



Press release

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Seychelles to trial intelligent drones to protect its fisheries

A multi-agency coordination workshop took place on 31 July 2018, as the archipelago will be the first nation in the Western Indian Ocean to monitor large marine areas using a combination of short and long-range drones equipped with Artificial Intelligence to combat illegal fishing. The pilot project will be coordinated by the Seychelles Fishing Authority (SFA) and be integrated in the fisheries patrol routines of the Air Force (SAF) and the Coast Guard (SCG).

Conventional aerial and naval assets are very costly to run, which means that most developing coastal states are not able to conduct at-sea patrols to enforce their fisheries laws on a regular basis. Illegal operators are well aware of the enforcement gaps, and that's why countries like the Seychelles have become a target for many unauthorized fishing operations, including by foreign distant water fleets. To address these challenges, new solutions are being tested in various parts of the world to monitor Exclusive Economic Zones (EEZs) using remote sensing technologies.

“FishGuard” is a technological solution to tackle illegal fishing that allows fisheries enforcement agencies to use drones equipped with Artificial Intelligence (AI), and will be tested in the Seychelles. The project stemmed from a support request from the Seychelles Fishing Authority (SFA) to GRID-Arendal, a UN Environment Collaborating Centre, through its Environmental crime program to help them identify a cost-efficient solution to monitor the country's vast EEZ and protect its valuable fish resources.

Until now, the use of drones for patrolling large marine areas has faced technological restrictions, mainly due to range limitations and prohibitive costs. By replacing the human interaction (remote radio control) by an AI software, ATLAN Space, a Moroccan startup, has been able to significantly increase the operational range of low-cost drones. With FishGuard, SFA will test the integration of a fisheries information system into the drones' software in order to allow them to “understand” the operations their on-board cameras are capturing.

Test flights will be conducted in October, and a multi-agency workshop was organized by SFA last week to define roles between key agencies. The Seychelles Air Force was designated to operate the drones for the duration of the pilot project. The Coast Guard will support the project by providing a vessel for at-sea deployment of the drones, and the Seychelles Civil Aviation Authority (SCAA) will ensure that safety requirements are met and required flight authorizations are obtained. Trygg Mat Tracking, a Norwegian non-profit specialized in providing fisheries intelligence and analysis to countries to combat illegal fishing, will support the pilot program by facilitating the transfer of critical information from SFA and global databases (such as fishing authorizations, vessel pictures, IUU lists, etc.) to ‘arm’ the drones' AI, and to provide analytical support and training based on the data that is sent back from the drone patrols. GRID-Arendal will further support with the provision of relevant Earth Observation data.

With this unprecedented combination of short-range drones, autonomous long-range UAVs, Earth Observation data and fisheries intelligence analysis, it is expected that the pilot project in Seychelles will help the authorities to identify illegal fishing operations, trigger enforcement actions and crucially produce a deterrent effect on illegal activities. This should significantly decrease the impact of IUU fishing on the Seychelles' marine resources and the people who depend on them.

It is hoped that by demonstrating the cost-efficiency and effectiveness of the system, the Seychelles will pave the way for the solution to be adapted to other uses (such as Marine Protected Area monitoring) and rolled-out in other countries where fisheries enforcement lacks presence at sea. This pilot project is generously funded by the National Geographic Society after it was selected as one of the winning proposals of the 2018 Marine Protection Prize, and the outcomes are expected to be presented in one year.



Image 1: Multi-agency meeting at the Seychelles Fishing Authority showed high interest for the project. Present: Ministry of Fisheries and Agriculture, Seychelles Fishing Authority, Seychelles Coast Guard, Seychelles Air Force, Seychelles Civil Aviation Authority and FishGuard Partnership representatives.



Image 2: Working meeting with the Fisheries Monitoring Centre (FMC) at the Seychelles Fishing Authority: FishGuard Partnership members work with Mr. Roddy Allisop, Manager (Monitoring and Control)



Image 3: FishGuard partners Badr Idrissi (ATLAN Space - left) and Yann Yvergniaux (TMT - right) discussing at-sea drone launch with the Coast Guard Lt. Morel (center)



Image 4: The Coast Guard patrol ship to be used for the project's at-sea test flights

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