

Biodiversity Challenge Funds Projects Darwin Initiative, Illegal Wildlife Trade Challenge Fund, and Darwin Plus Half Year Report

Note: If there is any confidential information within the report that you do not wish to be shared on our website, please ensure you clearly highlight this.

Submission Deadline: 31st October 2022

Project reference	DARNV002
Project title	Innovation of Bait Fisheries for Live-bait Conservation
Country(ies)/territory(ies)	Maldives
Lead partner	IPNLF Maldives
Partner(s)	IPNLF and SNTech
Project leader	<i>M Shiham Adam</i>
Report date and number (e.g. HYR1)	<i>HYR1</i>
Project website/blog/social media	https://ipnlf.org/unlocking-a-huge-potential-for-ocean-conservation-and-climate-change-ipnlf-maldives-and-sntechs-innovation-seeks-to-limit-wild-caught-bait-fish-in-pole-and-line-tuna-fishing/

1. Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

- Due to a late paperwork signing the project commenced 18 May, 7 weeks later than indicated in the project logframe. However upon discussion with LTS it was agreed that project activities can be expedited in order to still complete project deliverables within the project timeframe with no budget adjustments.
- In August IPNLF Maldives kicked off our field data collection for the project, starting with underwater filming to record the baseline for skipjack feeding behaviour. The initial recordings look great, but due to poor weather, fishing conditions and crew sickness, we were unable to get as many sea days as we had hoped. However the Maldives field team will continue with baseline data collection when the fishing season picks up, with baseline trips scheduled in November and December.
- There was a research and development process to construct a camera rig out of stainless steel to film skipjack feeding behaviour from underwater. Several modifications were required in order to firmly attach the rig to the vessel without modifying the hull of the vessel with drilling or screws, whilst still being able to endure the enormous drag that is produced as the vessel moves through the water. Three modifications were required on land, along with three at-sea R&D trips before the current design produced an easily deployable and adjustable rig that produced clear and stable underwater footage that can be used to film skipjack feeding response from below.
- The initial desk study looking at baitfish alternatives has been drafted. During the research we made an exciting discovery that auditory stimuli (sound) might be successful in eliciting a feeding response in tuna, as indicated by several sources, most promisingly an expired patent from 1972. This is a very exciting find indeed and has prompted a lot of interest amongst our research team to experiment with sound scape, as well as a combination of light, sound and olfactory stimulation to elicit a feeding response in tuna. This is something we wish to explore further. As a result, we also added Gert Le Roux of Woolworths, South Africa to our project steering committee. Gert has previous experience in trialling the use of underwater sound to alter fish behaviour in

an aquaculture setting. Gert will advise on equipment needs and experimental protocols. SNTech will assist with implementation.

- We are currently in the process of planning the second phase of field trips to begin the experimental trials. This is being booked up for February - so exciting news to come.
- Several meetings took place between IPNLF and SNTech to discuss baseline and experimental protocols and data collection and storage protocols have been finalised and are currently being implemented with the baseline data collection.
- SNTech are currently undertaking a market assessment to estimate the size and economic status of the fishing fleets which may benefit from the developed technology in order to determine a target price-point for the technology.
- To date 4 days of at-sea field trials have been conducted on 2 pole and line vessels during the R&D phase of the camera rig. Five baseline fishing events have been recorded with the rest of the baseline fishing events to be filmed in November/ December 2022 during the peak fishing season.
- The first IPNLF press release for the project is overdue and will be published before 31st of October and will be shared with Darwin.
- The press release will be accompanied by the first social media posts which will be scheduled every 2 weeks thereafter.

2. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

Development of an underwater camera rig to film skipjack feeding behaviour for a baseline was more challenging than expected. The challenge was due several factors including: (1) positioning the rig in a location that does not interfere with fishing activity (2) Attaching the rig to the vessel in a way that does not require modification of the vessel hull such as drilling or screwing (3) Able to withstand the drag created by the 3000 HP engines

During the field trip in August 2022 to commence data collection for the baseline treatment, a total of 20 days were spent in the field, with more than 8 days spent on the vessel in harbour. This whole period resulted in only 4 full sea days, and only 3 sea days in which we were able to capture some of the baseline trials. This was largely due to an unseasonal shift that occurred in August, leading to conditions in which (1) the weather was unpredictable with the wind direction shifting causing choppy sea conditions, (2) unpredictable bait fish catches, increasing the risk of financial loss to vessels when going to sea, only to not catch enough baitfish to go tuna fishing, (3) poor/unpredictable tuna catches reducing the profitability of vessels that went to sea (with some vessels not even breaking even) (4) unexpected crew illness, with our primary research vessel having more than 50% of the crew experiencing some sort of illness (not confirmed whether this was COVID-19 or not).

3. Have any of these issues been discussed with NIRAS-LTS International and if so, have changes been made to the original agreement?

Discussed with NIRAS-LTS:	No
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Formal Change Request submitted:	No
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Received confirmation of change acceptance	No
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Change request reference if known:

4a. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

4b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a re-budget Change Request as soon as possible. There is no guarantee that Defra will agree a re-budget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

5. Are there any other issues you wish to raise relating to the project or to BCF management, monitoring, or financial procedures?

Nothing to raise

If you are a new project and you received feedback comments that requested a response (including the submission of your risk register), or if your Annual Report Review asked you to provide a response with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with NIRAS-LTS International through a Change Request. **Please DO NOT send these in the same email.****

Please send your **completed report by email** to BCF-Reports@niras.com. The report should be between 2-3 pages maximum. **Please state your project reference number, followed by the specific fund in the header of your email message e.g. Subject: 29-001 Darwin Initiative Half Year Report**