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## International Pole & Line Foundation Fishery Improvement Toolbox

**Introducing bird radar to further promote free school fishing efficiency in the Maldives**

### **IPNLF FIT CASE STUDY SERIES**

**FISHERY IMPROVEMENT TOOL: ECOSYSTEM AND  
MANAGEMENT TOOL AREA 2.5**

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# INTRODUCTION

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Birds are nature's ultimate fish finders, because they glide above the ocean utilising senses adapted over millions of years to detect schools of feeding fish close to the ocean's surface. Fishers have long used bird sightings to inform their search for fish. However, advancements in modern radar technology have allowed the development of radars that can detect flocks of birds all the way to the horizon, drastically increasing the range at which fishers can detect feeding birds. This technology is known as 'Bird Radar'.

The Maldivian pole and line fishery has worked in balance with nature since its inception many centuries ago, and it has become widely recognised as a prime example of a sustainably managed and operated, low-impact tuna fishery. Nonetheless, Maldivian fishers have become entrenched in some of their fishing practices, following time-honoured traditions in the fishery that have remained unchanged for centuries and have not kept pace with modern technological advancements. In the modern, globalised and highly competitive world, traditional fisheries also need to produce high-quality, sustainably caught fish at competitive prices and volumes.

## Activities

IPNLF, in collaboration with our members World Wise Foods, American Tuna and the Ministry of Fisheries and Agriculture and Marine Resources for Maldives (MoFMRA) brought master fisher, Mr Jack Webster, from the American West coast tuna fishery to the Maldives to see how Maldivian fishers could sustainably improve the efficiency of their operations. It was observed that Maldivian captains and crews could more efficiently target free-school tuna through the below improvements:

1. Using horizon stabilising binoculars to help crew members more actively participate in the search for free-schools
2. Making use of bird radar to help detect flocks of birds all the way to the horizon where they may be feeding among free-schools of skipjack tuna at the ocean surface.



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'Julie' - the first fishing vessel to trial bird radar technology

IPNLF partnered with radar manufacturers, Furuno USA, to trial Bird Radar for 3 months onboard a pole and line vessel. An engineer from Furuno Singapore came to the Maldives to install the bird radars, monitor the test phase and make adjustments to the set-up as required. IPNLF also deployed their own fisheries observers on the test vessel to monitor the effectiveness of Bird Radar and its use by the crew.

Partnering with the right vessels is key to the success for testing new technologies or fishing techniques, so this project leveraged the network, experience and reputation of IPNLF staff and observers to identify and successfully engage the right fishing partners.



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Engineer installing Furuno bird radar technology to the fishing vessel known as 'Julie'



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Display on the radar screen, fishers can track up to 3-6 flocks of seabirds whilst searching for tuna schools

## OUTCOMES

Bird Radar allows fishers to more effectively locate free-schools of skipjack tuna, even beyond the line of sight. This improves their free-school harvest efficiency, resulting in more sustainable harvests.

Targeting free-school skipjack results in harvesting greater numbers of large, mature skipjack tuna while catches of juvenile yellowfin tuna, that traditionally school together with the skipjack tuna, are reduced. From a sustainability perspective this is a win-win situation as the fishers can catch fewer of these larger fish to fill their holds while at the same time reducing their catch of juvenile yellowfin tuna. From an operational perspective, the catch is also 'cleaner' with less sorting required and the purely-skipjack catch being ideal for the canning market. Ultimately, less fish are harvested for better yields and better profits while incurring a lower environmental impact.

## OUTCOMES

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Thanks to Bird Radar, in addition to the sustainability and operational benefits discussed above, less time, effort and fuel is also used while searching for free-schools. This provides further cost savings and further reduces the carbon footprint of fishing operations.

IPNLF secured the services of the pole-and-line fishing vessel, the 'Kandu Roalhi', to test this new technology. As with other trials, IPNLF's local relationships and linked ability to partner with vessel owners who are well respected and influential in the local community, and who are willing to rigorously test and subsequently adopt and promote new technologies, was a key factor that contributed to the success of the trials.

Anecdotal evidence and discussions with progressive Maldivian skippers indicate that a strong business case exists for the further uptake of bird radars in the Maldivian pole-and-line fishery. IPNLF will continue to support and promote the adoption of Bird Radar technologies throughout the Maldivian fleet. After the initial trial, a local company was established to distribute and install bird radars on Maldivian pole-and-line vessels and at least 15 additional vessels have now installed these devices. Feedback from these early adopters suggest that the benefits of Bird Radar use are continuing to pay dividends.



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Vessel 'Kan'du Roalhi' with a Kuruno bird radar installed at the top of the vessel. The radar rotates and detects flocks of birds to assist fishers in locating schools of tuna

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# RESOURCES AND ABOUT

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## Resources

Find out more about Kan-du Roalhi at the vessel's Facebook page - <https://www.facebook.com/KanduRoalhi/>

Browse Furuno's technology here - <https://www.furunousa.com/en/products/>

## About IPNLF

The International Pole and Line Foundation (IPNLF) promotes the sustainable management of the world's responsible pole-and-line, handline and troll (collectively known as 'one-by-one') tuna fisheries while also recognising the importance of safeguarding the livelihoods they support.

IPNLF's work to develop, support and promote one-by-one tuna fisheries is subsequently fully aligned with the 2030 Agenda for Sustainable Development. We believe effective and equitable global governance is essential to protect and restore the ocean, and this should be achieved by ensuring the participation of local and coastal communities in decision-making processes.

Environmental sustainability in tuna fisheries can only be fully achieved by also putting an end to the overfishing and destructive fishing practices that are driving the degradation of already threatened marine species, habitats and ecosystems. Allied with its members, IPNLF demonstrates the value of one-by-one caught tuna to consumers, policymakers and throughout the supply chain. IPNLF works across science, policy and the seafood sector, using an evidence-based, solutions-focused approach with strategic guidance from our Board of Trustees and advice from our Scientific and Technical Advisory Committee (STAC) and Market Advisory Group (MAG).

IPNLF was officially registered in the United Kingdom in 2012 (Charity 1145586), with branch offices in the UK, South Africa, Indonesia, The Netherlands, and the Maldives.

## About FIT

IPNLF are the global one-by-one tuna fishery and supply chain specialists, and the Fishery Improvement Toolbox (FIT) provides a framework whereby we can offer tailor-made project support and consultancy services to our members. When IPNLF members seek to demonstrate their responsible seafood sourcing on IPNLF's Sourcing Transparency Platform (STP), they can also target strategic improvements to specific seafood supply chain issues by engaging IPNLF directly through its FIT. The FIT is designed to work collaboratively alongside IPNLF's STP and when combined, these tools offer members a way to transparently demonstrate their ongoing improvements and responsible performance to all stakeholders in seafood supply chains, including end-consumers.

The FIT also provides a clear pathway to our members so that they can actively engage in collaborative improvements made in the fisheries they source from, and in their associated supply chains. The FIT is underpinned by a holistic understanding of sustainability, offering a framework for social, economic, environmental and operational improvements. The FIT has five main components that will help facilitate targeted improvements in one-by-one supply chains:

- Social Responsibility
  - ToolEcosystem and Management Tool
  - Traceability Improvement Tool
  - Plastic Neutrality Tool
  - Seafood Quality Assurance Tool
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