

FAD Watch: Fish Aggre- gating Device management of the future



ICS Conservation Officer uses dive skills to collect discarded rope from FADs entangled on reef

by Michelle Murray

The technique of using artificial structures that are deployed in the ocean to attract schools of fish has been used for centuries. Nowadays, these open ocean fish magnets are commonly known as Fish Aggregating Devices (FADs). FAD use has become the dominant practice in modern tuna purse seine fishing. They increase tuna catches with less effort being required. FAD structure has now evolved from wooden rafts to metal structures with ropes dropping to depths of over 40m and equipped with GPS buoys.

Despite the importance of FADs to the tuna fishing industry, there is a growing concern about their impact on the marine ecosystem. With the devices being deployed across the world's oceans, environmental organisations are becoming more vocal about the importance of managing the use of FADs. Serious concerns are being put forward regarding the effects of FADs on tuna stocks and for the bycatch which include vulnerable species like turtles. These concerns are worsened by

the thousands of drifting FADs that are lost or abandoned by fishing vessels every year, compounding an already serious marine debris problem. More attention is therefore being drawn to the ecological consequences of drifting FADs onto coral reefs and islands. This is a situation that is becoming increasingly common on the reefs and islets especially in the outer islands of the Seychelles. With no transparent system in place to regulate the deployment and tracking of this proliferating fishing gear as well as mitigate its negative consequences, many conservation scientists feel that we are actually gambling with the health of the ocean.

Island Conservation Society (ICS) has spared no effort in drawing attention to this issue and lobbying support on how to solve this problem. Concerned by the lack of data on the impact of FADs in Seychelles' EEZ, ICS initiated the FAD WATCH programme in 2016. FAD WATCH is a collaborative programme between several organisations with the aim of preventing and mitigating Fish Aggregating Device (FAD) beachings across islands in Seychelles where the ICS has a presence. A Memorandum of Understanding (MoU) was signed on the 5th July 2016 by the Spanish Purse Seining Fishing Fleet (OPAGAC), Island Conservation Society (ICS), Islands Development Company (IDC) and the Seychelles Fishing Authority (SFA). Under this programme, ICS is responsible for the implementation and overall coordination of activities. The fishing companies associated under OPAGAC agreed to provide real time information of their FADs when drifting into the sensitive ecosystem areas determined by ICS. With the assistance of the 'buoys' manufacturers (SATLINK and MARINE INSTRUMENTS) an automated alert system was setup at ICS that reported whenever a FAD arrives within 5 nautical miles of any atoll where ICS has a permanent presence, and provide GPS co-ordinates, trajectory and estimated projected time of beaching. This allowed ICS staff time to plan and intercept these FADs before beaching occurs, damages

to reefs and/or impacts on key marine fauna. IDC provided logistical support to ICS in the removal and storage of the FADs awaiting collection by the fishing vessels. As much as possible the FADs were collected, recycled and reused by the fishing companies. Data was also being collected by ICS describing the types of FADs and the impacts caused. This programme was made possible through the financial contribution from OPAGAC. It is a World first and provides a template for collaboration between various stakeholders that have different interests but can work together in order to address a serious problem.

Two years into this programme the preliminary results formed the basis of a paper presented at the Indian Ocean Tuna Commission's (IOTC) 14th Working Party on Ecosystems and Bycatch (WPEB14) held in September 2018 in South Africa. The FAD detection system was setup by OPAGAC for 6 buffer areas (Alphonse, Farquhar, Desroches, Poivre, Aride and Silhouette islands), which alerted ICS when FADs crossed buffer zones within 5 and 3 nautical miles of any of these islands. For each intercepted FAD, ICS collected information about the location, habitat type, purse seiner vessel, FAD design, entangled fauna, and fate (removed or not; & disposal method). In order to evaluate the beaching rate and entangling potential of FADs of the target fleet, information was complemented both by buoy-tracked data and by data collected on the voluntary agreement for the application of good practices. For FADs tracked in EEZ of Seychelles only 0.8% in 2016 and 0.5% in 2017 impacted the coast of the archipelago. During this period, a total of 19 FADs were intercepted by ICS in the buffer areas. FADs crossing EEZ of Seychelles and the beaching events have been reduced by 20% and 41% respectively, during 2016 to 2017 period.

The aim of undertaking this analysis was to extend the collaborative approach with all stakeholders in Seychelles and internationally about the scale of drift-



ICS Conservation team transport FAD in ICS boat at St François

ing FADs in our EEZ and the need to better monitor and improve the existing regulation of those devices at international level (IOCT), because this equipment knows no borders and is indiscriminate in its effects. With more and improved data our understanding of the extent of the problem can improve, and, lead to more efforts being invested in improving the design of eco-friendly FADs. Ultimately, the end result rests on the important responsibility of our decision and policy makers to adopt more ambitious management measures, learning from the positive experience of FAD WATCH to make the tuna fisheries industry more sustainable in Seychelles.



ICS Conservation team attempt to collect a FAD found afloat near Alphonse Island



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