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GENERATING INTERNAL REVENUES AND EMPLOYMENT FROM THE TUNA INDUSTRY FOR BOUGAINVILLE

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Abstract

The total budget for the Autonomous Bougainville Government (ABG) in 2016, the period for which data is available, was K286 million (USD84.6 million). However, if Bougainville votes for independence in the October 2019 referendum, it will require three times the current budget to sustain itself. Using desktop research, this study explores how the tuna industry can contribute to closing this gap. Bougainville waters cover 30 percent of the total Exclusive Economic Zone (EEZ) of Papua New Guinea (PNG), which can be used as the basis for negotiating a tuna revenue sharing agreement. In 2016, tuna revenue from licence and access fees paid by fishing vessels for tuna alone generated K436.23 million (USD128.8 million). If the 30 percent estimation was used, tuna revenue would have added K130.87 million (USD38.64 million) to the ABG budget. Furthermore, the tuna-manufacturing sector is low skilled and labour intensive, which can also provide more jobs. Bougainville can attract the tuna manufacturing industry into less developed areas of South Bougainville. Whether Bougainville becomes independent or remains an autonomous region, fiscal autonomy remains a major concern, and the tuna industry is one option that can contribute to, towards this goal.

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GENERATING INTERNAL REVENUES AND EMPLOYMENT FROM THE TUNA INDUSTRY FOR BOUGAINVILLE

By Michael Kabuni

Introduction

The Bougainville referendum set for October 2019 gives the people of Bougainville the choice of autonomy or independence. Regardless of the result, fiscal self-reliance remains an important issue. The total budget for the Autonomous Bougainville Government (ABG) in 2016, the period for which data is available, was K286 million (USD84.6 million). Chand's (2018) estimate, based on the population-weight average of neighbouring Melanesian countries of Fiji, Vanuatu, the Solomon Islands and PNG shows that an independent Bougainville will require three times the current amount of K286 million (USD84.6 million). Fiscal autonomy is not a pre-requisite for independence, but as Chand (2018) argues, political independence can be problematic if the government lacks the capacity to raise revenues for the budget internally. According to the *Bougainville Peace Agreement 2001* (BPA), Bougainville will have reached fiscal self-reliance in the first year of revenues from company tax, custom duties and 70 percent of value-added tax collected in Bougainville are equal to the value of the recurrent grant given by the PNG Government on a sustainable basis (BPA, s.137). By 2016, the recurrent grant was K41.3 million (USD12.22 million), whilst revenues from company tax, custom duties and 70 percent of value-added tax collected in Bougainville was K2.4 million (USD0.71 million). This is just six percent of the value required for fiscal self-reliance. However, this gap is narrowed if revenues from 'all internal sources' are considered, which was K23.2 million (USD6.86 million) in 2016, constituting 56 percent of the recurrent grants.

Methodology

This research is limited to desktop research, using secondary information. It relies on national legislation and management plans, including the *National Tuna Fisheries Management and Development Plan 2004*, and *Fisheries Management Act 1998*, regional agreements and trade agreements, including the

Nauru Agreement 2008 and the *PNG-EU Interim Economic Partnership Agreement 2007*. Other sources, such as the PNG National Fisheries Authority and Forum Fisheries Authority newsletters, journal articles, newspapers and conference presentations were consulted. There are four tuna species: skipjack tuna, yellow fin tuna, big-eyed tuna, and albacore. Tuna, as referred to in this paper, is a reference to skipjack tuna, the most canned tuna of all species. It is also the most caught tuna in the Pacific, representing more than 70 percent of the global supply, and about 50 percent¹ of this species of tuna is caught within PNG waters (*ss. 14, National Tuna Fisheries Management Act (Amended) 2014*).

Regulation and management of tuna fisheries in PNG

The role of regulation and management of marine resources in PNG is mandated to the National Fisheries Authority (NFA) by virtue of the *Fisheries Management Act 1998* (Amended in 2014). The *National Tuna Fisheries Management and Development Plan 2004* (hereby referred to as the Tuna Plan) derives from the *Fisheries Management Act*, providing specific guidelines. The area under management to which the Tuna Plan applies includes the EEZ, archipelagic waters, territorial waters and internal waters of PNG, which are consistent with the *United Nations Convention on the Law of Seas 1982* (UNCLOS) that recognises a sovereign country's right to these areas. The *National Seas Act 1977* of PNG defines the specific areas: PNG's EEZ is 2.7 million km² (1.7 million miles), territorial waters cover the area within 19.3 km² (12 miles) from the Territorial Sea baseline, whilst lakes and waters constitute internal waters.

The Tuna Plan consolidates all management measures and agreements introduced at the national, regional and sub-regional level for the management and conservation of the tuna fishery, monitoring of illegal, unregulated and unreported fishing (IUU), seafood safety standards, and food security at the national level. Tools employed for management include fisheries access agreements, vessel licensing and registration, control of fishing efforts, electronic monitoring and control,

¹ These percentages change each year. For instance, in 2015, International Seafood Sustainability Foundation (ISSF) reported that PNA's share of skipjack globally was 58 percent, and skipjack caught within PNG alone constituted about 47 percent of the PNA catch.

and sanitary and phyto-sanitary standards (seafood safety standards), among other things. The Tuna Plan imposes control on fishing methods employed by fishing vessels, such as purse seine and longline effort, as well as the use of fishing aggregated devices (FADs) within PNG waters. This is done through audit processes, the use of vessel monitoring systems (VMS) to monitor fishing vessels, vessel automatic identification systems (AIS) to identify fishing vessels, catch documentation schemes (SDS) for monitoring catch quota and species, and research related to tuna species.

The licence and access fees, which are the main tuna revenue generators for PNG, are set based on various methods that fishing vessels employ. Purse seine vessels, for instance, use nets drawn around a school of fish, which is then closed at the bottom by means of a line passing through rings attached along the lower edge of the net. The access fees for purse seine are charged under a scheme called the vessel day scheme (VDS). The premium price by 2018 was between USD12,500 to USD14,000 (Betitis et al, 2017). In determining the fees, the PNG Fisheries Board takes into account, among other things, the catch capacity of the vessels or groups of vessels, as well as operational history such as compliance with state regulations. The government also receives revenues from taxes paid by onshore tuna manufacturing companies.

Regional agreements are important for PNG to manage and benefit from tuna fisheries because of the migratory nature of tuna. PNG has joined numerous regional agreements that are based on international law, to provide collective management and optimise benefits, as well as sustainable use of fishery resources. PNG is a signatory to the following: *Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPO)*, *Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (Nauru Agreement)*, *Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery*, and *Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region*. These agreements cover a range of measures from enhancing compliance, combating and eliminating IUU fishing, to maximising benefit from tuna revenues. The two most important agreements that enhance PNG's benefits from tuna resources are the *PNG-EU interim Economic Partnership Agreement* and the *Nauru Agreement*, which PNG signed in 2007 and 2008 respectively.

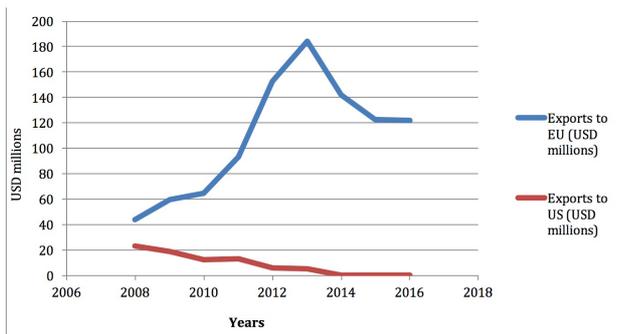
The Nauru Agreement and the PNG-EU interim Economic Partnership Agreement

The *PNG-EU interim Economic Partnership Agreement 2007* (PNG-EU iEPA) was ratified and came into effect in 2011.

There are three preferential accesses offered to PNG under the PNG-EU iEPA (2007), namely: (1) PNG canned tuna exports are tariff free; (2) quota free; and (3) exceptions are made for global sourcing. The first two preferences allow PNG to export canned tuna to EU member countries at zero tariff rates and in unlimited quantities. The third preference removes the restrictions known as the rules of origin, which requires countries exporting to the EU to use raw materials (raw tuna) harvested within the borders of the exporting countries. The *Nauru Agreement*, on the other hand, is a regional agreement between PNG, and the Federated States of Micronesia, Kiribati, the Marshal Islands, Nauru, Palau, the Solomon Islands and Tuvalu. Under this agreement, the eight parties to the Nauru Agreement (PNA) are allocated fishing days, and fishing vessels pay the PNA countries to fish within the combined EEZ of all eight PNA countries on the days allocated to them. Global sourcing preference under the *PNG-EU iEPA Agreement* complements the *Nauru Agreement*, in that it allows fishing vessels to pay the PNG government to fish within the combined EEZ of PNA countries for the duration of the days allocated to PNG, and land some of the catch onshore for processing. If the rules of origin were strictly applied, tuna caught outside of PNG's EEZ would face high tariffs when exported to the EU.

Originally the *Nauru Agreement* involved dividing 44,000 fishing days between the member countries. Each country sells its allocated days to the highest bidder. By 2018, purse seine fishing vessels were paying between USD12,500 to USD\$14,000 per day to fish in PNA waters under the vessel day scheme (VDS), the main scheme that generates tuna revenues for PNG (Betitis et al, 2017). Due to the migratory nature of tuna, the *Nauru Agreement* gives fishing vessels the freedom to 'chase' the tuna stock traversing the EEZs of the eight PNA member countries. In 2012 PNG was allocated its share of days, 11,197 days out of the 44,000 days set under the *Nauru Agreement*. The result of these two agreements is significant, as shown in Figure 1. Figure 1 shows that export of canned tuna to the EU, which benefited from zero tariffs and zero quotas, increased significantly after signing the PNG-EU iEPA in 2007. The drop after 2012 was due to a drop in canned tuna prices, and the El Nino effect in 2015, but it is still higher than exports to the US. Exports to the US, which is the second largest market for PNG tuna after EU, during the same period declined because US charges tariffs on canned tuna as high as 35 percent (FFA Economic and Development Indicators, 2017).

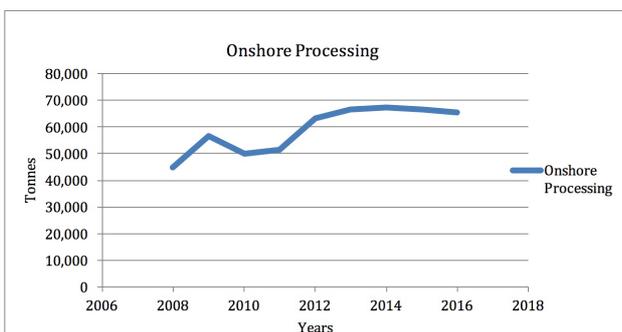
Figure 1: Exports of processed tuna to EU and the US



Source: FFA Economic and Development Indicators, 2017.

Figure 2 shows the volume of tuna caught between 2008 and 2016, a relative increase, which can be attributed to companies establishing processing plants in PNG to make use of preferential access under the *PNG-EU iEPA 2007*. The *Nauru Agreement* also provides greater fishing grounds for vessels that supply raw tuna to manufacturing plants in PNG.

Figure 2: Volume of tuna processed onshore in PNG



Source: FFA Economic and Development Indicators, 2017.

The revenues from tuna could have been higher, but the PNG Government has been offering rebates to fishing vessels that agreed to process at least 10 percent of the catch in PNG. These rebates include discounts to VDS rates charged to fishing vessels. *ABC Pacific Beat* (18 December 2017) reported that the discount was as low as USD2,500 per day whilst *PNG Today* (3 June 2018) reported that VDS was discounted to USD10,000 per day, instead of the premium USD12,500 to USD14,000 per day. In 2018, Fisheries and Marine Resource Minister Patrick Basa confirmed that PNG was selling the VDS at discount rates whilst other countries in the *Nauru Agreement* were charging USD12,500 (Kapin, 2018). The discount may therefore be anywhere from USD2,500 to USD10,000. In 2018, reviews of the rebates by PNG officials revealed that about 80 percent of the tuna

was processed offshore, whilst PNG-flagged tuna vessels sometimes did not visit PNG ports for a year (*ABC Pacific Beat*, 18 December 2017).

This raises the question as to whether the manufacturing companies established processing facilities in PNG to access preferential access to the EU, or to access the rich fishing grounds in PNG and the Pacific, which constitute 70 percent of skipjack tuna, a species of tuna that is most commonly canned. Havic and Reed's (2012) case study on the RD Cannery in Madang revealed that when the company's 150² tonnes per day processing facility was met, the excess supply was sent to the Philippines. The RD consortium operates two tuna processing plants in the Philippines with capacities of 140 and 80 tonnes per day, which lacks sufficient raw tuna supply. In 2010, the RD fleet caught roughly 37,000 tonnes of tuna of which it processed upwards of 30,000 tonnes at the cannery in Madang whilst the balance was sent to the two canneries in the Philippines (Havic and Reid, 2012). The low catch in Philippine waters means PNG and the Pacific are important fishing grounds for supply purposes. This suggests that RD's presence in PNG is becoming more important to securing the firm's overall raw material needs.

Despite this, RD benefits from several preferences. It received the land parcel in Madang at the 'discounted price' of USD2.19 million, a 10-year tax holiday, and domestic-class fishing licences that grant RD vessels fishing rights in PNG's archipelagic waters and exempt them from paying fees on all fish captured (Havic and Reid, 2012). By October 2011, RD had received two such licences. RD then used these licences for its larger vessels to increase the catch volume. Since the Madang cannery was already operating at capacity, it is possible that RD ships the surplus catch to the Philippines.

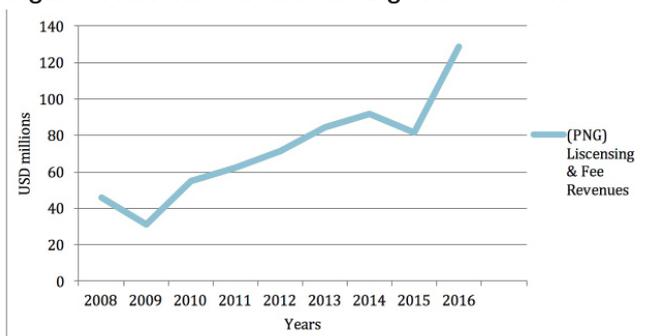
The PNG Government and the National Fisheries Authority claimed that such practises resulted in a loss of K300 million (USD88.74 million) in direct incomes, K1 billion in taxes (USD294 million) and about 15,000 jobs between 2008 and 2018 (*Post Courier*, 4 January 2018). The Government did not provide an explanation on how they reached this figure though. The PNG Government responded by eliminating rebates for all fishing vessels except those that process 100 percent of their catch onshore in PNG as of 1 January 2018. The Government estimates that adjustment to rebates will earn PNG, 235 million kina (USD70 million) per year in revenues (*Post Courier*, 4 January 2018).

² This is relatively small volume compared to canneries in Ecuador and Thailand, which are capable of processing between 250 and 500 tonnes daily

Licensing and access fees

Revenues collected from licensing and access fees between 2008 and 2016, the period for which consistent data is available, shows an increase in revenues despite the discounts to fishing vessels promising to process at least 10 percent of their catch onshore. By 2016, the revenue from licensing and access fees alone generated K436.23 million (USD128.8 million) for PNG, an increase from K154.7 million (USD45.7 million) in 2008. Figure 3 shows an increase in revenues collected from licence and access fees alone. The rich PNG fishing grounds, and the PNA days allocated to PNG, draw fishing vessels to PNG. Fishing vessels that do not land their catch onshore pay the standard rate. Purse seine vessels pay of USD12,500 to USD14,000 (Kapin, 2018). It's a bidding process, so depending on the number of interested vessels, the bid can go as high as USD14,000. Revenues from licence and access fees remain the main source of tuna revenues.

Figure 3. Revenues from licensing and access fees



Source: FFA Economic and Development Indicators, 2017.

So how can Bougainville maximise its tuna revenues? The following sections will discuss the different options available to Bougainville.

Tuna revenues: Licensing and access fees

For immediate access to tuna revenues, the Bougainville Government can negotiate with the PNG Government for fisheries rent in the form of licence and access fees for tuna caught within Bougainville waters. How much is owed to Bougainville is difficult to calculate due to a lack of sufficient data on tuna caught within Bougainville waters, as well as the absence of a benefit sharing agreement between the ABG and PNG Government. The South Pacific Community (SPC) estimates the tuna caught within Bougainville waters to be 30 percent of the total catch within PNG's EEZ. Basically, Bougainville's EEZ makes up 30 percent or 720,000 km² of the total 2.4 million km² EEZ of PNG. One possible way to calculate tuna rents for Bougainville therefore is to use the SPC's 30 percent EEZ estimation.

Using the 30 percent formula for the year 2016, the year in which the revenues from these fees was K436.23 million (USD128.8 million), would give you K130.87 million (USD38.64 million). That is, 0.3 (30 percent) multiplied by K436.23 million (USD128.8 million). By 2016, revenues collected internally by ABG were K2.4 million (USD0.71 million) (Chand, 2018). A potential K130.87 million (USD38.64 million) would have been added to this internal revenue if the 30 percent formula was used for sharing the tuna revenues from licence and access fees.

Tuna revenues: Share from dividends

The second way Bougainville can maximise its tuna revenues is to negotiate for 30 percent of the dividends that National Fisheries Authority (NFA) pays to the PNG Government. The NFA has contributed K380.25 million (USD112.48 million) to the national government between 2001 and 2008. Starting from 2012, it was instructed to invest in impact projects in the fisheries industry, and instead pay 'dividends' to the government. Since then, NFA has paid K231 million (USD68.3 million), the highest in a single year being the K60 million (USD17.75 million) dividend paid to the government in 2017 (*Papua New Guinea National Fisheries Authority Newsletter*, Issue 02, May–August 2017). At the moment, these dividends are predominantly from the tuna licence and access fees. After the tuna revenues are collected, NFA budgets for the operating costs and fisheries projects, and pays the balance as dividends to the PNG Government.

The ABG can increase its tuna revenues by negotiating for a 30 percent share of the dividend NFA pays to the PNG Government. The advantage for negotiating for dividends instead of licence and access fees in general is that the dividends are paid after the operating costs, such as MSC and fisheries projects, are settled. The ABG may therefore not be required to pay for the costs, which it may be required to do if ABG prefers direct revenues from licence and access fees. With the 30 percent share, for instance, ABG would have received K18 million (USD5.32 million) of the K60 million (USD17.75 million) that was paid to the national government in 2017. This amount is less than the share that Bougainville can get from licence and access fees, which stand at K130.87 million (USD38.64 million), using 2016 data. However, by opting for dividends, ABG can avoid paying operating and fisheries project costs. Due to a lack of publicly available data, it is not possible to calculate how much NFA spends on operating costs such as MSC and fisheries projects.

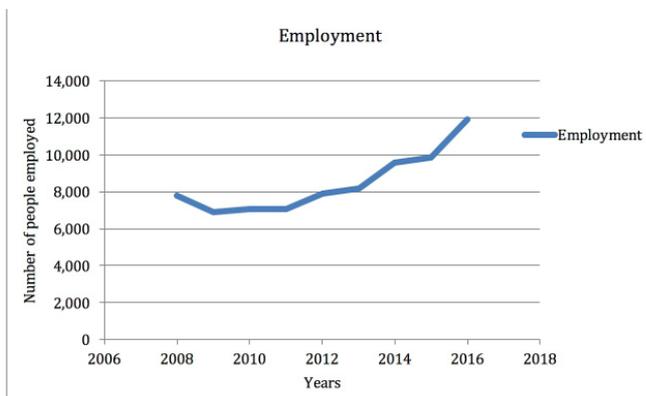
Another disadvantage of negotiating for licence and access fees, such as VDS, is that these fees will continue to decrease. With the PNG Government requiring companies to process

their catch 100 percent in PNG in exchange for reduced licence and access fees, discounts for VDS charges will continue and, for some, be completely eliminated. This means that relying on licences for tuna caught within Bougainville waters would not be a sustainable option for Bougainville under the current arrangement, where decisions by the PNG Government are binding on Bougainville. This may change if the ABG is granted further autonomy to regulate licence and access fees for vessels fishing within Bougainville's EEZ, or votes to become independent in October 2019. At the moment, to avoid these limitations, the Bougainville government should negotiate to receive a share of the dividends paid to the PNG Government by NFA annually.

Further benefits of a tuna cannery

Tuna canneries rely on the intensive use of low skilled labour. Employment by canneries between 2008 and 2016, the period for which consistent data is available, shows an increase as shown in Figure 4. Data for 2017 is not available, but for 2018, NFA reported that the manufacturing industry on mainland PNG employed 40,000 workers, 90 percent of them were females (National Fisheries Authority, 2018).

Figure 4: Employment by tuna canneries in PNG



Source: FFA Economic and Development Indicators, 2017.

Another important advantage with manufacturing is that the Bougainville Government can negotiate with investors to have the canneries located in the areas in most need of employment such as South Bougainville. North Bougainville and Central Bougainville have always been economically more vibrant than South Bougainville. When the Panguna Mine gets underway, it will benefit Central Bougainville, where the mine is located. Government facilities and other businesses are concentrated in North Bougainville, providing some level of employment. This leaves South Bougainville as the most underdeveloped.

Below are other potential revenues the ABG Government can collect from tuna related businesses:

- Licence to fish – these are fees that the ABG Government can collect from either commercial or recreational fishing.
- Catch quotas – a national crew is always on board a vessel to ensure catch is within quota, and is appropriately compensated.
- Licence to buy and sell fish products.
- Licence to process fish products.
- Licence to farm or sea ranch fish.
- Licence to operate fishing vessels.
- Port landing tax – from commercial sales.
- Export tax (national level).
- Company and wage earner income tax (if the annual wage exceeds the minimum wage threshold).

Tuna canneries can also create spin-off benefits for local businesses. The manufacturing sector, in general, has a broad variation of linkages with intensive activities, providing domestic firms the opportunity to engage in spin-off activities (UNCTAD World Investment Report 2001, p. 138). There have been talks of reopening the Panguna Mine. Although this may bring much needed revenue for the Government, extractive industries such as mines operate virtually as enclaves, as the industry is capital intensive, recruits high skilled workforce, and has limited spill off effects (Alfaro, 2003). During its operation, economic activity from the Panguna mine was concentrated especially around the mine, and its dependence on machines and requirements for high skilled labour offered limited employment opportunities. Although there are spin-off benefits, linkages from the mining sector with the host economies elsewhere are always limited.

Revenue sharing agreement

To access any tuna revenues, the ABG and PNG Government will have to address the lack of a tuna revenue sharing agreement by invoking paragraphs 85 and 86 of the BPA. Paragraphs 85 and 86 provide for the two Governments to negotiate an arrangement for sharing resource revenue 'associated with Bougainville waters' (para 85 (a)). The phrase 'associated with Bougainville waters' includes tuna, and that an arrangement can be made on how the 30 percent estimated tuna caught within Bougainville waters (see discussions in previous sections) can be sufficiently compensated.

At the moment, Bougainville does not have any power to manage or legislate for fishing activities outside of three

nautical miles. This is the domain of the PNG Government. In April 2018, the ABG Department of Primary Industries and Marine Resources initiated plans to create the Bougainville Fisheries Marine Authority (*The National*, April 5, 2018). For this to work, the PNG parliament has to enact legislation giving power outside of three nautical miles of Bougainville back to the ABG. Bougainville can attain these rights as well if it becomes independent. Further work needs to be done in this area, including a water boundary agreement. Relevant stakeholders include the Justice Department, Office of the State Solicitor, and Office of the Surveyor General.

How about an independent Bougainville?

The arrangements for VDS and dividends discussed above are applicable for an autonomous Bougainville. If Bougainville becomes independent, it will first negotiate with PNG on the distribution of the VDS days. Bougainville then has to negotiate with PNA members to join the PNA. The 'dividends' from NFA will technically not be accessible to Bougainville. Bougainville will have to pay for the MSC costs on its own. The NFA introduced a web-based Fisheries Information Management System in 2017 and it has greatly enhanced the MNC efforts. An integrated technology now performs the following functions: vessel monitoring; vessel registration; vessel day scheme; crew registration; audit and tractability; monitoring control and surveillance; live access and photos; alerting visual and emails; electronic catch reporting; electronic licence registering; port sampling; catch traceability; observer management, track and electronic reporting; fish aggregate device tracking; industry access; and flag state access.

Bougainville can adopt this technology. In the short term after independence, Bougainville can 'rent' its Exclusive Economic Zone (EEZ) to PNG, and receive 30 percent of the dividends whilst NFA meets all the costs. Smaller PNA members have demonstrated that it is manageable. Tuvalu manages an EEZ of 900,000 square kilometres and in 2015 had an annual tuna revenue of USD22,250,000 or K75,215,928.87 (Betitis et al., 2017).

The tariff free, quota free, and global sourcing preference given to PNG by the EU will technically cease to apply to Bougainville with independence from PNG. Preferential access to the EU has been one of the main attractions for canneries in PNG (apart from rich fishing grounds and government incentives). Bougainville can negotiate with the EU for the same preference to be extended to an independent Bougainville.

Policy intervention

- The ABG and PNG Governments should use the marine revenue sharing provisions under sections 85 and 86 of the Bougainville Peace Agreement to negotiate an agreement for sharing tuna revenue.
- Because Bougainville waters constitutes 30 percent of PNG's EEZ, one way to share tuna revenues is to give the ABG 30 percent of the revenues generated from tuna related activities.
- Bougainville can negotiate for 30 percent of the 'dividends' the National Fisheries Authority pays the PNG Government annually; in this way it does not have to pay for operating and fisheries project costs.
- When considering tuna manufacturing, the ABG can invite investors to establish processing facilities in South Bougainville where economic activities are limited.

Conclusion

Whether Bougainville remains as an autonomous region of PNG or becomes independent, fiscal-self-reliance remains a crucial issue. Immediate revenues from tuna resources can be attained either through VDS rents or through a share of the annual dividends paid by NFA. The latter is more sustainable as these are payments made after MSC and impact project costs are accounted for. Tuna canneries present the greatest benefits for Bougainville, having proven to be the largest employer on the mainland. Strategically, the Bougainville Government can have the canneries set up in South Bougainville to provide employment for that part of the region where jobs are most needed.

An independent Bougainville requires more complex arrangements. The dividends share proposed above will technically cease to apply, unless an arrangement where Bougainville can continue to let PNG use its EEZ but pay Bougainville, is arrived at. Bougainville will have to negotiate with PNG and PNA members for a share of the VDS. To have market access to the EU, Bougainville will have to negotiate for the same preferences applicable to PNG.

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