

Factsheet final findings Applied Research Fund Call 2



Technology Innovations towards sustainability in Indonesian Tuna Supply Chains

Summary

Informational uncertainties in tuna fisheries threaten the sustainability of tuna stocks and the livelihoods of fishing communities across the western and central Pacific Ocean. This is especially true in Indonesia, where a high reliance on tuna for domestic fish consumption coupled with large tuna exports are increasing pressure on local fisheries. Their ability to support livelihoods, appetites and businesses relies, in part, on information provided by and communicated to fishermen and processors. This project has developed a traceability-based technology (TBT) platform that facilitates effective information exchange between fishermen, processors and traders in Indonesia. Specifically, it provides fishermen with information on fisheries and global markets, and helps processors and traders to meet informational requirements originating from importing regions.

This project has aimed to answer the following questions:

1. What are the informational demands of fishermen and processors in Indonesia's tuna value chains?
2. How can information provided to fishermen encourage compliance with regulatory demands and help integrate them into the global market?
3. Do simple information systems offer economically efficient benefits to seafood value chain business participants?
4. Can private information systems, as a new form of informational governance, supplement conventional modes of state-centered environmental decision making and in doing so offer a 'transformational' approach to improving the challenges faced by the seafood sector?

Research Findings

By implementing a technology platform in addition to existing paper-based traceability systems in selected tuna fisheries in Indonesia, a range of results and findings were realized that have relevance and provide opportunities for small scale fisheries. A needs assessment among fishermen and processors revealed that fishermen require technology to help predict possible risks at sea, such as an app for weather forecasts; and processors want greater automation of existing logistics practices. Based on these and other results new technologies were implemented, which have led to the creation of digital records of key information needed for traceability. Such records however, were not coordinated throughout the entire value chain. From a research perspective new insights were gained about both practical and social challenges of these technologies. Lessons learned along the way have been implemented throughout the process and communicated to policy makers and technology providers at various conferences, with the aim of contributing to more streamlined implementation in future supply chains.

Outcomes achieved

This project has shown the importance of working closely together with fishermen and other stakeholders, to ensure effective uptake and adoption of new (technological) approaches.

A number of key outcomes can be identified:

- Improved practices for fishing and post-harvest handling
- Empowerment and better integration of fishers in the global value chain
- Increased fisher cooperation in meeting regulatory requirements

- Increased reliability of the origin and quality of Indonesian tuna
- Increased supply chain efficiencies for processors
- Improved information flow between value chain actors
- Enabling national regulatory environment for improved management

This project aimed to make already existing systems more efficient for Indonesian supply chain actors in order to improve their participation in quickly evolving international markets. Key to improving these systems is ensuring that all actors that generate and use fisheries information are linked with one another and that provided information is up to date. In order to link fisheries' management personnel, local governments and value chain actors (including fishermen) MDPI has organized Data Management Committees (DMCs) in each of the target provinces. In addition to being important data sharing events, these DMCs help to build a network of involved players. Data generated by means of a number of additional technologies, including DOCK and Spot Trace, are incorporated into the [I-Fish database](#) which is the basis for DMC data collection. This approach not only improves data collection and verification, but also allows for better coordination between stakeholders to work towards development and sustainability of the sector.

Project messages to

A) Actors from private sector:

- The inclusion of stakeholders in the development of technologies is very important to improve uptake of technology. In addition to a human centred design approach to meet stakeholders' specific needs, different incentives can also improve this uptake.
- A coordinated, full supply chain approach is essential for successful Technology based Traceability projects. Communication and coordination between supply chain actors is key.

B) Civil society and practitioners organizations:

- Testing Technology based Traceability in active seafood supply chains is a labour intensive and disruptive activity. To ensure success, building strong relationships with key stakeholders in the industry is necessary.
- Technology development projects are difficult and technically challenging. In-house expertise is of utmost importance during development.

C) Policy makers:

- Collaborative management in small scale fisheries is an important component in ensuring stakeholder participation, capacity development and ownership of data creation and sustainability approaches for long-term fisheries management.

Knowledge products

- [Do you know where your tuna comes from?](#) Youtube Video, May 2016.
- [Private provision of public information in tuna fisheries.](#) Scientific publication, 2017.
- [Opensource Electronic Tally software code: Tally-O.](#) Software, 2016.
- [The role of traceability in transforming seafood governance in the global south.](#) Scientific publication, 2016.
- [Transparency for just seafood systems.](#) Article, July 2016.

Knowledge networks

[BEST Tuna initiative](#)
[USAID Oceans partner](#)

Co-creation

Co-creation has allowed for the successful implementation and coordination of this project. All parties involved were able to provide their input for the development of work plans and approaches during strategically placed meetings. When issues or obstacles arose in the implementation of these work plans, solutions were sought in a collaborative and informed decision making process; again including all involved parties and at the same time empowering MDPI, the implementation organization on the ground in Indonesia.

The development phase of this project has followed a human centred design approach, which starts with the target group's needs and ends with new and tailor made solutions. Industry partners faced the dual concern of having to comply with regulatory and market requirements and ensuring efficiency of their supply chain. Based on the input of a wide range of expert partners, the technology developed in this project sought to respond to both concerns. Pre-existing supply chain relationships built by project partners have given practitioners much greater insight and knowledge than would have been possible through independent research.

Consortium Partners

- [MDPI - Masyarakat dan Perikanan Indonesia \(ID\)](#)
- [Wageningen University – BESTTuna \(NL\)](#)
- [BHLN Technical Services, LLC in support of Anova Fishing & Living \(ID\)](#)
- [Institut Pertanian Bogor \(Bogor Agricultural University\) \(ID\)](#)
- [PT. Harta Samudra \(ID\)](#)

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