

## MAKE FOR THE PLANET BORNEO

Kuching, Sarawak, Malaysia  
June 24-28, 2018

### TRANSFORMING TRACEABILITY: INCENTIVIZING CATCH DOCUMENTATION FOR GLOBAL FISHERIES STABILITY

*The Oceans and Fisheries Partnership (USAID Oceans)*  
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#### Short Description

*Global fish stocks are under siege, and the world's oceans are in serious danger. Accurate and timely data collection on global fish catch data could greatly improve fisheries management around the globe. How can data capture and traceability be designed, facilitated, and incentivized to save our oceans?*

#### The Problem

With global fish stocks under siege by commercial and environmental stressors and fisheries populations plummeting, the world's oceans are in serious danger. Over one third of the world's fish stocks are overfished, with a large concentration located in Southeast Asia. Illegal, unreported and unregulated (IUU) fishing is responsible for \$15.5 to \$36.4 billion in illicit profits annually (FAO, 2017). In addition to economic losses, IUU fishing compromises marine biodiversity, erodes fisheries resources and global food stocks, and catalyzes rampant labor and human rights violations. Actions supporting more sustainable fisheries management are desperately needed to protect and conserve the oceans' marine resources.

Accurate and timely fish catch data informs sustainable fisheries management and supports international and national authorities in regulatory development and enforcement. Fisheries and conservation experts around the globe endorse enhanced catch documentation and traceability (CDT) as a requirement for increased sustainability. CDT enables seafood products to be traced back through their journey from "plate to bait," capturing data at each stage (i.e. point of capture, unloading, and all other points through the supply chain until it reaches a consumer).

However, as with any data set, data usefulness is dependent upon its accuracy, validity, and verifiability. Data validity is a large challenge, as recent reports have shown that one in five seafood samples are mislabeled worldwide (Oceana, 2016); and in one case, 82% of samples tested were mislabeled and half of the substituted fish were species considered as threatened with extinction (IUCN).

While demand is high for valid catch data, industry incentives for capturing and sharing accurate data lag greatly behind.

While regulatory demand and technology capabilities continue to grow for increased fisheries sector data capture, *sector participants continue to be hesitant to collect and share fisheries data*. Incentive mechanisms are lacking for fisheries actors throughout the supply chain; including industry and government participants. For full-chain traceability, all industry actors encountering a

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seafood product through its journey through the supply chain must be compelled to collect and contribute valid data. Key actors are located at product movement points—at catch (captain/crew), at landing (buyer/broker), processing (processor), and at export/sale (processor, broker) (see Figure 1). In addition, for data to be most effectively used, governmental national fisheries agencies must be compelled to make data available to interested, accredited external parties.

### **Core Constraints**

While CDT holds numerous benefits for fisheries markets that are more sustainable, prosperous, and accountable, there are a number of challenges that hinder robust data collection. These include:

#### ***(1) Data Security and Confidentiality***

To date, private sector and governmental actors have been hesitant to contribute data to a robust, regional CDT system as they are concerned that proprietary data will be compromised, made widely available, and therefore infringe on their competitive advantages. Thus, technical infrastructure and data management challenges must be addressed before participants will be willing to contribute to such a system.

#### ***(2) Limited Market Incentives for Data Collection/Submission***

There are currently limited market incentives for private sector actors to contribute to a robust CDT system. Market-driven incentives must be established to encourage private sector participation, which may include price premiums, compensation for data entry, increased market share, or proven impacts to bottom lines. Currently, private sector actors are dissuaded by costs of adoption and participation and are not convinced of the financial benefits of participation

#### ***(3) Limited Incentives for Entry of Valid Data***

Data validity has been proven to be a significant barrier to traceability. IUU fishing practices are, in part, fueled by misreported catch data that fails to document the correct size, type, or method of fishing for a variety of reasons, including tax evasion.

### **Challenge Statement**

This challenge seeks solutions that will transform catch documentation and traceability (CDT). What combination of technology and market-driven incentives can best facilitate both government and private sector actors to accurately contribute to robust catch documentation and traceability databases? A fisheries sector with fully traceable products and private sector actors who are incentivized to participate in a robust CDT database by increased market share would transform the fisheries sector.

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It is not sufficient to propose technological solutions to collect catch data for this challenge - technological solutions need to be coupled with market-driven incentives & feasible plans so that government and private sector actors are willing to accurately contribute and share robust catch information to databases. Incentives for sharing accurate data lag behind the technological solutions to collect data.

### Background Information

- USAID Oceans' Fisheries Catch Documentation and Traceability in Southeast Asia: A Conceptual Overview (CDT 101): <https://www.seafdec-oceanspartnership.org/resource/cdt101/>
- USAID Oceans' Fisheries Catch Documentation and Traceability in Southeast Asia: Technical Concept and Specifications (CDT 201): <https://www.seafdec-oceanspartnership.org/resource/cdt201/>
- USAID Oceans' Data Requirements for Catch Documentation and Traceability in Southeast Asia: <https://www.seafdec-oceanspartnership.org/resource/kdemanual/>
- How Blockchain is Strengthening Tuna Traceability to Combat Illegal Fishing (The Conversation): <https://theconversation.com/how-blockchain-is-strengthening-tuna-traceability-to-combat-illegal-fishing-89965>
- Continuous Interconnected Supply Chain: Using Blockchain & Internet-of-Things in Supply Chain Traceability: [https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/blockchainsupplychain/lu-blockchain-internet-things-supply-chain-traceability%20\(1\).pdf](https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/blockchainsupplychain/lu-blockchain-internet-things-supply-chain-traceability%20(1).pdf)

### Examples of potential solutions

Current approaches have made significant headway in catch documentation and traceability. These successes, however, have typically been in just one segment of a trade chain (i.e., of limited geographic scope, typically one province or nation) or within one individual or a vertically integrated company (i.e., not in an entire sector). Current approaches lack the ability or reach to integrate the complete supply chain in an expanded geographic scope.

Blockchain technology has recently become of significant interest in the fisheries traceability landscape, as well as distributed ledger technology (DLT). Blockchain technology provides the data tempered proof, but has several limitations that must be considered and navigated. Due to its nature, it also exposes data to the public and may contradict some country laws on catch reporting. Private Blockchain networks might be able to provide more robust data privacy filtering, but at the same time introduces engagement challenges.

A number of initiatives have sought to address the challenges of fisheries catch documentation and traceability, with elements of each showing significant promise. These include recent Blockchain projects, such as the Blockchain Supply Chain Traceability Project by WWF-New

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Zealand, WWF-Australia, and WWF-Fiji. Fishcoin (<https://eachmile.co/fishcoin/>) has done work to incentivize small-scale data contributions.

Outside of the fisheries sector, there are several examples of successful data management and integration projects that could inform fisheries CDT. These examples include financial automated teller machine (ATM) networks' ability to instantaneously validate and verify data between institutions, and even the agricultural sector's ability to standardize the inputs for and traceability of oranges from concentrate orange juice.

## CDT contributes and receives data to variety systems for government and business

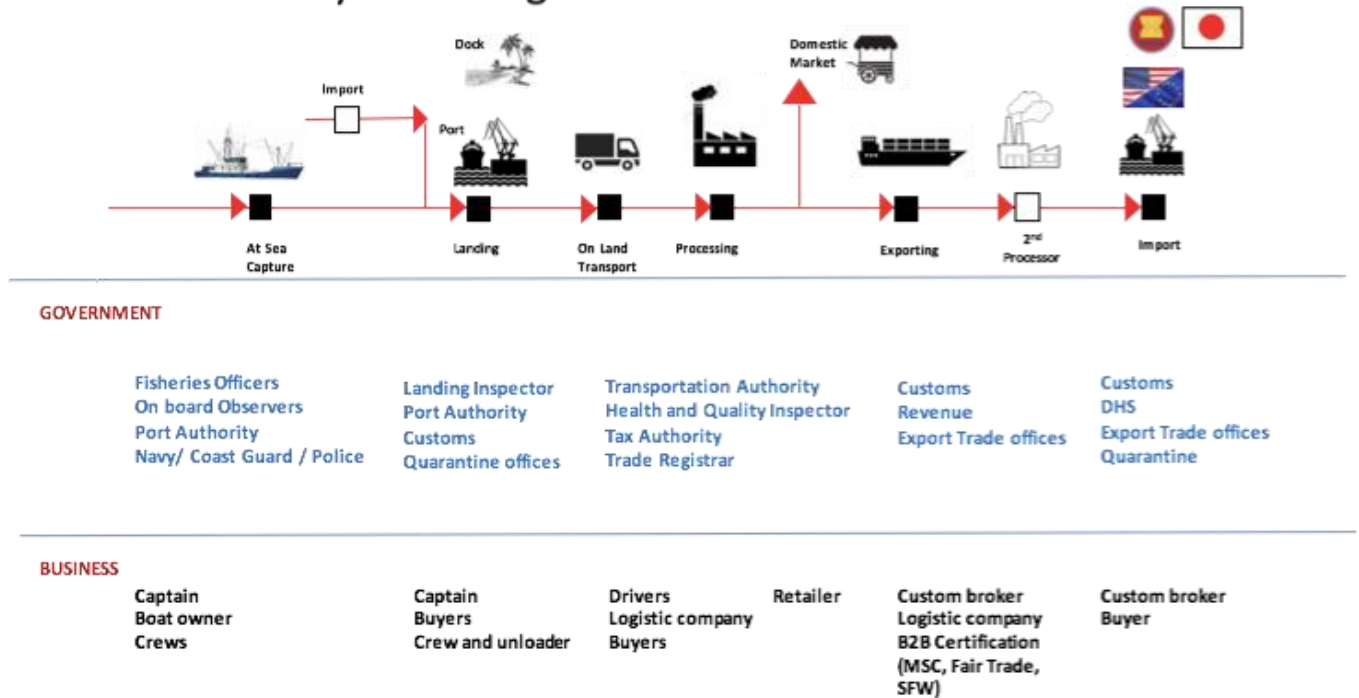


Figure 1. Key actors along the seafood supply chain.