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By Liam Campling[1]

Special feature: sashimi markets and ranched tuna

The value of the global sashimi market was estimated to be USD 3.4 billion (€2.2 billion) in 2006.[2] Markets for sashimi grade tuna are characterised by two main product types: fresh chilled and frozen. These two value chains contain four distinct industries – high value fresh chilled longline fleets, freezer longliners, tuna ranching and, while not yet commercialised, tuna farming. It is well known that the principal market for sashimi grade tuna is Japan – it consumes around 87 percent of the world's sashimi. The US, Western Europe and Australia are also large and growing markets – the US consumes around seven percent of the world's sashimi. In Australia for example, the demand for Asian-style food such as sashimi is booming due to food/health consciousness, the diversity of tastes, high levels of disposable income and immigration from East and Southeast Asian countries.[3] There is also rising demand for sashimi grade tuna in the urban centres of China and Russia, leading Japanese buyers to compete with those in places like Hong Kong and Moscow for the best quality fish.[4] In short, even though demand for sashimi grade tuna in Japan has slowed over the past two years,[5] there are several other long-existing and emerging market opportunities available, subject of course to the sustainability of tuna resources.

The most high profile and valuable tuna species consumed as sashimi is bluefin, of which there are three species: Northern, Southern and Pacific bluefin. These species are of little direct commercial relevance to PICs because they do not flow through their EEZs. Bluefin is however, of huge *indirect* importance to PIC tuna fisheries because the second most valuable tuna species eaten as sashimi – bigeye – is a quasi substitute for bluefin. In other words, reduced bluefin imports by sashimi consuming countries can result in increased bigeye imports for the wealthy segments of their populations. Yellowfin tuna is also eaten as sashimi. By volume yellowfin is the most consumed species. This is due to demand for sushi 'Bento's' or lunch-boxes as yellowfin tuna meat generally presents very well. Many Japanese women prefer yellowfin as the perception is that the brilliant red, low fat meat is healthier. The taste is also milder.

Due to its potentially very high value and inadequate management,[6] bluefin tuna species are under serious pressure from fishing. This has resulted in high-profile campaigns by those concerned with stock depletion, including environmental NGOs. Greenpeace and WWF campaigns have been reported on in several prior issues of this *Briefing*. As well as raising public consciousness on the issue, these NGOs have targeted major supermarkets and high profile restaurants and convinced several to stop selling bluefin, especially in the US and Western Europe. For example, the Environmental Defence Fund and the Monterey Bay Aquarium in the US released lists of 'good' and 'bad' sustainability choices for sushi; bluefin featured on the 'red list'.[7] Perhaps as a result of this pressure, the world's largest sashimi grade tuna trading company – Mitsubishi – has stated that it will re-assess

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Japanese buyers to compete with Hong Kong and Moscow for the best quality sashimi

its involvement in the trade if the sustainability of stocks cannot be assured.[8]

The major commercial response to the current and projected insecurity of supply of sashimi grade bluefin tuna has been the ongoing development of tuna farming and ranching. Depending on the region and species, tuna ranching involves catching either baby, juvenile or mature fish and fattening and /or conditioning them up in offshore pens for eventual culling and sale. Tuna farming on the other hand involves growing out fish from mature brood stock eggs. This industry still has some ways to go to prove economical, but in some respects it is considered more acceptable from a sustainability and environmental perspective. Reports from Tsukiji in Tokyo indicate that the volume of ranched tuna passing through that market totalled 32,580mt in 2008, an 11 percent increase over last year;[9] this data does not reflect the full volume as much ranched tuna flows through non-traditional marketing channels such as direct sales by trading companies (such as Mitsubishi) to supermarkets and sushi chains. Several Japanese firms are investing heavily in bluefin tuna farming and ranching, including a €8 million investment by Maruha Nichiro, a projected tripling of ranched production by Nippon Suisan, and new investments by Nippon Meat Packers Inc.[10]

Tuna ranching and farming are major commercial responses to insecurity of supply of bluefin tuna

Research in the area of farming is ongoing with recent collaboration between Kinki University in Japan and tuna farmers in Port Lincoln, Australia (especially the firm Clean Seas). Northern bluefin have already been successfully propagated at Kinki and the next bastion is Southern bluefin, this explains the collaboration as Clean Seas has made recent advances in closing the breeding cycle for bluefin tuna.[11] For some, this could lead the way to a restocking of the oceans in the future.

Critics point out the environmental limits of tuna ranching

There are however, dissenting voices on the capacity of tuna ranching to overcome tuna supply constraints. Alain Fonteneau – a well known fisheries scientist who specialises in Indian Ocean tuna – argues that ranching is not the solution to repopulating the world's oceans or to meeting market demand.[12] Both Fonteneau and Peter Makoto Miyake – consultant to Japan Tuna – agree that ranching is a short-term profit making activity rather than a long-term solution. These concerns have been reflected among some fish buyers in the UK – a country where sustainability criteria are a core commercial concern – who argue that farmed fish is not a sustainable solution because of the use of certain wild fish species as feed (not least because of poor conversion factors – feed to body mass – in high-metabolic species such as tunas) and the fact that the stock for ranching are wild-caught.[13] For the ranchers themselves, they are structurally limited in their growth by catch quotas, resource sustainability and the associated competition for supply.[14]

For many, once commercialised, tuna farming looks very promising

On the other hand, tuna farming will release firms from strict catch quota restrictions and sustainability issues, but feed pressure on other fish stocks for feed will continue. This situation however is improving due to recent research using vegetable protein incorporated with fish-meal in new 'trend setting' fish feeds (see below). For many industry representatives and other experts, at this stage tuna farming looks very promising. The impact on PICs may, however, be less positive: the commercialisation of farmed bluefin tuna may lead to the continuation of the stagnation of bigeye prices and demand if bluefin becomes more freely available to supply the appetite for sashimi among the world's wealthiest consumers.

Preferential and Free Trade Agreements

Update on free trade agreements between tuna exporting-consuming countries

Officials of the European Commission have announced that the EU is interested in pursuing FTA negotiations with individual ASEAN member countries

Various issue of this *Briefing* have reported on the role of free trade agreements (FTAs) in the international trade in tuna. The following provides an update on movements in selected FTAs. In light of the slow progress in initial discussions for an FTA between ASEAN and the EU,[15] officials of the European Commission have announced that the EU is interested in pursuing FTA negotiations with individual ASEAN member countries, including Vietnam.[16] It is not yet known if the Vietnamese government is interested in pursuing this option, although failed attempts to persuade the EU to offer Vietnam a special GSP treatment indicate that Vietnam has serious market access interests.[17] If an FTA negotiation were to go ahead, market access for tuna products would likely play a part given the emergence of a domestic tuna processing industry. (For a short overview of the tuna industry in Vietnam see the June 2008 issue of this *Briefing*.)

It seems that where the EU has failed, Japan has succeeded as an FTA between Japan and ASEAN came into effect on 1 December 2008. Called the ASEAN-Japan Comprehensive Economic Partnership Agreement, it is the first time Japan has entered into an FTA with a regional bloc. The Agreement covers trade in services and trade-related investment measures as well as trade in goods.[18] A separate report indicates that the Agreement will see Japan reduce its tariff on canned tuna from 9.6 percent to 4.3 percent, with a gradual phase-out to zero duty by 2013.[19]

Both Japan and Australia have entered into FTAs with ASEAN

Australia also signed an FTA with ASEAN in December.[20] The major ASEAN tuna processor – Thailand – already concluded an FTA with Australia in 2003 and with New Zealand in 2005. The tariff schedules under these two FTAs allow an unlimited volume of Thai canned tuna to enter Australia and New Zealand zero duty in 2009.[21] The tariff schedules of the Australia-ASEAN are not known, but it is likely that the FTA will increase competition for PICS on Australian markets for tuna products from other ASEAN countries such as Indonesia and the Philippines. However, FTAs are far from a problem-free form of trade relations. For example, a recent review of Australia's existing FTAs found that they resulted in 'Australian trade deficits and a much slower rate of reciprocal export growth, as well as trade diversion as products were sourced from countries with which Australia has zero tariffs'.[22] The latter point is of particular relevance to PICs as FTAs between principal markets and other countries exporting tuna products can easily lead to trade diversion away from PICs.

Fisheries Trade-related Regulation

An industry perspective on the EU IUU regulation

The October 2008 issue of this *Briefing* highlighted the establishment of the EU's new regulation on illegal, unreported and unregulated (IUU) fishing, which will apply from 1 January 2010. A representative of a major firm involved in the PIC tuna industry has since reviewed the EU IUU regulation and shared his thoughts with FFA. He highlighted the following practical components as being of particular relevance to PIC firms exporting to the EU if they wish to meet the requirements of the regulation:[23]

Tuna industry representative provides some practical points on the EU IUU regulation

- The vessel operator will need to complete the EC Catch Certificate, have the Master of the vessel sign it, then the carrier Master (if a carrier is used), then the exporter. Only then will the certificate go to the flag state 'validating authority' for validation. In short, the Regulation clearly places a large degree of emphasis – and paperwork – on the firms involved in the value chain prior to government involvement.
- Presumably, the exporter will send the certificate to the buyer of the fish, who will in turn send it to the importer in the EC, or any intermediate entity (e.g. a processor based in Bangkok).
- The onus will be on the vessel owner to produce the document, and send it to his or her validating authority for validation. They will then have to ensure that the document is sent to the buyer.
- The buyer will add the EC Catch Certificate to his or her list of required documents.
- A major decision for PIC governments/ flag states is the need to establish which of its agencies will be the Validating Authority. The most likely would be the fishing license authority, which would then print the forms, make the seals, etc.
- As per Article 20 of the Regulation, the flag state must notify the EC of its Validating Authority, and demonstrate that it can validate properly, and generally meet the requirements of Annex III of the Regulation.

The role of the fishing company/exporter looks relatively straightforward, as does – on first glance – the role of the flag state. However, there are issues around how many questions the EC will ask about the flag state's ability to comply with Annex III. On the one hand, it could be quite simple. But on the other hand, it might be administratively convoluted and politically charged. For instance, those PICs that run open vessel registries might experience serious constraints. There is the possibility that the regulation may turn out to be another non-tariff barrier.

Those PICs that run open vessel registries might experience serious constraints as 'Validating Authorities'

There does not appear to be a suitable catch documentation scheme in place in the WCPO to certify non-IUU caught tuna

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There is a provision in Article 13 for the use of documents issued in connection with a regional fisheries management organisation (RFMO) catch documentation scheme. However, at the present time, there does not appear to be a suitable document already in use, and given the very limited resources available to the WCPFC Secretariat it may not be able provide one. As a result, it is likely that PIC firms exporting to the EU will have to work through flag states.

This scheme will have another major impact: the EC authorities will easily be able to check that all of the imported products (whether whole round fish, tuna loins or cans) were originally caught by vessels that have EU sanitary and phyto-sanitary (SPS) numbers. Current regulations demand that any fish exported to the EU must be caught only by such vessels (i.e. no SPS number, no import). However, some exporters in Southeast Asia may have been circumventing this SPS measure.[24] Because SPS numbers for vessels must be clearly provided in the certification accompanying the IUU regulation, the new regulation may result in a shortage of compliant tuna to the EU. This means that those countries and firms that comply with the IUU regulation may have an advantage because others may not.

The IUU regulation may result in a tightening in the application ofEU SPS measures

Trial certification of 'responsible' fishmeal: Industrial tuna processing creates a number of by-products, the most important are fishmeal and fish oil. Fish meal is used as animal feed, including for aquaculture production. The International Fishmeal and Fish Oil Organisation (IFFO) which represents the interests of producers has launched a new Code of Responsible Practice.[25] The objective is to provider users of fish meal and fish oil with assurances that the products are safe for human consumption and do not contain fish that are caught by operations engaged in illegal, unregulated and unreported (IUU) fishing. The trial audit scheme will be completed by May 2009.[26] As an aside it is worth noting that aquaculture producers are looking to alternatives to fish meal, such as vegetable protein, because of the high price of fish in most of 2008.[27]

Tuna Markets

Tuna investment in the Solomon Islands?

Reports suggest that a new tuna loining facility is touted for Tenaru in the Guadalcanal Province. It is unclear whether a commercial investment is on the cards, but a Memorandum of Understanding for a proposed processing facility has been agreed between the Ministry of Fisheries and Marine Resources, local land owning groups and the provincial government of Guadalcanal. The government's reported objective is to create manufacturing employment in this rural area and reduce the outflow of unprocessed tuna from the Solomon Islands' EEZ.[28]

New tuna loining facility in Solomon Islands' Guadalcanal Province?

There are also reports on developments at the existing Solomon Islands-based loining plant Soltai Fishing and Processing Company. Soltai has been experiencing a series of strains in recent months. The Minister of Finance & Treasury described the situation of Soltai as 'challenging' in August, noting that capital investment is required.[29] The company had also recently experienced production stoppages for purposes of quality control.[30] A September news item reported that the likely candidate for the purchase of Soltai shares is Tri-Marine, a major tuna trading company that currently has a contract processing agreement with Soltai for the supply of tuna loins.[31] Soltai is currently jointly owned by the National Government (51 percent) and the Western Province (49 percent); the latter will reportedly retain its shareholding.[32]

Tri-Marine looks likely to invest in Soltai

Bumble Bee maintains contract with Pafco, Fiji

Bumble Bee bought by venture capital fund

The major North American canned tuna firm Bumble Bee agreed to a three year extension to its processing contract with Pafco.[33] The processing agreement was first entered into in 1998 and has been extended ever since. Part of the arrangement includes investment in state of the art technology to increase productivity (see below). Pafco is the main private sector employer on the island of Ovalau, where limited levels of economic diversification mean that over 700 workers rely on Pafco for employment.

In parallel, Bumble Bee itself has undergone some significant changes in recent months. The firm was sold by its parent company Connors Brothers (listed in Canada) to New York-based venture capital fund Centre Partners. Despite a 20 percent drop in Connors Brothers' profits in the third quarter of 2008 (due mainly to higher marketing and tax costs),[34] the firm was bought for approximately USD 600 million in November. This was a friendly take-over and Centre Partners had a financial relationship with the Bumble Bee arm of the company before its merger with Connors Brothers in 2004.[35] The change in ownership of Bumble Bee should not affect its relationship to Pafco.

Update on EU and US markets for tuna loins

The EU and US markets for *whole* tuna for canning has been in decline for several years in both absolute (i.e. total imports) and relative (i.e. compared to tuna loins) terms. Canneries are switching almost exclusively to production using pre-cooked frozen loins, especially in France, Italy and the US, but increasingly also in Spain. The commercial rationale here is to reduce labour costs (which are relatively very high in the EU and US) in the face of competition with canneries based in developing countries. In other words, the 'logic of loining' is part of the international division of labour between high and low cost sites of production.

The increased EU demand for loins combined with the global increase in tuna prices since 2006 has resulted in significant increases in loin prices. However, higher prices were not met with sufficient supply. For example, while loining facilities in Ecuador and El Salvador – which are often controlled or part-controlled by firms from Spain – have boosted production (see Table 1),[36] canneries in Spain reported a lack of supply in 2008.[37] As is apparent from Table 1, EU canneries import loins from sites of production throughout the world. This allows access to all of the main tuna fisheries, including the eastern Atlantic, Indian Ocean, WCPO and eastern Pacific. This diversity of supply allows EU importers to reduce risk if one oceanic sub-region or site of production encounters any problems, although it is clear that GSP+ countries based on the eastern Pacific dominate this supply. In the Pacific context, PNG experienced a decline of over 30 percent in its exports of loins to the EU in 2007 compared to 2006.

Canneries in the EU and US are increasingly relying on imported tuna loins

Table 1: Extra-EU15 import of pre-cooked tuna loins by principal supplier country (in million Euro)

	Preference scheme	2003	2004	2005	2006	2007
Ecuador	GSP+	95.0	58.8	67.7	100.1	95.7
El Salvador	GSP+	1.5	23.0	43.3	38.1	57.7
Kenya	IEPA	9.4	23.2	30.4	25.3	33.4
Colombia	GSP+	49.5	40.1	51.3	39.0	33.3
Thailand	GSP	15.5	8.0	12.0	15.2	28.5
Ghana	IEPA	2.3	3.4	4.5	5.0	8.0
Mauritius	IEPA	0.1	--	5.0	25.0	4.4
PNG	IEPA	--	--	1.1	4.5	3.1
China	GSP	--	--	--	--	2.8
Maldives	EBA	0.4	1.8	1.4	3.6	1.9
Philippines	GSP	0.2	0.1	1.8	4.3	1.7
Seychelles	IEPA	4.7	1.8	1.7	--	1.3
Vietnam	GSP	0.1	0.1	0.3	0.3	1.0
Cote d'Ivoire	IEPA	5.1	0.7	0.3	0.7	0.6
Costa Rica	GSP+	17.7	2.7	2.1	--	59.9
Guatemala	GSP+	--	10.4	18.9	7.7	--
Indonesia	GSP	1.2	0.4	0.6	0.4	--
Solomon Is.	EBA	6. 6	9.2			

Source: Eurostat. Note that data on the value of Solomon Islands' exports is not available on the Eurostat site or Globefish/ FAO statistics in consistent form, but in terms of volume it did export 1,900mt and 2,100mt to the EU15 in 2006 and 2007 respectively.

EU and US canneries employ a 'global oceans' strategy in their sourcing of tuna loins

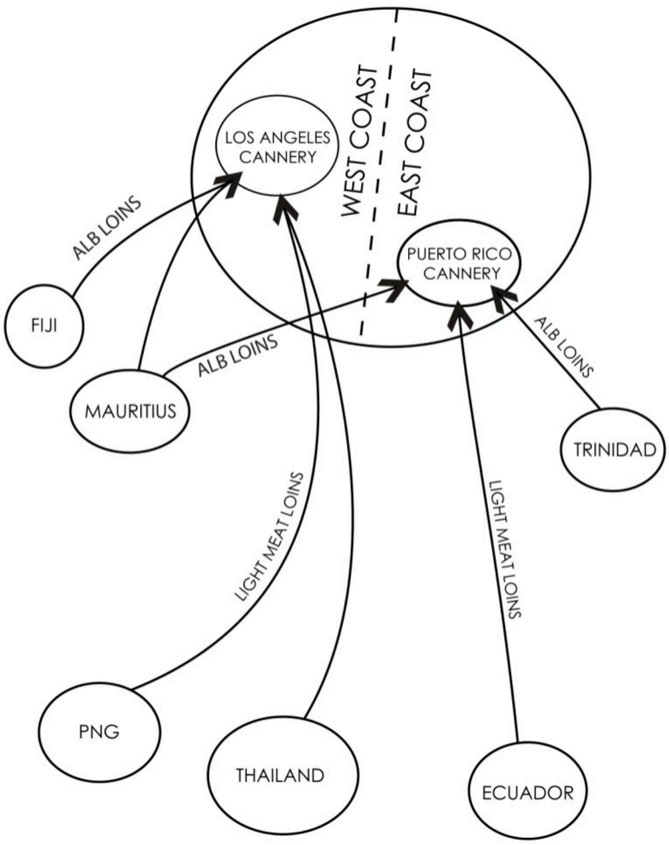
There were three main constraints in the procurement of loins by EU-based canneries in 2008: a) limits on tuna stocks on a global scale; b) competition for whole frozen tuna from major sites of production such as Thailand, which translated into higher prices; 3) the high tariff – 20.5 to 24 percent – applied on imports from all countries except for those who have signed an Interim Economic Partnership Agreement (IEPA) or that benefit from the EU's Generalised System of Preferences plus (GSP+) or Everything But Arms initiative (EBA). From Table 1 it is clear that all countries exporting loins to the EU either benefit from one of these three forms of duty-free preferential access or are based in lower cost sites of production in Southeast Asia.

In order to overcome the last of these three constraints, EU-based canning firms lobbied the European Commission to allow a tariff quota for tuna loins at 6 percent duty (HS code 16041416). This quota allowed for 8,000mt of loins in 2007, 9,000mt in 2008 and will allow for 10,000mt in 2009.[38] Imports under this quota are not subject to rules or origin and can be supplied by any country around the world. This represents therefore, a degree of preference erosion for loin exporting firms based in ACP and GSP+ countries.

The only cannery remaining on the US mainland is a canning-only plant owned by Bumble Bee, which is completely dependent upon imported loins for production. The logic behind the procurement pattern is Bumble Bee's 'global oceans' strategy, which allows it to ensure supply from several oceanic regions thereby reducing risk if a single supply chain fails (see Figure 1). Therefore, as long as this Bumble Bee plant survives, so will the US market for loins.

The EU quota for tuna loins at 6% duty expands to 10,000mt in 2009

Figure 1: Bumble Bee's US production model



ALB = Albacore (or 'white meat')

Source: Figure based on interviews and personal communications with Pacific Island and US industry representatives, 2006. Taken from Campling, Havice and Ram-Bidesi 2007

The Pacfo facility in Fiji was the most important supplier of pre-cooked vacuum packed tuna loins to the US in 2006 and 2007 with around 25 percent of the total (see Table 2). However, while PNG experienced continual growth in its loin exports to the US since 2004 – mainly due to the South Seas Tuna Corporation (SSTC) processing facility in Wewak – US import data for 2008 indicates that this year will represent a decline in growth.[39]

Fiji and PNG accounted for over 25% of US imports of tuna loins for the first eight months of 2008

Table 2: US import of tuna loins by supplier, 1998-August 2008 (in 1,000mt)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Jan-Aug 2008
Fiji	4.6	3	3.1	11.5	10.9	11.9	14.9	14.5	12.4	11	6.6
Trinidad & Tobago	-	-	-	-	2.3	11.1	13.2	13.4	12.3	10.5	7.1
Thailand	11.9	13.8	7.7	4.1	6.3	9.6	8.2	8.7	12.5	7.8	10.2
Mauritius	-	-	-	-	-	-	-	1.9	7.5	6.8	3.9
PNG	-	-	-	-	-	-	0.7	1.4	2.3	4.4	1.6
Ecuador	20.7	29	31.9	16.2	12.9	10.9	6.9	6.5	4	1.2	0.8
Others	2.4	5.8	4.6	0.6	3	0.3	0.1	0.3	0.1	2.1	0.4
TOTAL	39.6	51.6	47.3	32.4	35.4	43.8	44	46.7	51.1	43.8	30.6

Source: Globefish August 2007; National Marine Fisheries Service: http://www.nmfs noaa.gov/

Finally, technological innovations in loin processing may change this product line. A new machine called 'Tuna-Block' manufactured by the Spanish fish canning technology firm Hermasa has been developed to reduce labour input in packing loins into plastic bags before blast freezing and results in a more uniform product shape.[40] Pafco is the first firm in the Pacific islands to introduce this new machine into its loining facility.[41] The extent to which this will have negative implications for levels of employment of fish workers is not known.

Pafco introduces new 'Tuna-Block' machine for loin production

'Value added' tuna processing in Ecuador

Ecuador is one of the largest producers of tuna products in the world. The majority of production is based in the coastal city of Manta, which has been the centre of Ecuador's tuna industry for the past thirty years. Processing facilities based there have traditionally focussed on canned tuna and tuna loins, normally under contract for big brands and supermarket own-brands.

Ecuador's first foray into value added tuna products was tuna in pouches

Under the terms of the Andean Trade Preference Act (ATPA), Ecuador receives duty free entry into the US market for tuna in aluminium pouches. (For an update on the ATPA see the October 2008 issue of this *Briefing*.) This preferential market access acted as the spark for the production of 'value added' tuna in pouches. However, due to the lack of certainty of the ATPA, Ecuador-based processors have shifted to the EU as their principal market, primarily exporting under the terms of the GSP+.

Recent reports have highlighted the diversification of production into new value added ranges such as tuna in glass jars, tuna salad products, canned tuna packed in a variety of sauces, and other 'gourmet' items such as tuna fillets with olives.[42] The development of 'value added' tuna products has been in the pipeline in Ecuador for over two years, including multi-million dollar investment by the domestic firm Teso Pesca in 2006.[43] This represented an important shift in the investment model of tuna processing in Ecuador as previously investment was dominated by capital from the US and Spain. In 2008 Teso Pesca refurbished its processing facilities so as to meet a range of international public and private standards, including those of the ISO and the British Retail Consortium. Teso Pesca also invested USD 1 million in the building of a new industrial kitchen for research and development purposes with the objective of launching new ready to eat tuna products. The implication for PIC based processors is that product diversification into value added items is an area for investigation.

Domestic investment has resulted in an expanded range of value added items

Coming in the next issue
(January 2009, Vol. 2: Issue 1)

- Update on status of PACP-EU Economic Partnership Agreement
- Update on status of WTO Fisheries Subsidies Negotiations
- Developments in the canned tuna industry in Southeast Asia

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