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Indonesia



Opportunity in using ICT to support Catch Documentatin and Traceability

Farid Maruf, USAID Oceans - Regional CDT Specialist

CTI-CFF Public Private Partnership Preparation (PPP)

Expert-Consultation Meeting on PPP Design and Arrangement

Aryaduta Hotel

Jakarta, Indonesia

4-5 April 2018



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USAID OCEANS AND FISHERIES PARTNERSHIP (USAID OCEANS)

- Combats **illegal, unreported, and unregulated (IUU) fishing** and seafood fraud, promotes **sustainable fisheries, and conserves marine biodiversity.**
- Aims to improve marine biodiversity conservation and increase sustainability of Asia-Pacific's international seafood trade through:
 - **Catch Documentation and Traceability**
 - Ecosystem Approach to Fisheries Management
 - Public Private Partnerships and Industry Engagement
 - Safe, Legal and Equitable Labor Practices
 - Regional Coordination and Governance

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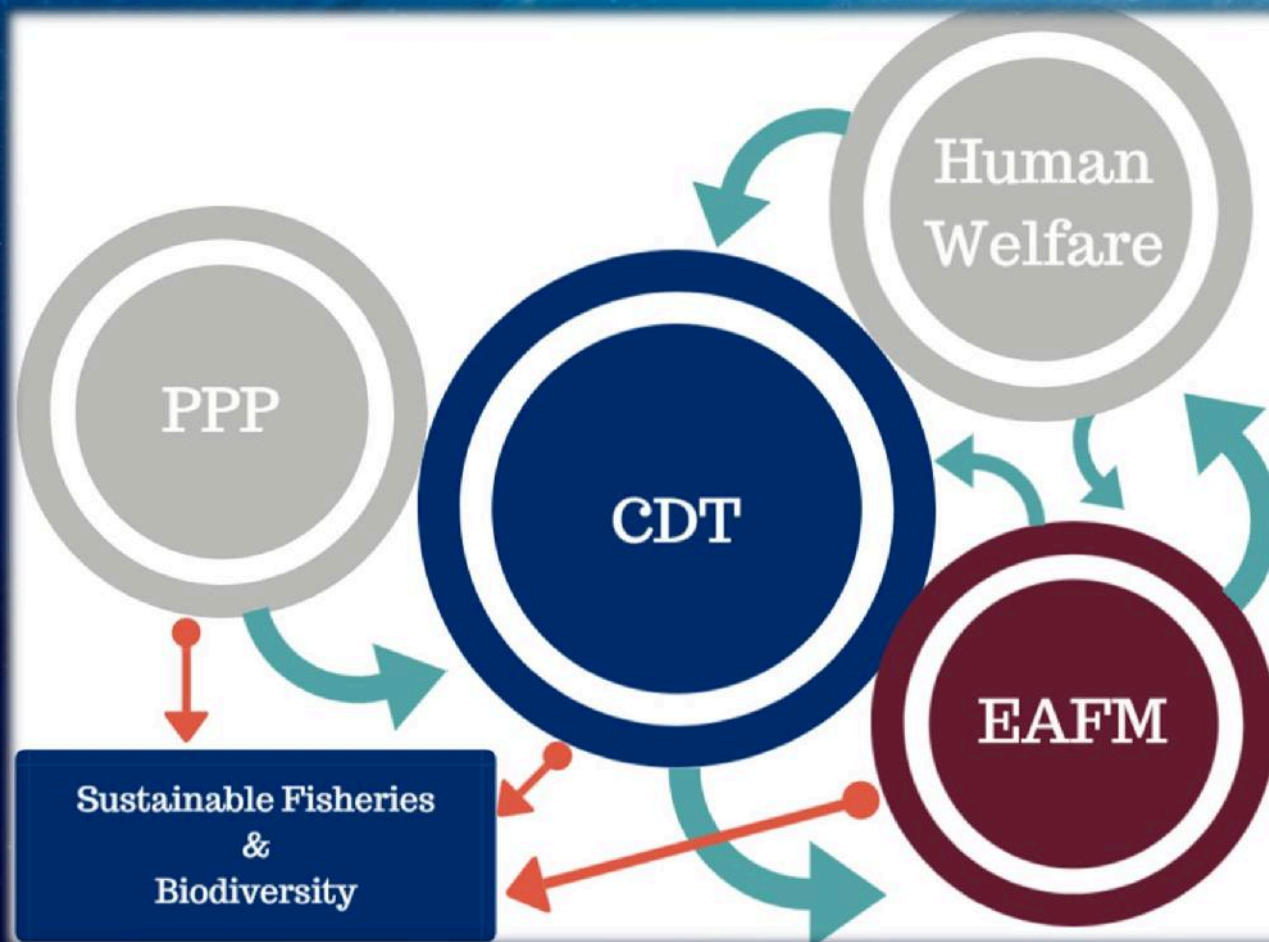
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USAID OCEANS' APPROACH





Asia-Pacific Waters: Food Security, Livelihoods

Provides daily food and income
to over
200 million
people living in Southeast Asia



Account for...

- 93% of those employed in fisheries & aquaculture (worldwide)
- More than 50% of world's catch
- 3 million fishing vessels

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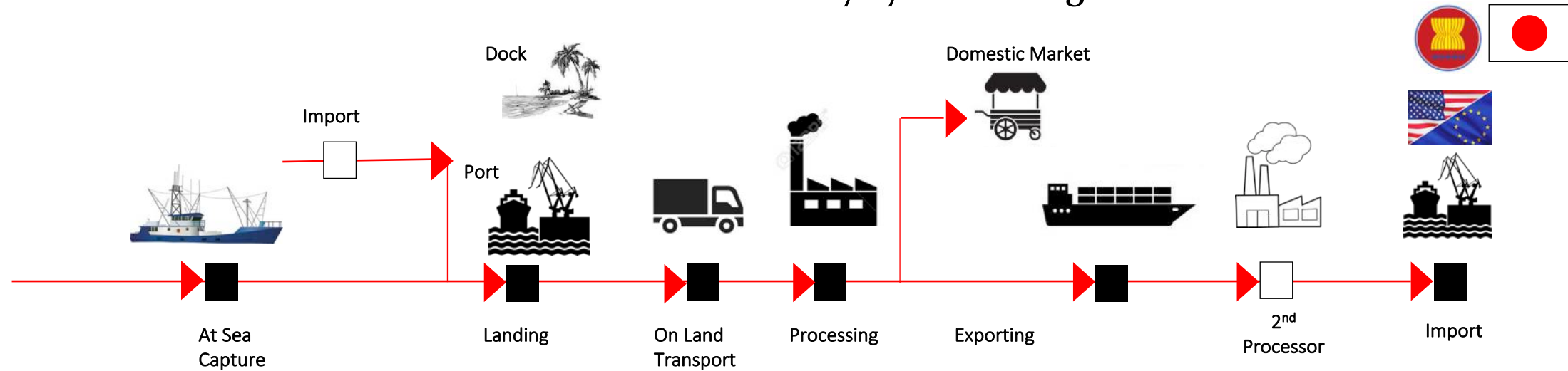
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CDT contributes and receives data to variety systems for government and business



GOVERNMENT

Sustainable Fisheries Management Plan
Stock Assessment
Harvest Level
Harvest Strategy

Combating IUU
PSM
MCS

Food Security
Logistic (Inputs)
Cold Storage
Distribution Nutritional Supply

Food Safety
HACCP

GDP
Trade Balance
Customs Revenue

BUSINESS

Catch reporting
Fleet Management

Company Supply Chain

Enterprise Resources Planning

B2B Certification (MSC, Fair Trade, SFW)

B2B and B2C Traceability

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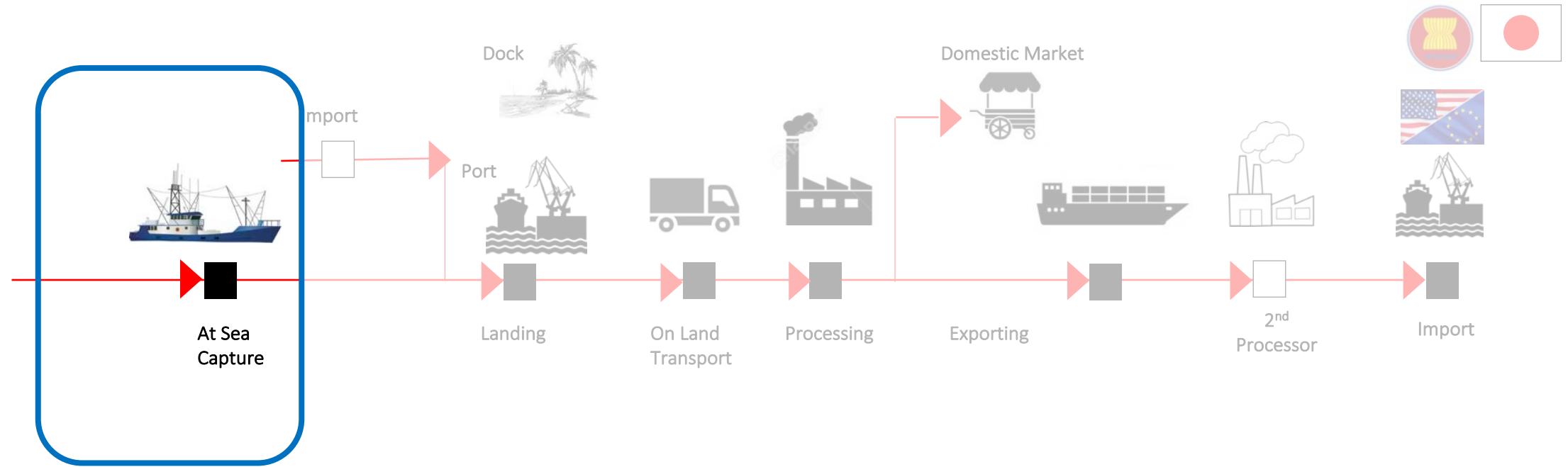
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At Sea Data Capture

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Large and medium Scale



Photo credit: Marine Change

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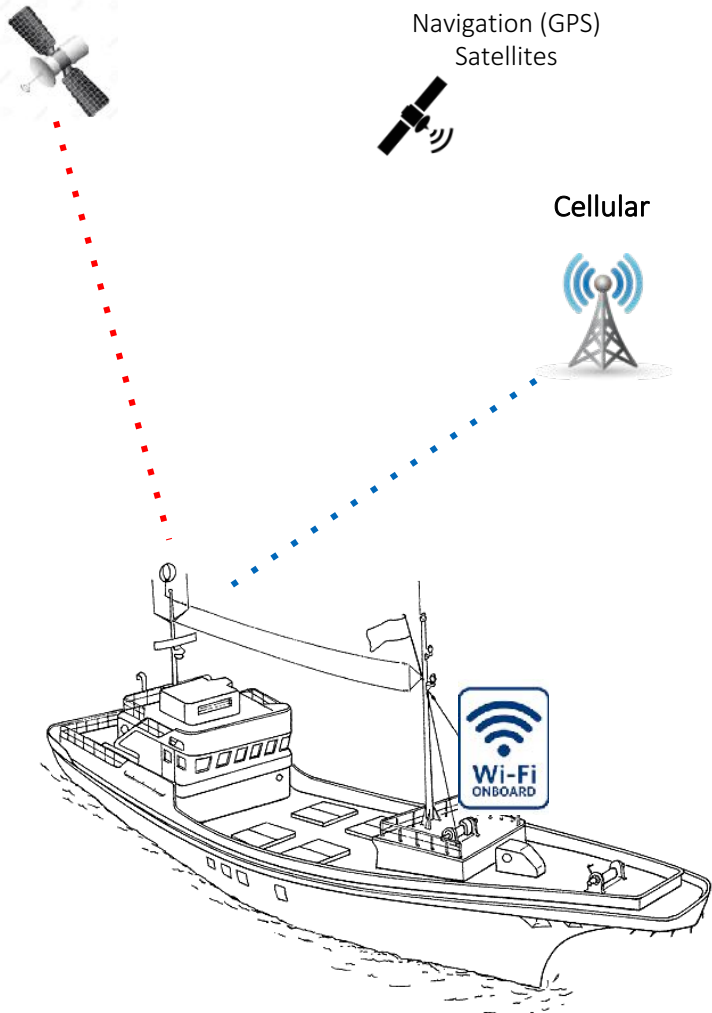
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2 way VMS for medium to large vessels

- Hybrid satellite-cellular communication with auto switch over technology
- **E-logbook** app to enable at **sea data capture**;
- Provide internal fleet monitoring and management including telemetry data
- Provide local Wi-Fi connectivity with limited internet connection to the crew
- Enable to **facilitate person to person simple text communication** (crew – family)
- Geo Fencing
- Emergency and Distress Locator
- Alerts and Broadcast

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Photo credit: Marine Change



Photo credit: Marine Change

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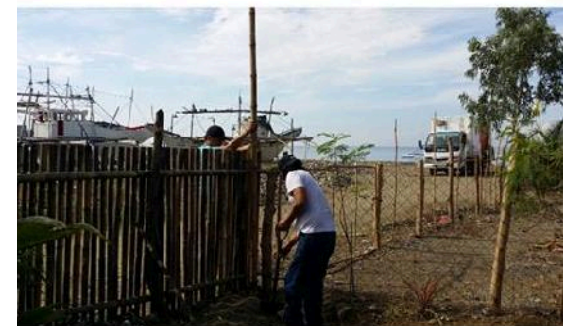
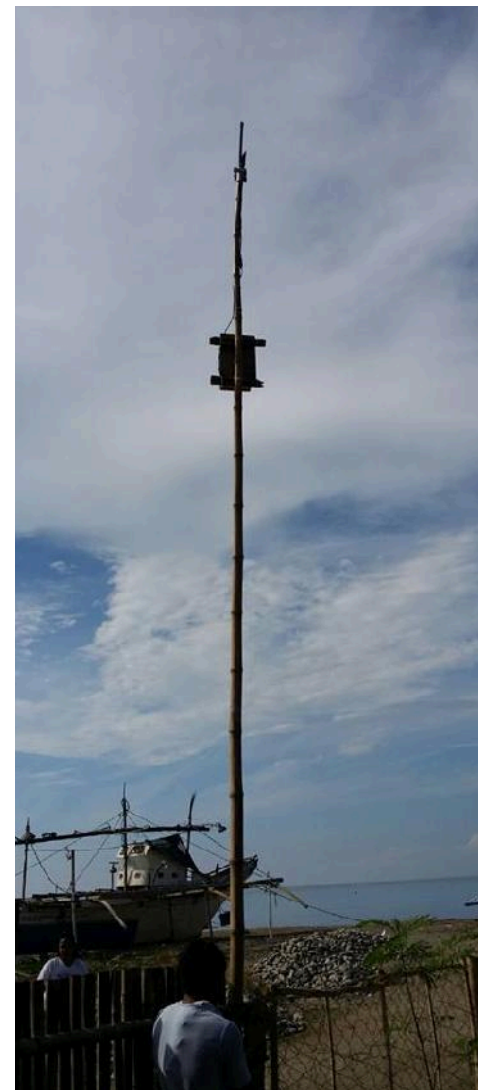
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Vessel Tracking Technology: Small Scale Fisheries



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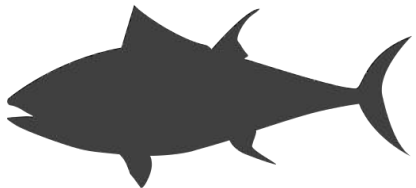


FAME transponder's use for traceability



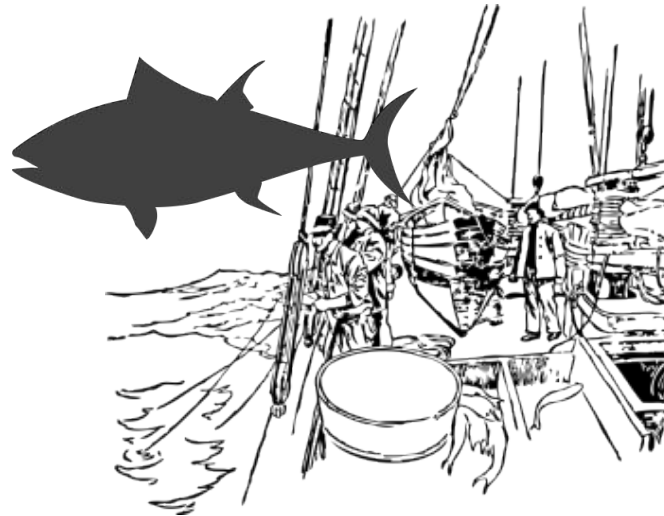
Boat's location

- Timestamped
- Exact lat & lon



Port data sending

(areas where internet is poor)



Connection to tablet for sending information (without internet)



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Power Consumption Monitoring



Cold Storage Monitoring



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Trip tracking

General information

Vessel 2

Time period: 2017-07-26 00:00:00 - 2017-07-27 00:00:00

Route start: 2017-07-26 11:53:06

Route end: 2017-07-26 13:24:08

Route length: 24.97 km

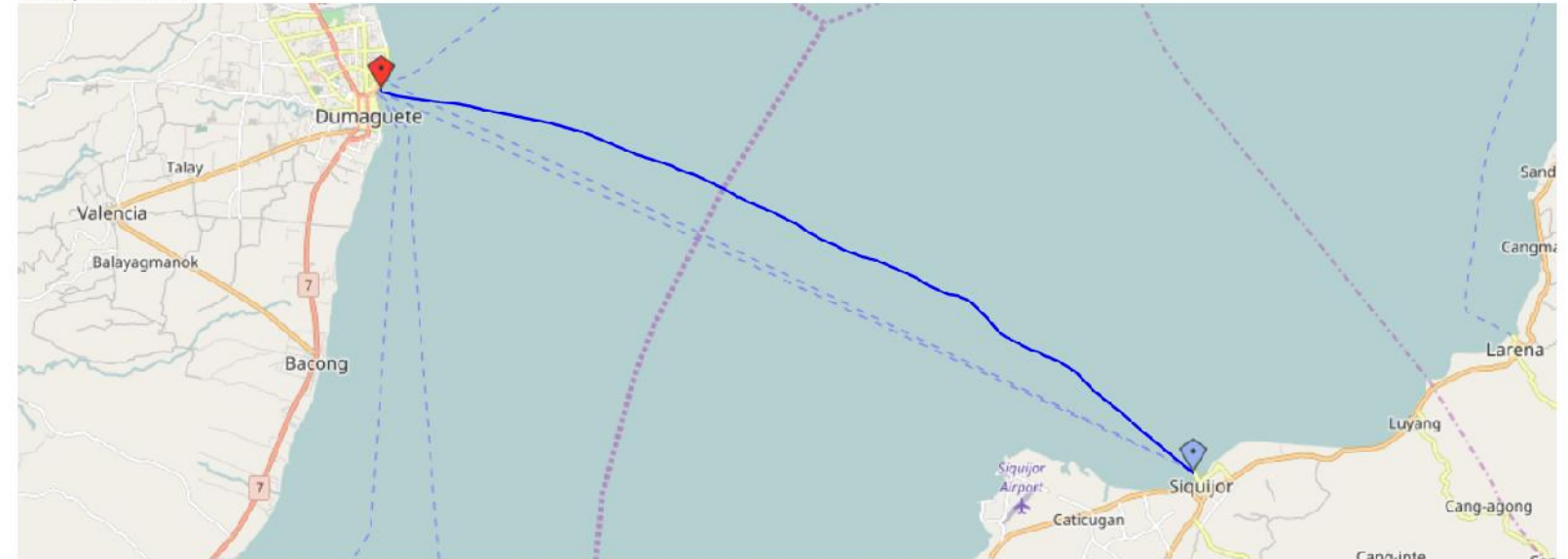
Move duration: 1h 12m 12s

Stop duration: 18m 48s

Top speed: 17.75 kn

Average speed: 11.2 kn

Overspeed count:0



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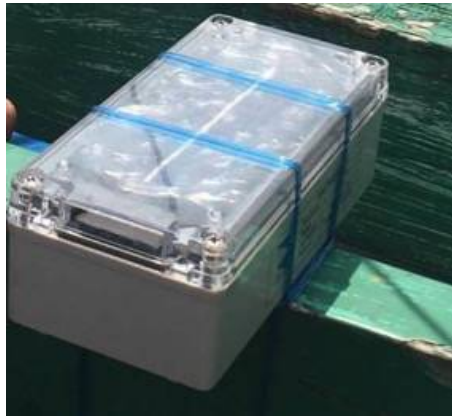
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1. Text communication
2. Catch report
3. Location (15 mins interval)
4. Emergency (send and receive)
5. Solar powered
6. NFC tagging (write & read)



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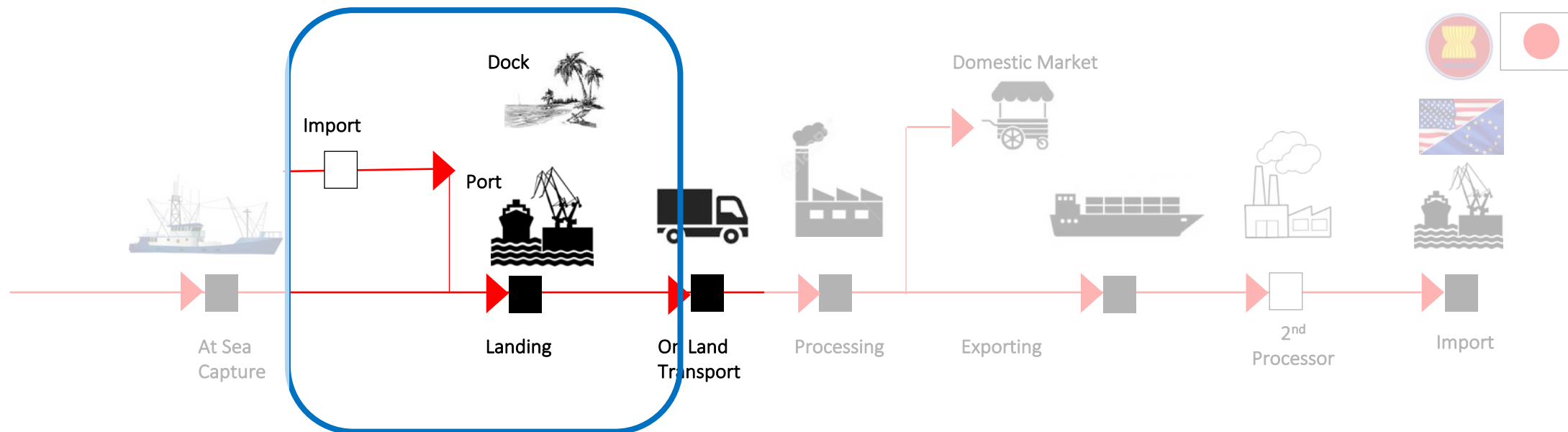
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At Landing site data capture

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Mobile application for fish supplier as business book keeping tool and serves as the first entry of data into the traceability



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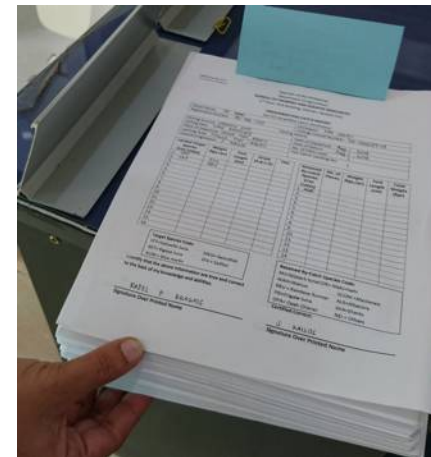
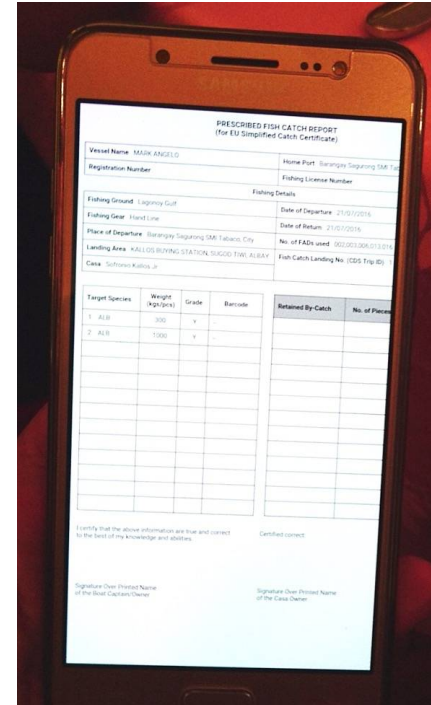
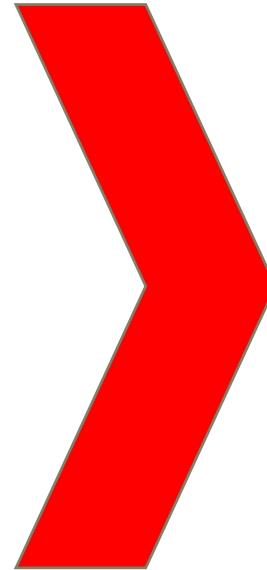
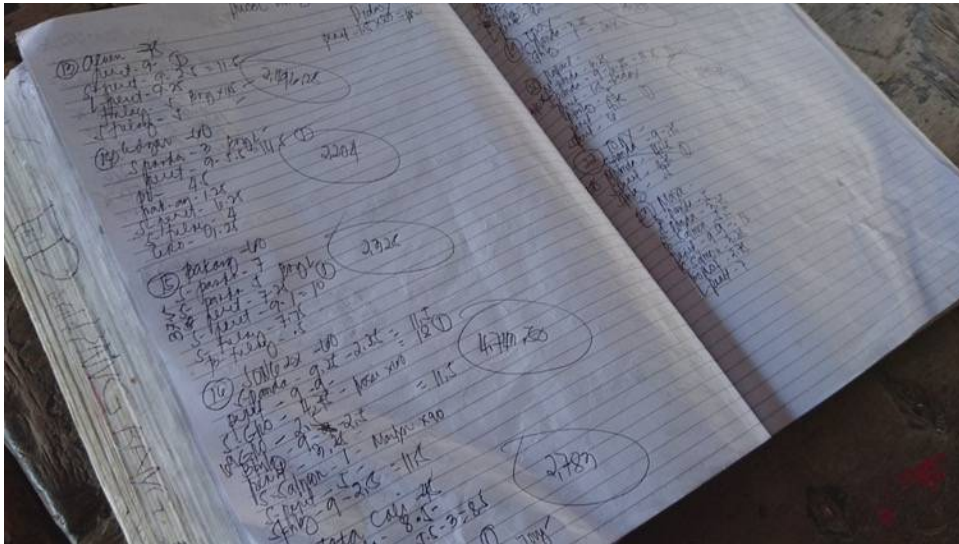
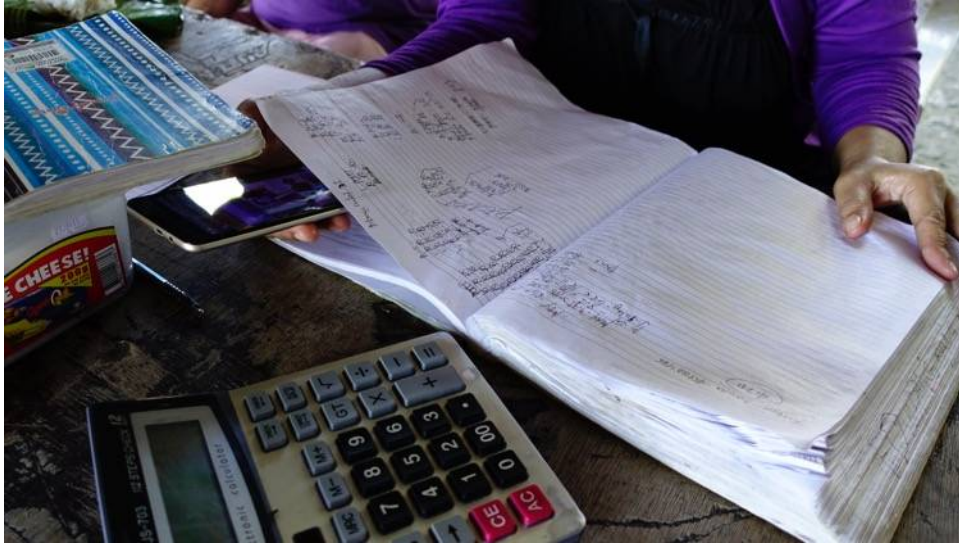
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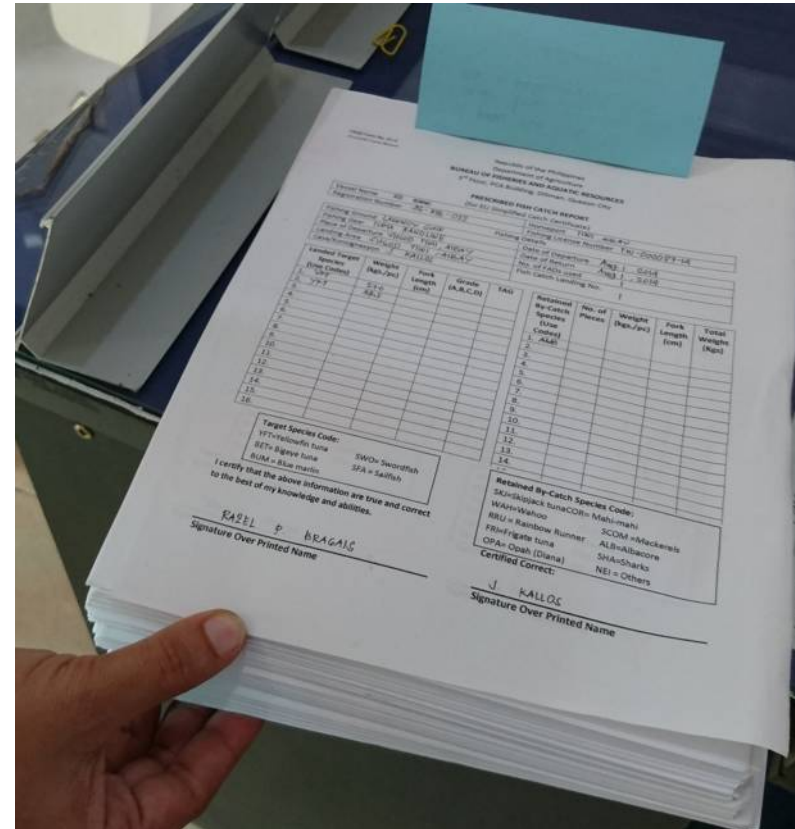
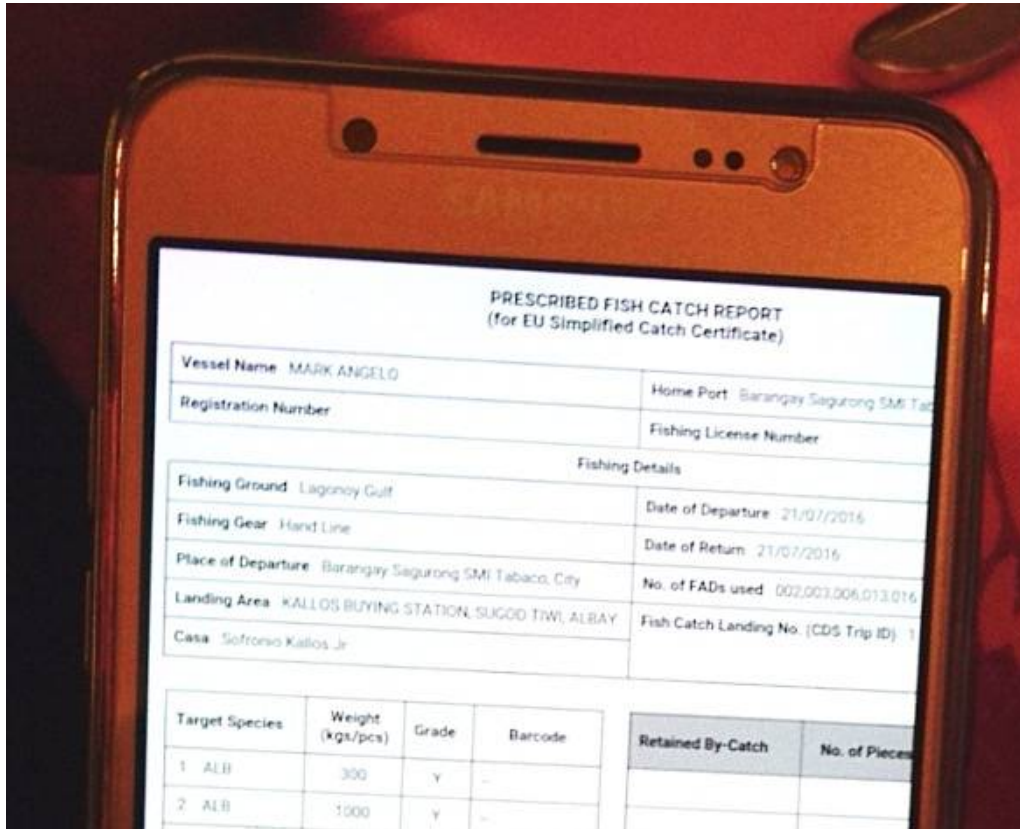


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Small Scale Fishers

... and produce US and EU simple catch certificate



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Supplier App

Small Scale Fishers

Catch data collection at the point of landing

1. Collect KDEs that linked to landing data
2. KDE comply to market requirement (SIMP, EU, ACDS, GoI)
3. Track sales and loan
4. Provide unique ID to be used further in the supply chain
5. Contribute data to MMAF STSIPP (DG Product Competitiveness)
6. Produce NOAA SIMP Aggregate form and EU Simplified CC
7. Potential to link with SSF Logbook

Status:

1. Development underway, estimated completion in Aug 2018
2. Will be tested and implemented by MDPI (BOGI, Sangihe – Bitung)

Roadmap:

1. Will be available as GNU/GPL (open source, public domain)
2. Will be implemented in other ASEAN countries

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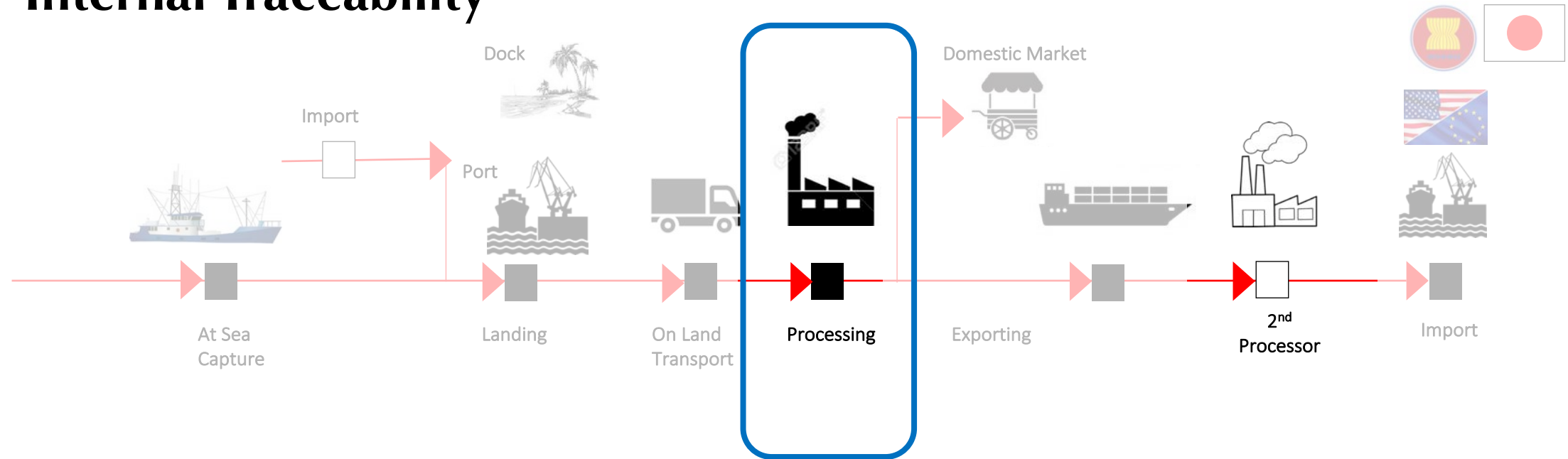
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Internal Traceability



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TraceTales

The *TraceTales* system is comprised of a custom-developed software program, and hardware that includes custom-built processing floor trolleys that are equipped with a computer processor, touch screen monitor, keyboard, label printer, digital scale, and scanner. The hardware has been specifically designed to be durable, water-resistant, and easy to use on the fast-paced processing floor.

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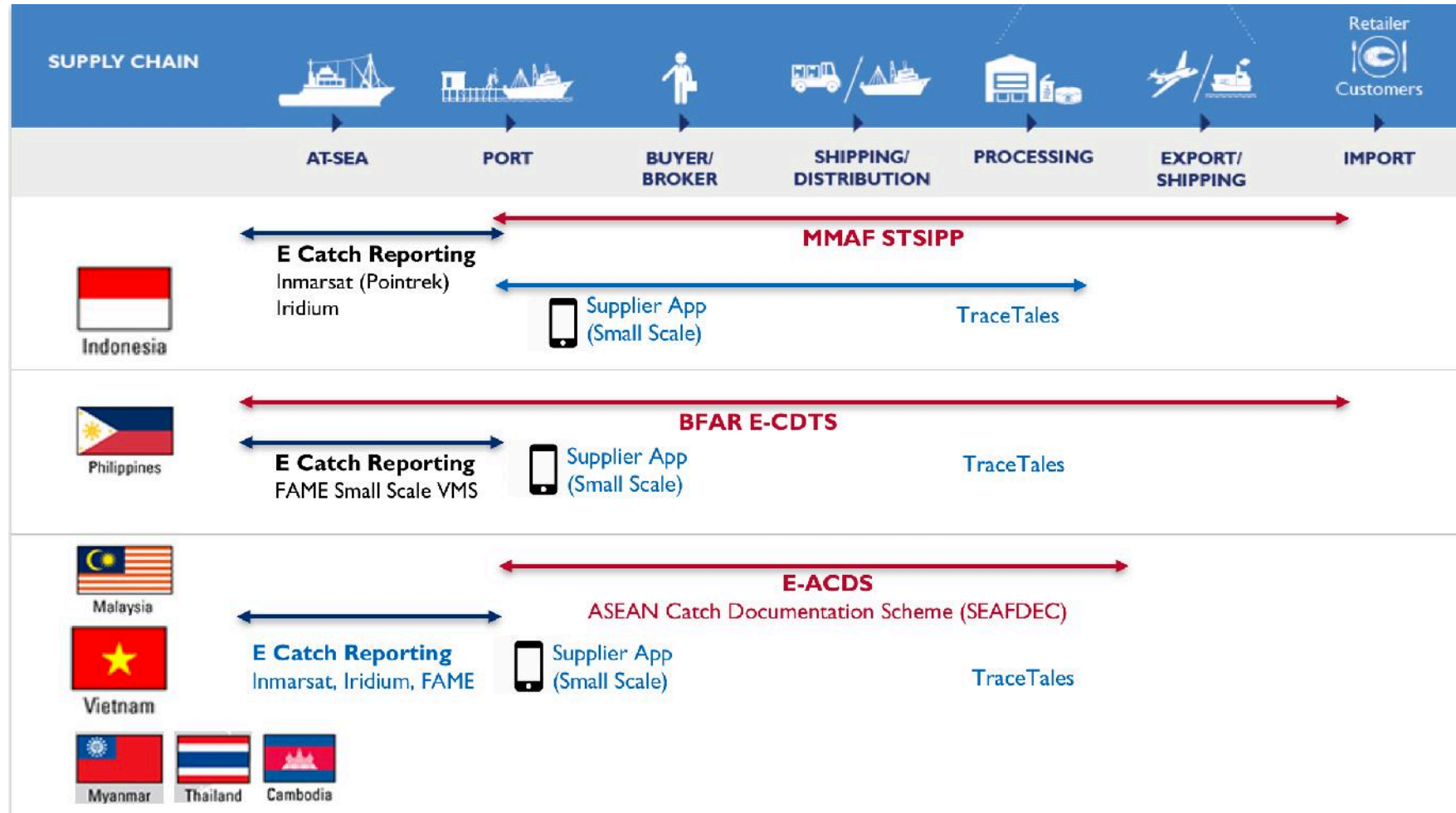
Status:

1. Community version is developed
2. Tested and implemented by MDPI (BOGI, Sangihe – Bitung)

Roadmap:

1. Will be tested and implemented in other ASEAN countries
2. Commercial version will be introduced

USAID Oceans CDT progress to date



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Block Chain

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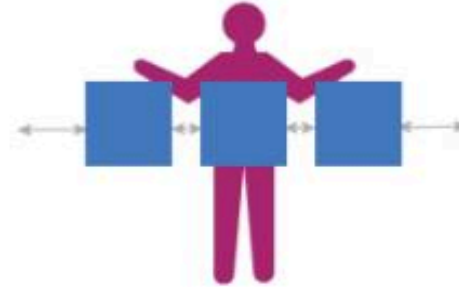
How Blockchain Works

Building a blockchain.

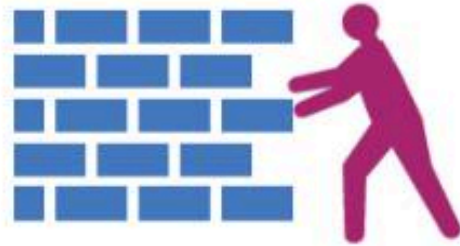
As each transaction occurs, it's put into a block.



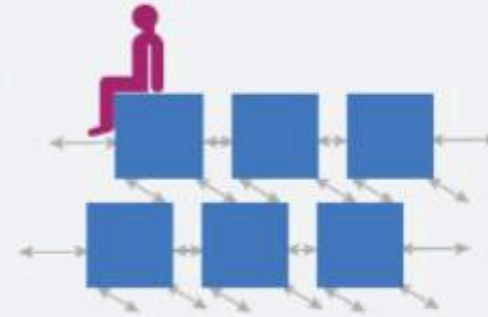
Each block is connected to the one before and after it.



Transactions are blocked together.



Each block is added to the next in an irreversible chain.



Source: IBM

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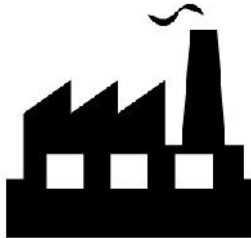
Blockchain will transform entire industries



Aviation: Increases visibility into parts distribution and maintenance



Automotive: Establishes electronic payments up and down a complex supply chain



Manufacturing: Decreases imports of counterfeit products or goods



Banking: Optimizes real-time funds transfer around the world.



Identity: Reduces identity theft, fake passports; human trafficking

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Current Fisheries' Blockchain Projects

WWF Ethereum Fiji Pilot



- Working with vertically integrated fishing company
- Includes IoT and near-field tagging using QR or NFC
- Goal is to shorten the supply chain to provide benefits to retailers
- Pilot is in very early stages; very contained scenario

IBM, TNC, NOAA Pilot



- Using video cameras to collect data on boats
- Camera cost is a barrier that is meeting resistance from fishermen
- There's little existing data about what species are being caught
- Pilot very early stage



Indonesia Blockchain Pilot

PROVENANCE



- Six-month pilot to track fish caught and verify its sustainability
- Goal was to provide proof of compliance along the entire supply chain, including slavery, use of inputs, full transparency and traceability
- Fishers use SMS to report catches
- Small pilot; has not been replicated

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TERIMA KASIH – MARAMING SALAMAT – TERIMA KASIH – TAGIO TUMAS – OBRIGADO – TANK IU



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