



2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development

**CASE STUDY**

A living lab for sustainable fisheries

# VISTOOLS

**By Hans Polet**

Scientific director & engineer at ILVO,  
Animal Sciences, Fisheries & Aquatic Production

  
**ILVO VLIZ**



# A living lab for sustainable fisheries management in Europe

## EU PRIORITIES 2024 - 2029



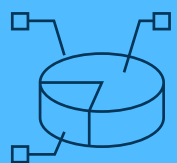
**Digital transformation**



**Ecosystem-based management**



**Sustainable Blue Economy**



**Data-driven policy**

## Summary

The VISTools project is a Belgian initiative modernizing how fisheries are monitored and managed. It addresses a growing disconnect between science, policy, and the day-to-day reality of fishers.

The project is built on a trusted collaboration between Belgian fishers, scientists, and institutions. By combining real-time and vessel-level data, VISTools allows for a precision fishery. This foundation offers a new operational model for smarter, data driven fisheries management.

## The fishers are on board and the technology is ready

The VISTools suite is already operational in the majority of the Belgian fleet, demonstrating the engagement of the industry. Our living lab proves that digital innovation and social innovation can go hand in hand.

What's needed next is policy support to scale this breakthrough beyond national waters.



# A system under pressure

After decades of largely unregulated fishing, causing overfishing and environmental harm, the Common Fisheries Policy introduced rules and data collection to guide fisheries toward sustainability.

Over time, this management system has grown increasingly complex. The industry has become layered with technical rules, overlapping regulations, and patchy data systems.

This complexity has created friction, not only for fishers, but also for scientists and policymakers charged with improving sustainability.



## Eroded trust

Today, many vessels operate under constraints that disconnect them from fish migration patterns, economic viability, and evidence-based practices. Fishers are losing trust in the system and increasingly question the intent behind fisheries management.

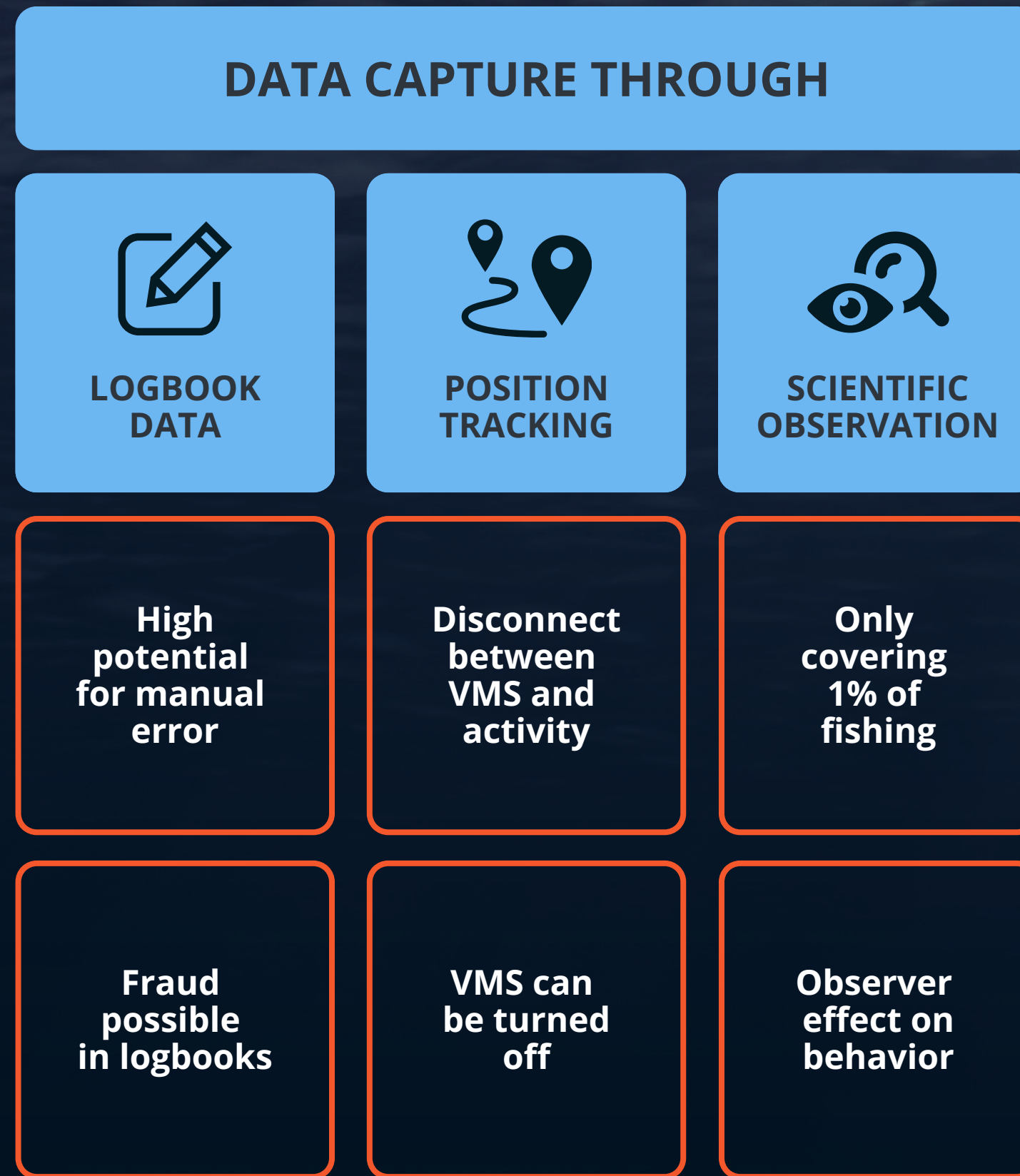
Meanwhile, new restrictions and regulations continue to be made based on fragmented data. These challenges are not unique to any institution; they are symptoms of a system that has outgrown its tools and effectiveness. The door is open for innovation.



# Why the low resolution data?

## The roots of the data gap

Fisheries data is often slow to arrive and inconsistent across fleets. This is not due to unwillingness, but rather to outdated infrastructure and systemic limits on how data is captured and shared.



## A cascade of distrust

Fishers often don't know how their data is used, or worry it might be used against them rather than to improve practices.

Scientists work with incomplete or delayed data, limiting accuracy.

Policymakers make decisions in the dark, disconnected from real-time activity and ecosystem changes.



# Current issues with low-resolution data capture

## LOGBOOK DATA

Number of vessels

## LOGBOOK DATA

Fishing patterns

## LOGBOOK DATA

Quality control

## LOGBOOK DATA

Fraud

## MESH SIZE

Compliance

## ENGINE POWER

Fraud & CPUE

## FISHING METHODS

Non-quota species

## FISHING METHODS

Increasing capacity

## DISCARD DATA

Observer effect

## DISCARD DATA

Low coverage

## young fish surveys

Reliability

## DATA COSTS

High costs

## STOCK ASSESSMENT

Natural mortality, etc

## STOCK ASSESSMENT

Detached from reality

## STOCK ASSESSMENT

Time lag in process



# Towards real time fisheries intelligence



VISTools takes a different approach, transforming vessels into high-resolution data recorders. By equipping vessels with smart sensors, the system delivers accurate, real-time data. This creates a feedback loop based on transparency and enables precision fisheries management.

This systems builds trust and a collaborative environment, as benefits fishers, scientists, and policymakers alike.

## OPERATIONAL IN THE FLEET

**GPS**  
TRACKING

**CATCH**  
SPECIES ANALYSIS

**FUEL**  
MONITORING

**TRACTION**  
FORCE

## CURRENTLY IN DEVELOPMENT

**CAMERA**  
AI MODELS

**eDNA**  
SAMPLING

**LARVAL**  
RECRUITMENT

**TRL**  
TECHNOLOGY  
READINESS LEVEL

**TRL**  
**7**

**TRL**  
**5**

**TRL**  
**1**



# Operational on 37 vessels of the Belgian fleet





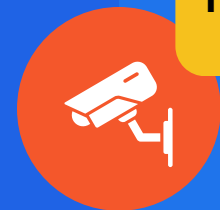
# Onboard VISTools sensor suite



GPS LOCATION

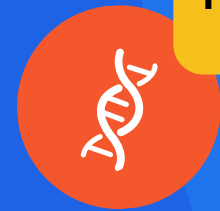


SCALE



TRL  
7

CAMERA + AI

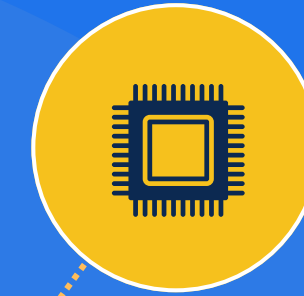


TRL  
5

eDNA



CONCENTRATOR



TRACTION SENSOR



FUEL METER



WEATHER DATA



SUBSURFACE SENSORS





# A social innovation

The strength of this project lies in genuine relationships, hands-on experimentation, and open collaboration.

Over ten years ago, the foundation was laid with the Covenant for Sustainable Fishing. This multi-stakeholder alliance promotes trust, transparency, and shared responsibility among its members.

## A social promise



**Joint development  
of tools, models  
and metrics**



**Reflexive policy  
design rooted in  
local practice**



**Real time vessel  
monitoring with  
fisher buy-in**





# How VISTools supports policy implementation

VISTools strives beyond technological innovation. Because of the collaborative nature of the project, it can act as a delivery mechanism, designed to help achieve the EU's own policy goals.

By grounding policy innovation in real-world pilots like VISTools, we demonstrate that meaningful impact across European seas is within reach.



## **The Common Fisheries Policy (CFP)**

By improving stock assessments, enabling better catch monitoring, and encouraging fisher accountability through co-designed systems.



## **The European Green Deal**

By supporting sustainability transitions in ocean resource use and reducing the carbon footprint of fisheries via optimized fuel and traction data.



## **The EU Biodiversity Strategy**

By enabling data-driven protection of vulnerable habitats and species, through emerging tools like eDNA and real-time impact forecasting.



## **The Digital Twin of the Ocean**

By feeding high-resolution, real-time data into predictive models and marine spatial planning system, which strengthens the Blue Economy Strategy.



# European model in the making

Beyond local Belgian successes, VISTools is proving to be a replicable model for ecosystem-based, real-time fisheries management across Europe.

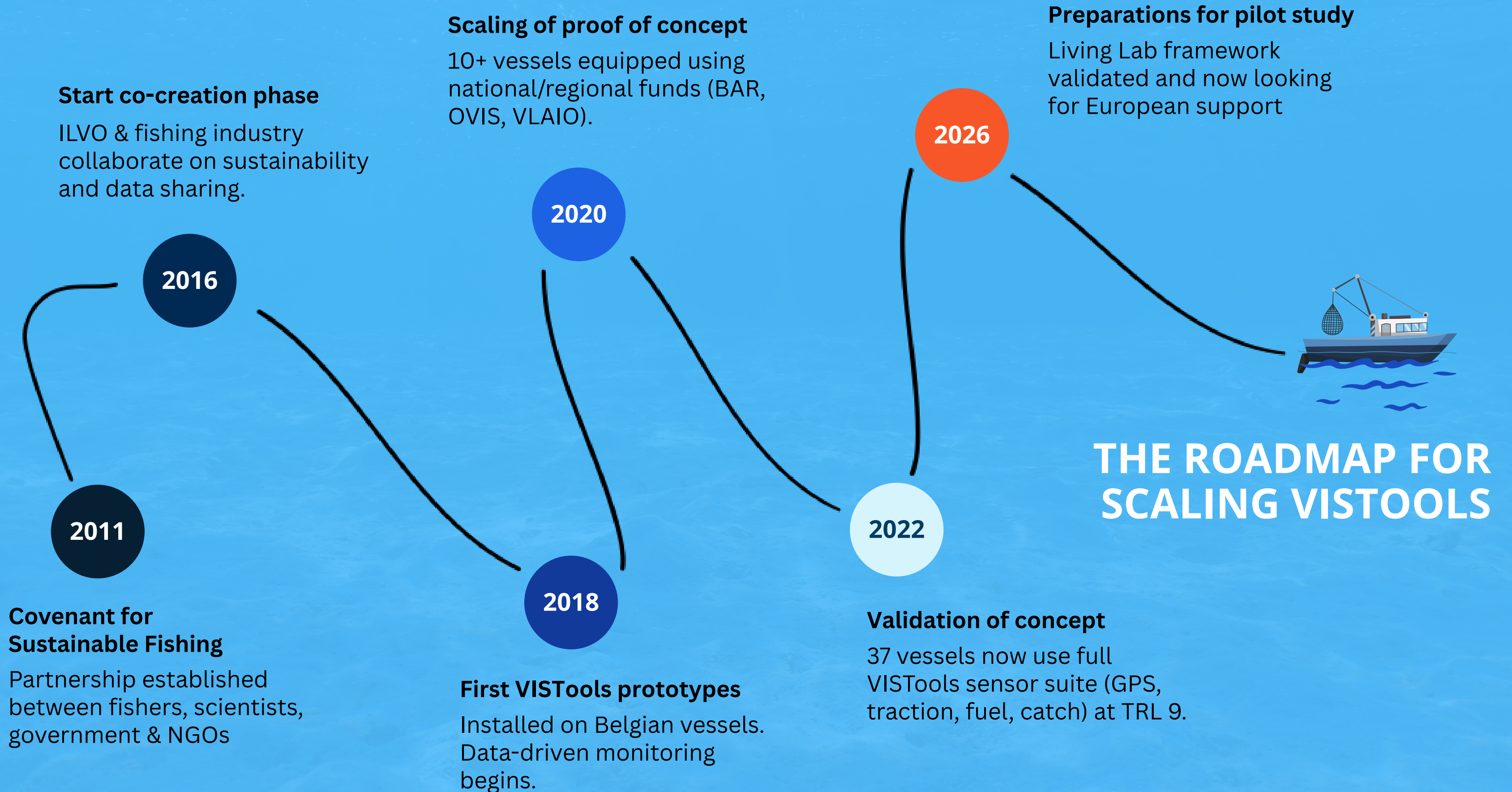
Our European climate is changing, fish stocks are impacted, and regulatory demands are evolving. These developments show that static reporting is no longer enough.

Europe needs flexible, high-resolution systems that can monitor, predict, and adapt. All without adding friction for stakeholders. That is exactly what VISTools offers the European Union.



We invite EU DGs and Member States to explore how the VISTools Living Lab can help modernize the Common Fisheries Policy for the 2024–2029 cycle.

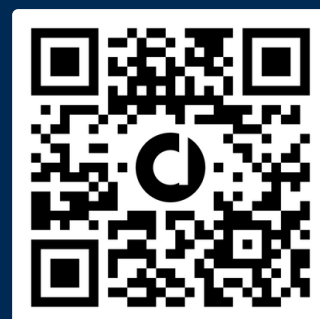








SCAN FOR MORE



ILVO VLIZ



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## WHAT'S NEXT?

We've built the foundations.  
The tools work. The community  
is ready. We are now looking for  
a pilot study.

Now is the time to bring  
policymakers, scientists, and  
fishers together to build a  
shared solution.

## CONTACT

For more information  
or partnership inquiries

Hans Polet  
Scientific Director, ILVO

✉ [hans.polet@ilvo.vlaanderen.be](mailto:hans.polet@ilvo.vlaanderen.be)  
🌐 [www.ilvo.vlaanderen.be/vistools](http://www.ilvo.vlaanderen.be/vistools)