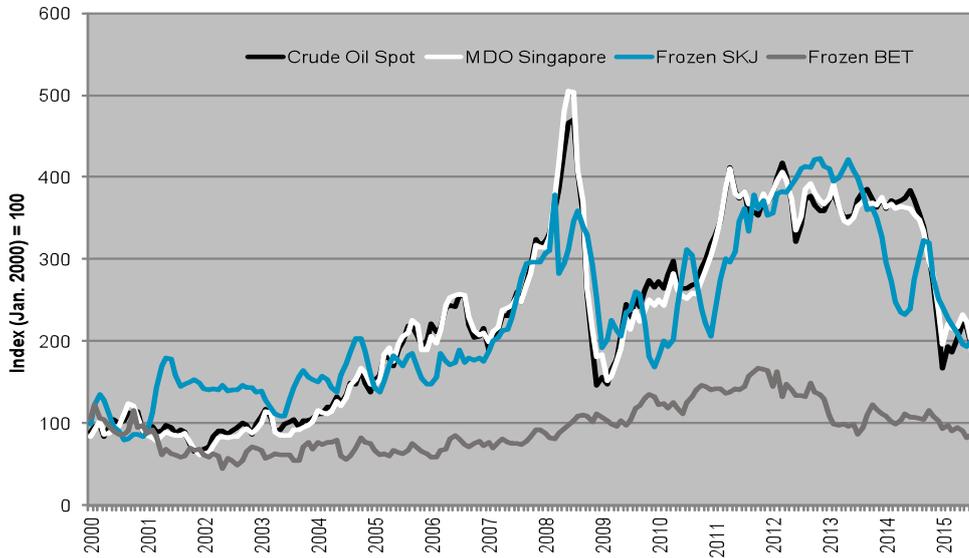
### Japan fresh sashimi prices (origin Oceania) to October 2015<sup>40</sup>



### US imported fresh sashimi prices to October 2015<sup>41</sup>



## Crude oil, canning-grade frozen skipjack (SKJ) and frozen bigeye (BET) price index to October 2015<sup>42</sup>



<sup>1</sup> Prepared for the FFA Fisheries Development Division by Dr Liam Campling, School of Business and Management, Queen Mary University of London and Dr Elizabeth Havice, University of North Carolina at Chapel Hill, both Consultant Fisheries Trade and Market Intelligence Analysts, Fisheries Development Division, FFA. Desktop publishing by Antony Price. The authors would like to thank Mike Batty for his input on an earlier draft of this briefing. The contents of this briefing (including all analysis and opinions) are the responsibility of the authors and do not necessarily reflect the positions or thinking of the FFA Secretariat or its Members.

<sup>2</sup> This paragraph is based on the TPP text: Trans-Pacific Partnership Agreement [last accessed 19 December 2015]. Available at: <https://ustr.gov/trade-agreements/free-trade-agreements/trans-pacific-partnership/tpp-full-text>

<sup>3</sup> International Trade Administration, 'Opportunities for the U.S. Fish and Fish Products Sector', Department of Commerce, November 2015. Available at: <http://trade.gov/fta/tpp/industries/pdfs/fish.pdf>; Global Affairs Canada, 'Opening markets for fish and seafood', 1 October 2015. Available at: <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/tpp-ptp/benefits-avantages/sectors-secteurs/02-FishSeafoodSector.aspx?lang=eng>; Trans-Pacific historical trade deal stirs mixed views', FIS, 23 October 2015. Available at: <http://fis.com/fis/Worldnews/worldnews.asp?monthyear=10-2015&day=7&id=79735&l=e&country=&special=&ndb=1&df=1>

<sup>4</sup> 'Summary of Japanese Tuna Industry News', No. 20, 12-16 October, 2015; and 'Summary of Japanese Tuna Industry News', No. 24, 09-13 November, 2015. Provided by M. Nakada to FFA Fisheries Development Division; 'TPP to benefit seafood exports to Japan', FIS, 23 October 2015. Available at: <http://www.fis.com/fis/worldnews/worldnews.asp?monthyear=10-2015&day=23&id=80041&l=e&country=&special=&ndb=1&df=1>

<sup>5</sup> 'TPP can benefit Vietnamese seafood sector', FIS, 8 October 2015. Available at: <http://fis.com/fis/worldnews/worldnews.asp?monthyear=10-2015&day=8&id=79763&l=e&country=&special=&ndb=1&df=1>

<sup>6</sup> See 'US Tariff Elimination-Schedule' and 'US General Notes to Tariff Schedule', both available at: <https://ustr.gov/trade-agreements/free-trade-agreements/trans-pacific-partnership/tpp-full-text>

<sup>7</sup> Liam Campling, Elizabeth Havice and Mike McCoy, 'EU concludes Free-Trade Agreement with Vietnam', FFA Trade and Industry News, 8(6) July-August 2015. Available at: [https://www.ffa.int/trade\\_industry](https://www.ffa.int/trade_industry)

<sup>8</sup> See: <https://sustainabledevelopment.un.org>

<sup>9</sup> 'Bridges daily update #5 – WTO Members clinch Agriculture Export Competition Deal, Weigh Next Steps for Negotiating Future', Bridges, 19 December 2015. Available at: <http://www.ictsd.org/bridges>

<sup>10</sup> Available at: [https://www.wto.org/english/thewto\\_e/minist\\_e/mc10\\_e/fishsubsippmc10\\_e.pdf](https://www.wto.org/english/thewto_e/minist_e/mc10_e/fishsubsippmc10_e.pdf)

<sup>11</sup> Liam Campling, Elizabeth Havice and Mike McCoy, 'New US Treaty terms, limited to one year agreement', FFA Trade and Industry News, 8(4): July-August 2015. Available at: <http://www.ffa.int>

<sup>12</sup> 'US reportedly keen to alter fishing deal', Radio New Zealand International, 7 December 2015. Available at: <http://www.radionz.co.nz>

<sup>13</sup> 'PNG supports PNA stand on US Treaty', Tuna Market Intelligence, Issue 29, 15 December 2015. Available at: <http://pnatuna.com>

<sup>14</sup> 'Update on the status of the Pacific Islands-US Treaty' FFA Press Release, 31 December 2015. Available at: <http://www.ffa.int>

<sup>15</sup> 'PNA supports FFA deadline to US', Tuna Market Intelligence, Issue 29, 15 December 2015. Available at: <http://pnatuna.com>; 'Pacific island nations accuse US of trying to renege on \$89m tuna deal', Undercurrent News, 2 December 2015. Available at: <http://www.undercurrentnews.com>

<sup>16</sup> 'NZ restates criticism of PNA fishing scheme', Radio New Zealand International, 7 December 2015. Available at: <http://www.radionz.co.nz>

<sup>17</sup> Neil Ramsden, 'Tuna purse seiners, US fleet could tie up over prices', Undercurrent News, 10 December 2015. Available at: <http://www.undercurrentnews.com>

<sup>18</sup> This article is based on personal communication with selected WCPFC12 attendees, the WCPFC12 Draft Summary Report and various other WCPFC12 meeting documents available at: <http://www.wcpfc.int/meetings/12th-regular-session-commission>

<sup>19</sup> 'First Major Yellowfin Fishery MSC Certified', Atuna, 30 November 2015. Available at: <http://www.atuna.com>

<sup>20</sup> Liam Campling, Elizabeth Havice and Mike McCoy, 'Thai Union halts acquisition fundraising in wake of US antitrust investigations', FFA Trade and Industry News, 8(6) July-August 2015. Available at: [https://www.ffa.int/trade\\_industry](https://www.ffa.int/trade_industry)

<sup>21</sup> TUF Press release, 'Thai Union Announces the Termination of Bumble Bee Acquisition', 4 December 2015. Available at: <http://www.thaiunion.com/en/newsroom.ashx>; 'Thai Union terminates deal to purchase Bumble Bee', FIS, 4 December 2015. Available at: <http://www.fis.com/fis/worldnews/worldnews.asp?monthyear=12-2015&day=4&id=80945&l=e&country=0&special=0&ndb=1&df=0>

<sup>22</sup> Neil Ramsden, 'Thailand sets sights on Middle East, African markets after GSP loss for EU sales', Undercurrent News, 9 September 2015. Available at: <http://www.undercurrentnews.com/2015/09/09/thailand-sets-sights-on-middle-east-african-markets-aftergsp-loss/>

<sup>23</sup> Ross Davies, 'Sea Value bets on new French processing plant to boost EU sales', Undercurrent News, 14 December 2015. Available at: <https://www.undercurrentnews.com/2015/12/14/sea-value-bets-on-new-french-processing-plant-to-boost-eu-sales/>

<sup>24</sup> Melissa LaFreniere, 'Canned tuna price-fixing class action lawsuit consolidated into MDL', Top Class Actions, 14 December 2015. Available at: <http://topclassactions.com>

<sup>25</sup> Margie Mason, Robin McDowell, Martha Mendoza and Esther Htusan, 'Global markets selling shrimp peeled by slaves', Associated Press, 14 December 2015. Available at: <http://bigstory.ap.org>

<sup>26</sup> Margie Mason, Robin McDowell, Martha Mendoza and Esther Htusan, 2015. 'Global markets selling shrimp peeled by slaves', Associated Press, 14 December 2015. Available at: <http://bigstory.ap.org>

<sup>27</sup> 'Tuna giant Thai Union says labour abuse report another wake up call', Reuters, 14 December 2015. Available at: <http://www.reuters.com>

<sup>28</sup> 'Thai Union to take control of shrimp processing operations', The Fish Site, 10 December 2015. Available at: <http://www.thefishsite.com>

<sup>29</sup> 'Tuna giant Thai Union says labour abuse report another wake up call', Reuters, 14 December 2015. Available at: <http://www.reuters.com>

<sup>30</sup> Petchanet Pratrungkrai and Pratch Rujivanarom, 'Thai Frozen Foods hits back at claims', The Nation, 16 December 2015. Available at: <http://www.nationmultimedia.com>

<sup>31</sup> See, e.g., Sarah Danckert, 2015. 'Woolies, Coles, Aldi caught up in child labour scandal', The Sydney Morning Herald, 15 December. Available at: <http://www.smh.com.au>

<sup>32</sup> 'Thai Union seafood allegedly connected to forced and child labour – Greenpeace statement', Greenpeace Press Release, 14 December 2015. Available at: <http://www.greenpeace.org>

<sup>33</sup> <https://www.undercurrentnews.com/2015/10/09/denmark-to-use-drones-to-locate-fish-shoals/>

<sup>34</sup> <http://mashable.com/2015/08/21/drones-help-find-migrants-in-the-mediterranean-sea/#MDa4SH96iOqD>

<sup>35</sup> NOAA website devoted to its unmanned aircraft systems program: <http://uas.noaa.gov>

<sup>36</sup> A more detailed description of other technological advances in the WCPO purse seine fishery can be found in the FFA 2015 report, A Forward Looking Study of Development Opportunities in FFA Member Countries in the Tuna Industry, available at <http://www.ffa.int/node/1509>

<sup>37</sup> All databases are provided by the Fisheries Development Division at FFA.

<sup>38</sup> Customs Department, Thailand. <http://www.customs.go.th/Statistic/StatisticIndex.jsp>

<sup>39</sup> FFA database

<sup>40</sup> Japan Customs. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm)

<sup>41</sup> US National Marine Fisheries Service. <http://www.st.nmfs.gov/st1/trade/index.html>

<sup>42</sup> US Energy Information Administration. [http://tonto.eia.doe.gov/dnav/pet/pet\\_pri\\_spt\\_s1\\_m.htm](http://tonto.eia.doe.gov/dnav/pet/pet_pri_spt_s1_m.htm)