Informal Note: Controlling and reducing FAD use through pricing

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Introduction

There is a recognised need for increased control and reduction of FAD use in the WCPO. Different approaches for managing FAD use have been discussed in previous WCFC meetings, including the current regime of FAD closures, FAD limits allocated by flag or coastal State, total closures, effort reduction and capacity management. This paper briefly discusses the concept of using a pricing model to influence fishing behaviour.

An important caveat to this paper though is that measures addressed at the purse seine fishery alone will not be successful in achieving the stated objectives for Bigeye tuna in the WCPO (explicitly agreed as FMSY, but with general agreement that this is an interim objective). Without significant reform and restructure in the management and operation of the tropical longline fishery, the current stalemate between competing national interests will not be resolved.

Concept

The concept of using price to influence behaviour is a simple one. Everyday people make decisions based on what they can afford. There is a well-established principle (the "willingness to pay curve") that describes this. As the price of a good or service increases, demand generally decreases.

Example:
Governments often use additional taxation to influence consumption of "problematic" goods such as tobacco and alcohol. One notable example is the increasing excise on tobacco products applied by the Australian Government. The excise has been progressively and aggressively increased as part of an integrated package (including mass media campaigns and packaging laws) over more than a decade. Once the current phased increase is completed cigarettes in Australia will be amongst the most expensive in the world. At the same time, the Australian Bureau of Statistics has reported significant decreases in the number of smokers (7% in males and 5% in females between 2001 and 2012 with a reported further 3.4% since that time). Given that smoking is the largest contributor to preventable illness in Australia, these numbers are significant.

As well as providing a direct disincentive to the purchase of tobacco, the excise provides the additional benefit of generating significant revenue to the Government. Billions of dollars have been collected through the excise and this is passed to the States to supplement the health care cost imposed by smoking. As such, the excise not only drives behaviour, but also addresses the cost of that behaviour.

In a commercial setting, decision making is slightly more involved as it involves a more explicit trade-off between expense and the expected revenue in return. However, that also makes it more certain to predict, as decision making is based on finance rather than other factors such as emotion, desire or addiction, which is the case in the example above.

A FAD charge will increase the cost of FAD fishing to industry, thereby creating a direct economic incentive for industry to reduce FAD use. The below figure shows how an increase in the cost of FAD fishing, through the introduction of a FAD charge, will reduce the demand for FAD days.

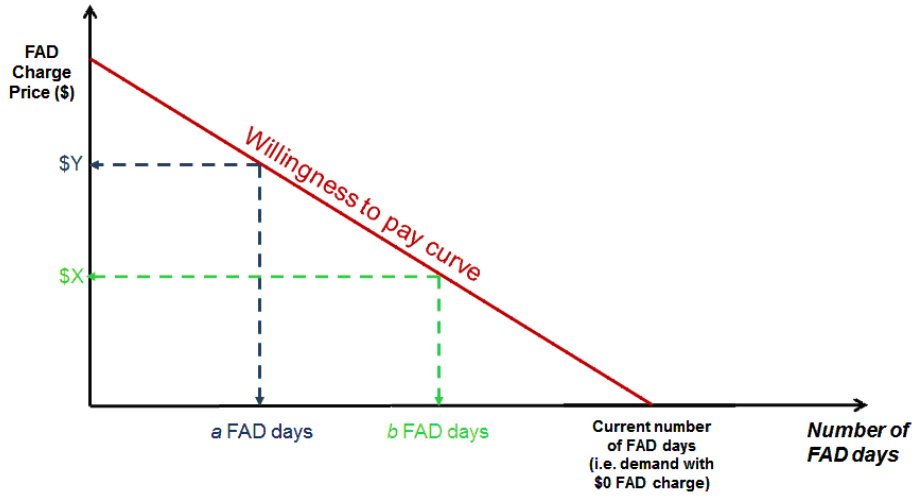

Figure 1 – In accordance with the "willingness to pay" theory, increasing the cost of FAD fishing by imposing a charge will decrease demand for FAD days.

Influencing fishing behaviour through a FAD charge has the additional benefit, as with the tobacco excise, of generating income to offset the cost of the bigeye management issue. This would be a key factor in addressing the largest challenge in the WCPFC at the moment – disproportionate burden on Small Island Developing States.

A FAD charge addresses some of the disproportionate burden by placing the burden of bigeye conservation on those that are doing the harm to bigeye populations. It puts the cost back on the primary beneficiaries of FAD fishing; industry. At the same time, a FAD charge provides increased flexibility to industry in comparison to the FAD closure, by allowing industry to undertake FAD fishing when and where best suits their business model. Under a FAD day charge approach, FAD fishing will simply occur where vessels most value the opportunity to FAD fish.

What does a FAD charging measure look like?

One of the key issues with the current CMM approach is that it undermines the VDS. FAD closures reduce the flexibility that industry has in the way it fishes and therefore devalues fishing days. The flag based limits that are an alternative to the closures address the flexibility issue to a degree, but in

a way that devalues the rights held by PNA Parties.

A FAD charge is most appropriately introduced in conjunction with the VDS, by Parties simply including a premium through whatever mechanism they use to sell days. For greatest effectiveness such a model would not prescribe a number of FAD sets for the fishery, but each fleet or vessel would have the opportunity to purchase as many or as few FAD sets as it saw fit.

Implementing such a measure through the VDS effectively accounts for about 80% of the fishery, but a significantly lower proportion of bigeye mortality. The main factor for WCPFC to address would be how to complement such a measure with:

- Reform of the longline fishery;
- Compatible PS measures on the high seas (noting that the high seas will be closed to FAD fishing in 2017 regardless);
- Compatible PS measures in other EEZs; and
- Compatible measures on other fisheries impacting on bigeye, such as small gear fisheries in Indonesia and Philippines.

It should be noted here that "compatible" does not mean identical. It may be that a different mechanism is more appropriate in other areas, but those mechanisms should achieve the same objective and all measures should work together rather than undermining each other.

Setting the price

The key challenge for such a model is to find the appropriate price point to deliver the sustainability objective. The use of pricing to reduce FAD fishing does not have the same certainty that a limit on FAD sets would provide with regards to bigeye conservation. However, it should bring about the same ultimate outcome through a more flexible and less divisive tool. Further to that, the implementation of such an approach would not be inconsistent with a longer term vision to implement a zonal Rights Based Management approach of FAD set limits, as a pricing scheme will provide a better tool for revealing the value of FAD fishing and the need for FAD use in different zones.

In a similar vein, a FAD pricing scheme is compatible with a longer term move to catch limits on each species if WCPFC and/or PNA had a desire to do so; because a charge on FAD usage is analogous to a charge per tonne of bigeye.

The key issue would be finding the right price differential to achieve the desired reduction in FAD sets. In practice, this would of course take some time because the "sweet spot" would vary across fleets and zones and depend on fish price and operating costs. In the short term it would be important to maintain FAD closures, but the intention should be to remove them altogether eventually.

Analyses suggest that the rent generated from a FAD day is around 50% greater than a free-school day, representing an average of over USD6,000 under early 2015 market conditions or around USD11,000 under 2013 market conditions[1]. The 50% premium is highly variable across fleets and vessels, but modelling suggests it is relatively stable to the effects of changes in the price of skipjack and yellowfin.

[1] Based on the Purse seine economic model developed by the PNAO which is not available in the public domain.

It should also be noted that accounting for costs can be complex and further modelling may be warranted to determine absolute costs vs revenue for FAD vs free-school days. Nonetheless the modelling and analysis undertaken to date, clearly suggests that vessels could afford to pay significantly more for a FAD day than for a free-school day. This also aligns with qualitative observations of the ongoing increase in FAD use in the fishery which is evidence of the clear economic benefit of FAD fishing, despite increasing pressure and regulations to reduce FAD use.

Given the difficulty of predicting the precise charge that will bring about a desired reduction, finding the optimal price to reduce FAD use to the desired level will rely on the price being "revealed" by industry (the buyers) through assessing the demand for a FAD day at a certain charge. As such, a responsible approach would be to set a conservative price for an initial trial period of one to two years, and if there remains a high level of demand for FAD days then it has been revealed that the price is too low and the price should be adjusted up. This adaptive approach means it is likely to take a few adjustments to the FAD charge before the price achieves the desired result.

Determining the desired result

While there would be no specific limit on the number of FAD sets in any given year, it would be important to have an idea of the target level to achieve the bigeye sustainability objective, or rather the purse seine contribution to that objective.

PNA and FFA members have espoused the principle that purse seine and longline fisheries should contribute equally to bigeye conservation. A 2013 SPC analyses presented to the SC indicated that a level of 11,314 FAD sets across the purse seine fishery (based on historical distribution) would approximate a 50% reduction in bigeye overfishing.

These calculations only examined purse seine and longline and WCPFC should not lose sight of the growing impact that other fisheries have on bigeye, nor of the importance of those fisheries contributing to conservation.

Nevertheless, this figure appears a reasonable target to aspire to at least in the short term, and a useful reference point with which to measure any FAD set premium that is introduced. Using the adaptive pricing approach discussed above, a premium that results in more FAD sets than the target level obviously needs to be increased, while one that exceeds expectations could be lowered. In the mid to long term, the performance of the FAD charge could be linked to a more explicit bigeye mortality reference point, where the price is regularly adapted to achieve bigeye mortality targets. This would require compatible adaptive bigeye mortality management mechanisms in place in the longline fishery that could simultaneously be adjusted to achieve bigeye mortality and stock status objectives.

How does a FAD charge reduce disproportionate burden?

In essence the FAD charge reduces the disproportionate burden on SIDS by allowing more revenue to flow to SIDS coastal States, providing some compensation for the lost revenue due to bigeye conservation measures. For example, if a FAD charge of $3000 were to be applied, and it achieved a reduction in FAD fishing to 13,000 FAD days, then it would generate an additional $39 million for the coastal States where the FAD fishing occurred. While there are many factors that would affect how much revenue would be generated and to whom it flows, at a broad level the approach will allow coastal states to recoup more of the rent generated by industry when using FADs.

A FAD day charge reduces, but does not eliminate, the disproportionate burden of reducing FAD use

and this is why longline reform will always need to be a key component of any management strategy. Any reduction in FAD use through improved FAD management will reduce the amount of rent available in the fishery in the short term, therefore the potential fees are still reduced.

However, the benefit of this approach is that vessels have the flexibility to decide whether to set on a FAD or not, rather than more blunt tools like the four month closure, so that the level of lost rent should not be as great. More importantly, rather than coastal states being burdened with the cost of restricting bigeye catch, this is a "user pays" or "polluter pays" system where the cost to the bigeye population of catching bigeye is paid by the industry to the country in whose waters the damage is done.

Summary

This informal note describes a non-regulatory market-based approach to reducing FAD usage in the WCPO. PNA are committed to applying this model for purse seine fishing in their EEZs and it will be a matter for WCPFC to determine how and when to tailor existing EEZ measures (ie – when the charging model is effective enough to reduce or remove FAD closures) and how to complement the approach with reform of other elements of the tropical tuna fishery.