

## **Tracking and Monitoring**

### **Drivers (Why do we need to track and monitor FADs?)**

#### **Compliance**

The major tools to manage FAD Fishing Effort are time and/or area closures. The ability to track and monitor FADs is therefore critical for the enforcement of such actions. To be effective all FADs should have a tracking buoy attached upon deployment. This will also facilitate monitoring the number of FADs deployed per vessel where a limit has been introduced [1].

There is increasing concern regarding beaching events which are potentially damaging to vulnerable coastal habitats. At the very least an identification buoy will facilitate identification of the owner and potential liability; but more critically real-time, or near real-time FAD tracking provides an opportunity to intercept the FAD before it beaches. [2].

If a FAD drifts into an area where the associated P/S is not authorized to fish the dFAD may be abandoned with a potential for marine pollution and ghost fishing.

#### **Economic**

It has been suggested that a FAD Day Scheme may be feasible, whereby owners would be charged a fee for the number of active FADs they have in the water. Clearly such a scheme could only work if FAD deployment, retrieval and area of operation were closely monitored, as well as appropriation and leasing processes.

There are indications that high FAD densities may negatively impact CPUE, with the possibility that the effect may extend to free schools. [3] If correct, then a lower FAD limit would reduce operating costs [less FADs less Buoys] but would improve CPUE.

#### **Scientific**

Following on from the previous paragraph FAD tracking provides information on FAD density that may be analysed alongside CPUE data to enable analysts to make a recommendation for FAD numbers per vessel which optimizes CPUE across the P/S fleets.

FAD tracking provides information to help analysts and ultimately managers better understand FAD fishing dynamic and identify changes in fishing behaviour. This may in turn inform stock assessments and management actions.

Animations of FAD disposition/density present fishing activity by season and oceanographic changes – a powerful tool to help illustrate the complex physical and biological dynamics of regional fisheries.

If FAD acoustic information is made available for analysis, spatial information may be linked with info on fish species size and abundance to further inform stock assessment work.

#### **Mechanisms to administer FAD Monitoring and Tracking**

A system analogous to current RFMO VMS and RFV systems could be applied to Monitoring and Tracking FADs. The FAD would be registered, all FADs would be required to have a tracking buoy attached on deployment.

A dedicated FAD logbook, which characterizes the FAD for each FAD set, may be required.

#### **FAD Data ownership and management**

If the previous analogy of VMS and RFC is accepted, then similar rules may apply to FAD data ownership and management.

#### **Sharing information**

There are many examples of when it is logical to share FAD tracking information, noting that the exchange of information may occur at differing levels of governance, including:

- When a beaching even is imminent,

- When a dFADs moves to another jurisdiction or an area that is closed to FAD fishing, or where there is different legislation for the construction and/or design of FADs.
- When lost FADs may be ghost fishing
- For the provision of larger data more spatially comprehensive data sets for scientific analysis.

### **Where are we now and next steps**

Each of the RFMOs is moving forward with very similar aspirations, but their progress is not aligned, and they are moving at different rates in various areas. We note that objectives may vary between tRFMOs or groups, which will contribute to this. Often key subgroups in particular oceans, such as EU and PNA are moving forward independently of the tRFMO, hopefully to the benefit of all.

This Second meeting of the Joint Tuna RFMOs FAD Working Group, is an opportunity to consider what has been achieved to date, as well as the work in progress across the tRFMOs and by others. It is our hope that the report from this meeting will provide a good reference for decision makers to consider when prioritising future scientific research and management actions.

### **References**

- [1] Santiago, J., H. Murua, J Lopez and L. Krug. et al. *Monitoring the number of active FADs used by the Spanish and Associated Purse Seine Fleet in the IOTC and ICCAT Convention Areas.* Joint t-RFMO FAD Working Group meeting. Doc. No. j-FAD\_13/2017.
- [2] Zudaire, I. et. Al. *FAD Watch: a collaborative initiative to minimize the impact of FADs in coastal ecosystems.* IOTC-2018-WPEB14-12
- [3] Hampton J. et al. *What does well-managed FAD use look like within a tropical purse seine fishery?* Global FAD Science Symposium.

### **Recommended Reading**

Escalle L., et al. *Report on analyses of the 20162018 PNA FAD tracking programme.* WCPFC-SC14-2018/I-WP-09. <https://www.wcpfc.int/node/30938>

Lopez J., et al. *Review of IATTC Resolutions C-16-01 and C-17-02: Available information, data gaps, and potential improvements for monitoring the FAD fishery.* Doc FAD-03 INF-A. Third Meeting Ad-Hoc Permanent Working Group on FADs. May 2018.

MRAG Asia Pacific. *Monitoring of FADs Deployed and Encountered in the WCPO. Final Draft Report.* Sept 2016. WCPFC-2016-FADMgmtOptionsIWG02-04. <https://www.wcpfc.int/node/27787>