



Food and Agriculture
Organization of the
United Nations

17-21 October 2022

FAO SCIENCE AND INNOVATION FORUM

Harnessing science, technology
and innovation for transforming
our agrifood systems

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SIDE EVENT

11:00-12:00 | VIRTUAL

13
October
2022

Marine and coastal aquaculture detection and monitoring using free satellite data

A demonstration of innovative aquaculture cage and pond detection based on satellite data analysis and AI. The H2020 Blue-Cloud project combined innovations in satellite data analysis and spatial data management in a scalable and powerful e-infrastructure that makes IT accessible also for resource poor organizations.

Speakers: Anton Ellenbroek (FAO - Italy), Jeremy Augot (CLS - France), Tarunamulia (National Research and Innovation agency - Indonesia)

REGISTER

Marine and coastal aquaculture detection and monitoring using free satellite data

Side event organized by

Food and Agriculture Organization of the United Nations

CLS - France

Indonesian National Research and Innovation agency

Background and rationale

Aquaculture is the fastest growing food production sector globally for the last 50 years, growing at an average of 5.3 percent per year since the turn of the century. FAO promotes Blue Transformation, a visionary strategy to meet the twin challenges of food security and environmental sustainability while ensuring equitable outcomes and gender equality. Blue Transformation is a process to maximize the contribution of aquatic food systems to enhance food security, nutrition and affordable healthy diets, while remaining within ecological boundaries.

To assist with this Blue Transformation, accurate and reliable information on aquaculture sites is essential. Remote sensing can provide a solution for the detection and monitoring of sites and activities.

We will show an example of an innovative, scalable, and replicable approach to remote sensing data analyses for aquaculture. This collaboration between CLS and FAO and expert advice through the Indonesian National Research and Innovation Agency aims to provide cost-effective and replicable solutions. Our approach detects aquaculture and validates the remote sensing analysis with ground-based inventories of farms.

The result is an Aquaculture Atlas in the cloud. We will introduce innovations in geospatial data analysis applied to cage detection based on S1 radar and coastal land-use classification based on AI analysis of S2 optical data.

Our data science approach is open, and we welcome initiatives that want to use and further develop the Atlas. The Atlas received substantial support from the H2020 program, and is currently supported by the H2020 project Blue Cloud - Grant Agreement No.862409.

AGENDA

11:00–11:10

OPENING

Welcome and introduction

Anton Ellenbroek, consultant H2020 Blue Cloud, FAO NFIS

11:10–11:50

The Aquaculture Atlas Approach

The detection of marine floating cages - Sentinel 1 radar example

Jeremy Augot, Data Scientist, CLS France

The detection of large aquaculture pond areas - Sentinel 2 optical images AI analysis example

Jeremy Augot, Data Scientist, CLS France

The validation of AI generated maps of aquaculture ponds in South Sulawesi

Tarunamulia, Senior researcher, Indonesian National Research and Innovation Agency

11:50–12:00

Q&A