
Assessing Seafood Supply Chains: New Public-Private Partnership Will Support Companies in Assessing IUU Fishing Risks Using Vessel Data

Phase 1

April 2022
Summary report





OVERVIEW

Illegal, unreported, and unregulated (IUU) fishing is estimated to represent up to 20% of catch worldwide, with losses to the [global economy](#) estimated between \$10-23.5 billion USD per year. The impacts of IUU fishing are far-reaching. Not only does IUU fishing take income away from [developing countries](#) and threaten coastal livelihoods, but it has also been [linked to](#) organized crime and human rights violations such as drug smuggling, human trafficking, and slavery. IUU fishing is a problem that threatens national and economic security, ecosystem health, sustainable fisheries, and human rights.

IUU fishing poses risks to legitimate seafood providers and the resources they depend on. In recent years, significant strides have been made by industry actors to counter these risks by strengthening traceability and oversight to better understand the origin of their products. However, current risk assessment practices are often impeded by resource constraints and a lack of product traceability data and verification mechanisms, leading to low levels of trust in the information received. One major challenge is the difficulty of analyzing and cross-checking information received from suppliers to verify activities at sea.

The Supply Chain Risk Tool (SCRT) project is a partnership among the [Friends of Ocean Action](#), [FishWise](#), [Global Fishing Watch](#), and the [Stanford Center for Ocean Solutions](#), which aims to provide companies accessible and actionable data about their IUU risks down to the vessel level. It leverages private sector influence to steer demand away from potential IUU fishing sources by helping to strengthen risk assessment and due diligence processes. This partnership offers an opportunity to translate renewed industry commitments into real progress towards eliminating IUU fishing.

In this report, we present the results of Phase 1 (January - March, 2022). With generous support from the UK Government's Blue Planet Fund, the SCRT project group led a user-centered design process with seafood companies, industry associations, and their partners (e.g., civil society organizations, and consultants) to support stakeholders' IUU fishing risk assessments.

THE INFORMATION INTEGRATION CHALLENGE

Seafood companies and their partners, including non-governmental organizations (NGOs), consultants, traceability providers, and others, are working to comply with different legislative frameworks and champion responsible seafood sourcing practices. Initiatives ranging from the PAS 1550:2017, the Global Dialogue on Seafood Traceability (GDST), the International Seafood Sustainability Foundation (ISSF), the Global Tuna Alliance (GTA), and the Seafood Business for Ocean Solutions (SeaBOS) have had tremendous success in facilitating pre-competitive and cross-sectoral collaborations to combat IUU fishing and other unsustainable activities. However, despite the abundance of tools and frameworks, stakeholders still lack clarity in how to best integrate the different data sources and tools to make the information and results actionable. The SCRT project aims to support industry by developing an easy-to-use and integrative solution to identify areas of IUU fishing risks in their supply chains





BUILDING SOLUTIONS THROUGH A USER-CENTERED DESIGN PROCESS

There is great potential to bring together multiple data sources that can help illuminate IUU fishing risk, as well as to unlock ‘seeing’ activities at sea through the use of vessel monitoring technologies including automatic identification system (AIS) and vessel monitoring system (VMS) data. The objective is to create a solution that helps seafood companies cross-check and verify the information they receive from suppliers and identify knowledge gaps in their supply chains. To meet this aim, the solution must respond to identified needs, be easily incorporated into existing due diligence approaches, assess risks in a timely and actionable way, and trigger actions for further transparency and data sharing in fisheries and supply chains.

Information to address these needs was collected between January and March 2022 through stakeholder engagement including surveys, interviews, and a two-day workshop with a range of expert stakeholders including seafood companies, NGOs, consultants, national authorities, intergovernmental organizations, and academics. Through integrated feedback, we learned about existing risk assessment processes—from informally to formally structured approaches. It is worth noting that the majority of companies that we interviewed used informal or semi-formal approaches.

- **Informal:** Manual, irregular, and mostly reactive; focus on the supplier rather than product; lack of clear definition or methodology in how risk assessments were conducted as well as the scope of the assessment.
- **Semi-formal:** Combination of proactive and reactive approaches; better definition of assessment but not yet standardized or comprehensive; more robust analysis but not yet replicable; relies mostly on supplier risk with some level of fisheries or product risk.
- **Formal:** Proactive, reoccurring assessments; tools are generally replicable; assessments may involve external partners if no in-house processes exist; multi-pronged approach to managing risks.

We also learned about the main barriers companies face when implementing robust risk assessment processes, as well as challenges associated with existing tools. For example, although other technologies exist, the lack of transparency in the methodology and data sources used make it unclear how the results can inform action. Other barriers include:

1. Lack of available information:

Companies struggle to access accurate and publicly available information on IUU fishing risks. Even where databases or websites can be accessed, companies may lack the expertise to analyze the data for actionable results.

2. Lack of internal capacity:

Companies often struggle with competing priorities and may not have time or staff capacity to conduct detailed assessments on the variety and volumes of products they source. Current processes are often analog, meaning staff must spend time updating spreadsheets and focus risk assessments on a small subset of products.

3. Lack of product data:

Companies often lack data on the origin of their products, especially about the “first mile” from catch to processor, making it difficult to properly assess IUU fishing risks. Reliance on upstream suppliers, disparate government recording keeping and regulations, and inconsistency in traceability systems and data terminology all aggravate these challenges.

4. Lack of trust in data:

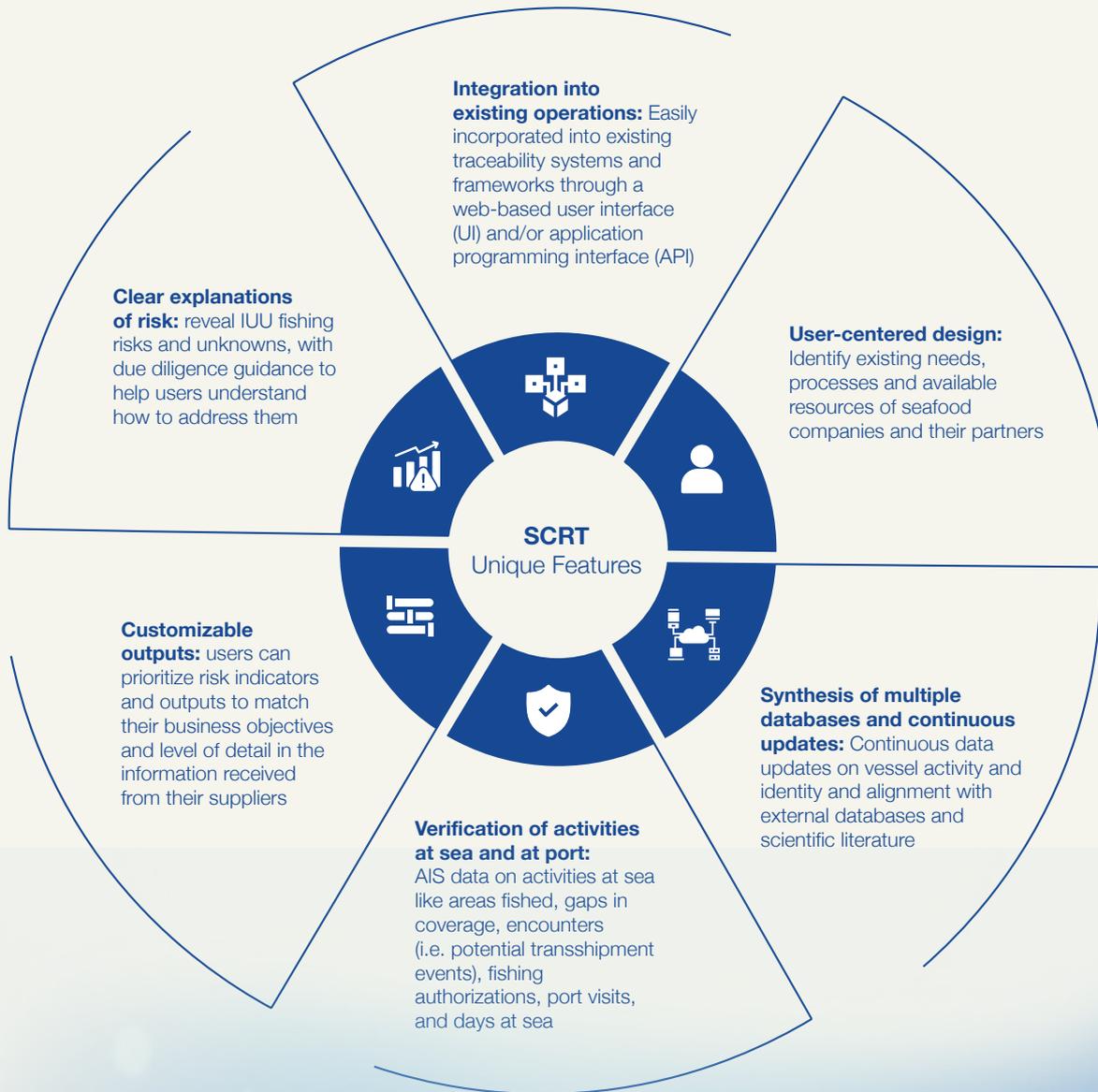
The challenges faced by companies when cross-checking or verifying data received from suppliers on product origin often leads to a lack of confidence in the data received.

5. Elevated cost of risk assessments:

Costs range from staff time, training, engaging suppliers, participation in industry initiatives or certifications, and investigations. When considering a tool’s implementation, costs include onboarding staff, running the risk assessment, maintenance, troubleshooting and any associated fees.

Central to the successful development of this solution is its co-development with stakeholders who will likely use it. Feedback was solicited to identify the key features (Figure 1) that a tool should have to support industry and other interested third parties in better identifying IUU risk.

FIGURE 1: SCRT unique characteristics of a supply chain risk tool to increase likelihood of adoption





UNLOCKING NEW DATA CAPABILITIES: PILOT PROJECT WITH ISSF

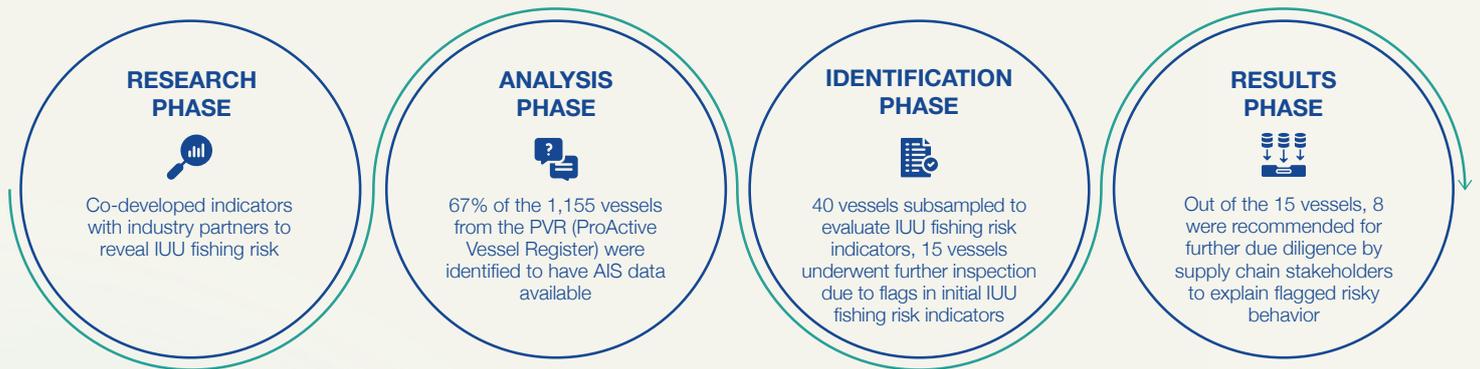
In addition to exploring the desired features of the proposed solution, we also looked into how it could work in practice. To assess data integration needs and challenges, the project team undertook an analysis comparing the ISSF [ProActive Vessel Register](#) (PVR) with Global Fishing Watch data from AIS transmissions.

ISSF is a cross-sectoral global partnership between the tuna industry and scientists. ISSF maintains a publicly available database

called the PVR, where over 1,100 tuna vessels from around the world are listed and report on their efforts to implement best practices in management and conservation through third-party audits performed by MRAG Americas. ISSF’s recognition of the important role of transparency in responsible fisheries management and traceability made them a natural partner to explore opportunities and challenges with the proposed solution. Summary results are presented below (Figure 2).

This analysis allowed us to showcase how the use of AIS data can enable the estimation of vessel-level IUU risk indicators, including illuminating their activities at sea. This feature has been highlighted by multiple stakeholders as a necessary step towards better identifying IUU fishing in global supply chains.

FIGURE 2: Showing the tool in action – ProActive Vessel Register (PVR) pilot project roadmap





PROMOTING TRANSPARENCY IN SEAFOOD SUPPLY CHAINS TO COMBAT IUU FISHING

Eliminating IUU fishing from seafood supply chains relies on companies' abilities to access reliable and timely data on the origin of their products, and to cross-check its accuracy. Our engagement with multiple stakeholders identified two key challenges in this area:

- 1. Data access:** Lack of transparency creates a barrier to traceability. Many tools and initiatives are impeded because they cannot get the data held by vessel owners to verify activities at sea.
- 2. Data analysis:** Even when data is available (e.g. AIS, or when a buyer has access to a vessel's VMS), many companies lack the resources to process and analyze it, reducing the opportunity to drive change and deliver impact.

Transparency and data sharing provide a pathway to overcome these challenges. In the first instance, by making information accessible. Data sharing allows for multiple data sources to be brought together in one place for a more complete picture of a vessel or fleet's identity and behavior. Successful data sharing requires the efforts of vessel owners, fishing authorities, suppliers, and retailers to explore opportunities (e.g., consistent AIS transmissions, publishing VMS data, use of IMO numbers, and other data sources) to support sustainability and corporate social responsibility commitments. The SCRT project proposes to work with all stakeholder groups to make data transparent-- improving traceability as well as stakeholders' abilities to demonstrate legal compliance and the adoption of best practices.

Once data is publicly available, experts in data analytics and machine learning can process and model it to deliver insights into vessel behavior such as patterns, anomalies, and changes over time. This provides value to a retailer seeking an overview of their source vessels to help inform decision-making. It also offers value to the fishers and associations that produce the data. Data access can be impeded when producers are excluded from the process, or do not perceive value from the effort required to collect and share data. Working from the ground up, for example, by providing analysis to producers to support their compliance activities or demonstrate their efforts in sustainable fisheries management to their buyers, will deliver impactful solutions with better quality and more complete information. Similarly, aligning with existing initiatives for data transparency and interoperability (e.g., Global Dialogue on Seafood Traceability standards 1.1), will ensure that information is presented to stakeholders in a streamlined way that easily integrates with their existing work processes and technology platforms.





FROM DESIGN TO IMPLEMENTATION

Over the next two years, we will continue to co-design the proposed data-driven solution in collaboration with industry and other stakeholders seeking to eliminate IUU fishing from seafood supply chains (Figure 3). Through a series of iterative consultations, discovery projects, and product releases,

we will incorporate feedback to deliver a solution that attends to identified needs. Ultimately, these iterations will help us to identify, create, and refine a product that brings value to the seafood industry. Below, we present a roadmap for the development of this solution:

FIGURE 3: SCRT product development roadmap





Get involved

Share your feedback on the supply chain risk tool, express your interest to participate in upcoming pilot projects, or share your experience with IUU risk assessments.

Contact us at scrt@weforum.org

PARTNERS



FishWise is a non-profit sustainable seafood consultancy based in Santa Cruz, CA, that takes a holistic approach to sustainability to protect ocean health and workers' rights. Offering expertise trusted by labor and human rights and conservation organizations, seafood buyers and suppliers, and government representatives, FishWise offers a range of services that empower businesses and a diverse community of collaborators to lead the transition to a sustainable and ethically responsible seafood industry.



Friends of Ocean Action is a unique, informal group of over 70 global ocean leaders from a range of sectors who are fast-tracking solutions to the most pressing challenges facing the ocean. Its members – the Friends – come from business, civil society, international organizations, science and technology. Friends of Ocean Action is hosted by the World Economic Forum, in collaboration with the World Resources Institute. It aims to drive meaningful action and transformative, high-impact and scalable initiatives to help achieve the Sustainable Development Goal for the ocean, SDG14, for a healthy and thriving ocean. Website: friendsofoceanaction.org Twitter: @FriendsOfOcean



Global Fishing Watch is an international nonprofit organization dedicated to advancing ocean governance through increased transparency of human activity at sea. By creating and publicly sharing map visualizations, data and analysis tools, we aim to enable scientific research and transform the way our ocean is managed. We believe human activity at sea should be public knowledge in order to safeguard the global ocean for the common good of all.



The Stanford Center for Ocean Solutions catalyzes research, innovation and action to improve the health of the oceans for the people who depend on them most. The Center capitalizes on Stanford's deep expertise in ocean science and in the many other disciplines crucial to solving ocean problems including engineering, computer science, political science, design and business. By translating research insights into solutions at scale for oceans and people, the Center is building a generation of leaders who are equipped to work across disciplines and across sectors.

