

The 3rd Coral Triangle Fishers Forum
Technical Report
4-6 July 2017
Iloilo City, Philippines



Delegates of the CTFF pose for a picture in front of the Iloilo Convention Center to commence the forum in Iloilo City on July 4, 2017

Acronyms

AFMA	Australian Fisheries Management Authority
ASEAN	Association of Southeast Asian Nations
BFAR	Bureau of Fisheries and Aquatic Resources
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CDS	Catch Documentation Scheme
CPUE	Catch per unit effort
CSO	Civil Society Organization
CT6	Coral Triangle six country members
CTFF	Coral Triangle Fishers Forum
CTFF – III	Third Coral Triangle Fishers Forum
CTI	Coral Triangle Initiative
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources
DOF	Department of Fisheries
DOFM	Department of Fisheries Malaysia
e-ACDS	Electronic ASEAN Catch Documentation Scheme
EAFM	Ecosystem Approach to Fisheries Management
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization
FFA	Pacific Islands Forum Fisheries Agency
FIMS	Fisheries Information Management System
FIP	Fisheries Improvement Project
FMO	Fisheries Management Organizations
GFTC	Global Food Traceability Center
GPS	Global Positioning System
HWW	Honorary Wildlife Warden
IAFSF	Indonesia-Australia Fisheries Surveillance Forum
iFMS	Integrated Fisheries Information Management System
IMCS	International Monitoring, Control, and Surveillance
IUU Fishing	Illegal, Unreported, Unregulated Fishing
KDE	Key Data Element
MAFF	Ministry of Agriculture, Forestry and Fisheries
MSC	Marine Stewardship Council
NGO	Non-Government Organization
NIP	National Inspection Plan
NPOA	National Plan of Action
OBB	Ocean Biology and Biogeochemistry
PITIA	Pacific Islands Tuna Industry Association
PNA	Parties to the Nauru Agreement
PPTST	Partnership Programme Towards Sustainable Tuna
PSMA	Port State Measures Agreement
RFMO	Regional Fisheries Management Organizations
RPOA	Regional Plan of Action

SEAFDEC	Southeast Asian Fisheries Development Center
SOP	Standard Operating Procedure
SPC	Secretariat of the Pacific Community
SwAM	Swedish Agency for Marine and Water Management
TMP	Tun Mustapha Park
USAID Oceans	United States Agency for International Development's Oceans and Fisheries Partnership
VinaTuna	Vietnam Tuna Association
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WG	Working Groups
WWF	World Wide Fund for Nature

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Forum Facilitator and Host: Mr. Marlito Guidote

I. Background

The Coral Triangle Fishers Forum (CTFF) is a regional platform hosted by the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF), designed to enable fisher folks and other industry stakeholders to share experiences and perspectives about the issues in the Coral Triangle region that affect them, and find common ground in achieving sustainable and equitable fisheries.

Originally organized and launched by WWF Coral Triangle Program, the CTFF meetings gather regional stakeholders, especially local fishers and industry representatives, to share experiences and identify solutions around specific problems faced by fisheries in the region. At each gathering, consensus recommendations are developed for future action and/or advocacy at policy and decision-making tables. Peer-to-peer exchanges and technical training sessions are organized for participating fisher folks. Individual members, associations, agencies and other members are also asked to make specific commitments around these recommendations, as well contribute to the shared action plan that is developed at each meeting.

The CTFF is designed to hold periodic gatherings around a specific theme and with meetings rotating between countries in the region. Themes and sub-themes are selected with the aim that outcomes will help deliver on the goals of the CTI-CFF Regional Plan of Action. The inaugural CTFF meeting (Bali, 2010) focused on bycatch mitigation and best practices; this was followed by the CTFF-II meeting in Fiji in 2012, focused on traceability and IUU.

CTFF Achievements

Since its inauguration the CTFF has:

- Spearheaded the broader application of electronic monitoring and traceability in the region, including industry partnerships on e-CDS and traceability in the Philippines and Fiji
- Been catalytic in developing joint advocacy on bycatch mitigation and best practices among a large spectrum of tuna exporters, buyers, retailers and fishing companies
- Nurtured over a dozen collaborative efforts between WWF offices and industry in the region, working at the local level on the technical delivery of bycatch mitigation projects, traceability, catch documentation and Fishery Improvement Projects (FIPs)
- Helped secure key commitments from national and district governments, including budgetary commitments on sustainable fisheries issues in the region
- Directly reached and engaged over 300 stakeholders across a range of sectors including fishing communities, associations, exporters, processors, retailers, scientists, technicians and government managers
- Developed an active social media presence with over 3000 followers

This year, the Third Coral Triangle Fishers Forum (CTFF-III) is held at Iloilo Convention Center, Iloilo City, Philippines on 4-6 July 2017 with the theme, ***“Sustainable Coastal Fisheries through Local Innovation: Scaling Up Effective Models for IUU Reduction, Catch Documentation and Traceability in Support of Sustainable Local Fisheries”***.

Objectives

The objectives of the CTFF-III are the following:

1. Share information and experiences in the Coral Triangle and regional fisheries on IUU reduction, catch documentation and traceability in support of sustainable coastal fisheries, identifying obstacles, key issues and priorities;
2. Profile and demonstrate successful examples of industry-fisher partnerships on:
 - a. Best practices for IUU reduction, catch documentation and traceability
 - b. Expanding anti-IUU and traceability measures through FIPs;
3. Identify opportunities for scaling up effective models and expanding collaborations by identifying specific sites and concrete projects for investment and action; and
4. Develop a 'road map' identifying relevant enabling policies, programs and sustainable funding opportunities, including value-adding strategies for these programs and how fishers and industry players can help influence and implement these

The CTFF is intended to focus on highlighting successful examples and case studies, drawing lessons learned, identifying obstacles and developing new opportunities for scaling up effective models. The forum will serve not only as a "check-in" on IUU and traceability-related partnerships since CTFF-II, but also will engage fishers, NGOs and private sector parties in discussing results and associated "best practices" that provide a practical, value-adding element to existing efforts in the IUU/traceability space.

CTFF-III Participants

Approximately 120 participants have attended the Fishers Forum. Representatives from various sectors in the Coral Triangle member countries (CT6)¹ including Vietnam were present during the forum:

- Fisher folk representatives and leaders of fishing associations
- Exporters, processors
- Private sector technology vendors and providers
- Fisheries managers, advisors and technicians
- Researchers, NGOs and development workers

See list of participants in **Annex A**.

¹ Coral Triangle country members, also known as CT6, include the Philippines, Malaysia, Indonesia, Papua New Guinea, Solomon Islands, and Timor Leste.

Opening Remarks

In behalf of Undersecretary for Fisheries Eduardo Gongona, BFAR Region VI Assistant Director Drusila Bayate shared a welcome message during the first day of the forum. In her speech, she emphasized that the Government of the Philippines is continually developing programs and mechanisms that will curb illegal, unreported, and unregulated fishing. The Government through the Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture (DA) aims to provide available and affordable food for all Filipinos by empowering fishing communities and giving them alternative sources of income. The bureau has expressed its commitment to continue to enhance catch documentation and traceability system. This is coherent with BFAR Administrative Circular No. 251 series of 2014 that establishes a traceability system for fish and fishery products. Specifically, the Administrative Circular will promote proper handling, safety and cleanliness of the fishery products in every stage of the of the supply chain through use of catch certification, and comprehensive and accurate reporting of various data --- both for wild-caught and farmed species. Details of the speech is attached as **Annex B**.

Mr. Guidote served as host and facilitator of the forum discussed the background and objectives of the CTFF-III as described above. Additionally, he also explained the program flow for the next two and a half (2 ½) days of the forum. See Program as **Annex C**.

II. Country Presentations

CT6 representatives shared their country experiences and other relevant information related to reducing Illegal, Unreported, and Unregulated (IUU) through local application of innovative technology. A format was provided for each country presentation which includes: (1) IUU fishing issues and challenges; (2) how IUU fishing issues being addressed in the country; (3) collaborations to reduce IUU fishing; (4) lessons learned on IUU fishing; (5) training and capacity building needs; and (6) future directions in addressing IUU fishing. Country presentation are attached as **Annex D**.

Below is a summary matrix of country presentations.

Summary matrix of country presentation on combating IUU Fishing through local application of innovative technology

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
(1) Issues and Challenges	<ul style="list-style-type: none"> • Vessel licensing issues; issuance of fake documents • Unpermitted or trespassing of fishing vessels • Landing of fish in unauthorized ports/unreported transshipments • Use of prohibited fishing gears and methods • Anomalies in monitoring fish catch such as turning off of VMS, unreported logbook • Other issues related to IUU fishing are human trafficking, child labor, illegal transshipment, physical abuse, among others 	<ul style="list-style-type: none"> • Ineffective management regimes • Overcapacity in the world fishing fleet • Ineffective or lack of MCS systems • Insufficient capacities for enforcement (resources, manpower, skill, etc.) • Inadequate levels of penalties • Gaps in existing policies and national framework to prevent, deter and eliminate IUU fishing (PSMA, OBB) • Poor economic and social conditions • Too many government agencies involved in addressing IUU • Implementation of measures against IUU fishing • Strengthened international commitment and participation of the industries 	<ul style="list-style-type: none"> • Insufficient funding for effective regular surveillance, e.g. patrol boats, planes/drones for monitoring and apprehending unlicensed fishing vessels 	<ul style="list-style-type: none"> • Existence of unregistered and unlicensed commercial fishing vessels • Destructive fishing practices • Territorial use conflict (encroachment and poaching of commercial and foreign fishing vessels) • Limited institutional capacity (facilities, infrastructures, personnel, operations, and monitoring capacity) 	<ul style="list-style-type: none"> • Limited financial resources to assist MCS activities such as surveillance and patrolling of EEZ • Huge area of operations • Lack of proper coordination among enforcement authorities, i.e. customs, maritime, health and fisheries (different laws and processes) • Limited human resource and lack of capacity to support and coordinate MCS activities • Lack of MCS documentation processes • Lack of National Inspection Plan (NIP) and Standard Operating Plan (SOP) being documented • Lack of filing system for CDS and traceability documents in place 	<ul style="list-style-type: none"> • Capacity and scarcity of human resource • Weak law and regulation enforcement on IUU issue • Lack of facility, basic infrastructures such as ports and patrol vessels

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
		<ul style="list-style-type: none"> • Application of more stringent measures • Other than IUU fishing vessels, address vessels with state flags as well • Use of port and market-related measures • Domestic and regional cooperation • Awareness program 				
(2) How issues and challenges on IUU fishing addressed?	<ul style="list-style-type: none"> • Review and improve legislation • Strengthening of capacity for surveillance, inspection and investigation • Public information campaign and public awareness • Participation in RPOA • Membership in the RFMO • Implementation of management and conservation regulation • Involvement in bilateral, regional and international forum, e.g. IAFSF, 	<ul style="list-style-type: none"> • Development and strengthening of national policies, plans and programs • Legislation of catch certificate scheme; and amendment of Fisheries Act 1985 • Capacity building programs on SOPs, collaboration and cooperation with international agencies, and port inspections • Effective operational management system for allowing foreign fishing vessels into any Malaysian ports through installation 	<ul style="list-style-type: none"> • Establishment of MCS programs, i.e. patrols and surveillance, 100% observer coverage on purse seines and 5% on tuna longliners and catch documentation scheme • Electronic monitoring and traceability, i.e. VMS, FIMS • Integrating IUU reduction into current fisheries management programs 	<ul style="list-style-type: none"> • Enhanced policy framework (RA 8550 as amended by RA 10654) • International and regional conservation management measures adopted into domestic policies • Joint mobile registration and licensing (FeLIS, BoatR and FishR) • Enhanced institutional capability on recruitment and capacity of personnel, procurement of patrol crafts and 	<ul style="list-style-type: none"> • Increase recruitment of compliance staff and provision of relevant trainings to increase capacity on MCS • Strengthen law enforcement through cooperation and collaboration with relevant authorities, stakeholders on combatting IUU fishing • Develop and implement NIP, SOP and documentation process (filing system for catch documentation schemes, CDS) 	<ul style="list-style-type: none"> • Involved in RPOA consisting of 21 countries • Information sharing amongst stakeholders and other partners • Issuance of license • Technology application, i.e. SPOT and VMS • Integration of IUU fishing reduction in government fisheries management programs, i.e. National MCS, FIPs, EAFM, etc. • Ensure participation and cooperation of other relevant

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
	<p>Malindo, IMCS, AMF, RFMOs</p> <ul style="list-style-type: none"> • Development of NPOA to prevent and combat IUU fishing • MCS implementation: VMS and logbook • Build and strengthen infrastructures for coordinated patrolling, inspections, and surveillance • Establish and develop fisheries special court 	<p>of technology for monitoring, catch certifications, implementation of MCS program and EAFM, and implementation of Fisheries Act 1985</p>		<p>other logistical needs, and development of ops manual</p> <ul style="list-style-type: none"> • Monitoring control and surveillance (MCS) • Vessel monitoring system/measures • Fisheries observers program 	<ul style="list-style-type: none"> • Provision of infrastructure such as office space/s 	<p>institutions under the National Directorate of Inspection, i.e. Naval and maritime authority</p>
(3) Collaborations to reduce IUU fishing	<ul style="list-style-type: none"> • Interagency cooperation • International cooperation • “Multi-doors” approach in fisheries law enforcement 	<ul style="list-style-type: none"> • Establishment of fishers volunteer program • Inter-agency collaboration • Close cooperation with CCAMLR, AFMA and RPOA-IUU in notifying on vessels suspected of IUU activities • Adopted the Joint ASEAN-SEAFDEC Declaration on Regional Cooperation for Combatting Illegal, Unreported and Unregulated 	<ul style="list-style-type: none"> • Signing of MOU and MOA between government agencies, private sector, local fishers and other stakeholders • Collaboration with regional and sub-regional organizations such as PNA, WCPFC 	<ul style="list-style-type: none"> • Participation and commitment to regional efforts to combat IUUF • Convergence of different government agencies, NGOs/CSOs, local governments, development partners, and private sector 	<ul style="list-style-type: none"> • Facilitates workshops on improvement and strengthening of law enforcement and cooperation among government staff and other relevant stakeholders • Engagement in more surveillance activities conducted by FFA • Conduct of 100% port inspection, monitoring of transshipment and unloading licensed 	<ul style="list-style-type: none"> • Information sharing amongst stakeholders • Participation of local fisherman in government fisheries management initiatives or programs • Engagement of other government institutions and private companies (18 vessels) operating in the country

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
		Fishing and Enhancing the Competitiveness of ASEAN Fish and Fishery Products <ul style="list-style-type: none"> • Cooperation with CCAMLR, AFMA and Interpol in capacity building programs for DOFM officers 			vessels to ensure compliance <ul style="list-style-type: none"> • Improvement of filing system for CDS and traceability documents • Utilization of MCS tools • 100% coverage on observers on-board purse seiners 	
(4) Lessons learned; How/where may the lessons be applied?	<ul style="list-style-type: none"> • Weak compliance monitoring system in place • Inadequate capacity to detect, to respond, and to punish the violator • International cooperation not fully utilized • Gap in terms of interpretation and perception with regard to law and regulations among enforcement officers • Limited jurisdiction under the current Special Fishery Court • Lack of capacity to apply “multi-doors approach” in 	<ul style="list-style-type: none"> • Strengthened cooperation and collaboration among national agencies prevents overlapping and duplication of work • Cooperation with international organization such as CCAMLR, AFMA and RPOA-IUU is imperative to combat IUU fishing • Need to strengthen cooperation with neighboring countries, e.g. information sharing of vessel registration, among others 	<ul style="list-style-type: none"> • Negative economic, social and biological impacts of IUU fishing • Combating IUU fishing is a collaborative effort not just within a country, but between countries and international partners • Good management plans and regulations both domestic and abroad will contribute to eliminate IUU fishing • Development of SOP, capacitated MCS personnel, and effective collaboration 	<ul style="list-style-type: none"> • Need for massive IEC • Broad-based consultative and participatory decision-making process • Sound research on status of resources, and help to improve management of fisheries • Good governance • Enhance institutional capability on sustainable management of fisheries and other aquatic resources • Policy reforms 	<ul style="list-style-type: none"> • Continue collaboration amongst authorities and relevant stakeholders • To have proper and functional CDS and traceability schemes to trace fish exports 	<ul style="list-style-type: none"> • Ensure public awareness on combating IUU fishing programs, law and regulations • Strengthen law or regulations • Establish and strengthen HR support facilities • Ensure lessons learned be taken up by inter-ministerial institutions, NGOs, local leaders and local fishermen.

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
	Fisheries Law Enforcement		among national agencies, sub regional and regional organizations will reduce IUU fishing <ul style="list-style-type: none"> Lessons/experiences can be applied in the development of SOPs and NPOA 			
(5) Training and capacity building needs	<ul style="list-style-type: none"> Training and capacity for the Special Court for Fisheries Affairs to implement the “multi-doors approach” Special training on PSMA Fisheries intelligence support Trainings for data collectors/enumerators 	<ul style="list-style-type: none"> Development of training modules and conduct of trainings for Observers on-board Cross-visits to AFMA, CCAMLR for on-site learning on PSM implementation Provision of financial resources, technical/advisory support from FAO, RFMOs and other developed countries on port inspection and PSMA implementation 	<ul style="list-style-type: none"> Trainings on understanding and implementing existing national, regional and international binding agreements or related documents dealing with IUU fishing practices Engage Coastal States, Flag States and Port States’ fisheries officers in the trainings Port State Measures 	<ul style="list-style-type: none"> Improved work force and law enforcement capability, i.e. reorganization of fisheries staff from national to regional, increased capacity for frontline services, acquisition of multi-mission vessels for monitoring, patrol and surveillance, and institutional capacity on sustainable management of fisheries and other aquatic resources 	<ul style="list-style-type: none"> Legal trainings on national laws Trainings on evidence gathering, forensics, report writing, conducting interviews, use of electronic monitoring devices, and integrated fisheries information management systems (iFMS) 	<ul style="list-style-type: none"> Trainings on VMS operation, fisheries staff (observatory), inspection, and catch certificate Establish Port State Measure Sharing of best practices from other countries
(6) Future directions in addressing IUU fishing	<ul style="list-style-type: none"> Improvement of vessel registration system based on good governance principle 	<ul style="list-style-type: none"> Establishment of two-tier national committee to combat IUU fishing, including to explore potential accession 		<ul style="list-style-type: none"> Strengthen capacity of fishery law enforcement agencies Enhance science-based information 	<ul style="list-style-type: none"> Expand recruitment for MCS staff Establish new offices for new staff 	<ul style="list-style-type: none"> Capacity building for government officials/institutions, private companies and local fishermen Financial support

	Indonesia	Malaysia	Papua New Guinea	Philippines	Solomon Islands	Timor Leste
	<ul style="list-style-type: none"> • Strengthening capacity port state controls • Improvement of catch and trade reporting/documentation • Improvement of fishery license • Improvement of surveillance system • Comprehensive and integrated enforcement and compliance policy on IUUF • Inclusion of human rights-based traceability, in addition to promotion of food safety and security • Strengthening international cooperation 	<ul style="list-style-type: none"> • to the FAO PSM Agreement • Ensure domestic legislation are in place for PSM implementation • Implementation of e-ACDS established under ASEAN umbrella • Increased commitments from the private sector in combating IUU fishing to maintain and sustain resources • Assistance to countries in building capacity towards the implementation of PSM • Increase awareness on IUU related legislations/laws • Cooperation with bodies/initiatives/arrangements with the objective to combat IUU fishing 		<ul style="list-style-type: none"> • Provision of technical assistance • Acquisition of floating assets for MCS • Strengthen Port State Control Measures • Further collaboration with CTI partners through information sharing and joint research on IUU fishing 	<ul style="list-style-type: none"> • Continue implementation of EM and ER longline licensed vessels • Strengthen observers program • Further learnings from other countries • Support MCS activities across CT Region • Seek funding support for MCS activities in Solomon Islands 	<ul style="list-style-type: none"> • Ensure to gain knowledge based from experiences of other countries • Scale up programs into government policy

III. Technology Providers Presentations: Experiences and Applications in Addressing IUU

Technology providers who also served as participants to the Fishers' Forum presented their individual organization's program and technology which enhance traceability and improves fisheries program. Presentations of technology providers are attached as **Annex E**. Below are the list of presentations with summary.

1. *Controlling IUU in the Asia Pacific: a seafood industry perspective*
Presented by Steve Fisher, Sea Delight

The organization/technology provider recognizes the issues on overfishing, IUU fishing, bycatch impacts and lack of appropriate fisheries management. Its policy is sourcing from high-quality management source to achieve sustainability. This means achieving right balance and sound fishing practice that will benefit communities.

Based from its experiences in Vietnam and Indonesia, the technology helps to reduce IUU fishing by using simple tools such as pointed stick/knife. The goal of the Sea Delight program is to empower fishers to improve the quality of their catch by providing correct tools for sustainable fishing; and pay back to communities by offering better prices. As one of the results, a 100% increase in tuna landed with high quality are exported fresh to Japan. The program has developed a system that organizes meetings with the fishers, brokers, financiers, distributors, processor representatives, and representatives of buyers overseas which is usually Sea Delight. The fishers are offered with high-quality tuna on-board processing tools for free, with free trainings on how to use them. In exchange, they are requested to join the fishermen's group like a cooperative. They are also asked to sign an agreement to apply as a broker or a processor. This platform has allowed a dialogue between the stakeholders involved with regard to the logbook and data collection issue. The issues raised include confidentiality of information, writing in logbooks, and the rational with regard to writing data if the government does not require them.

The technology provider also uses a tracking device using GPS called the SPOT, a water and shock-resistant, to report IUU fishing activities. SPOT is also connected to an email where information are sent including the exact time and place where the button was pushed to send information. The information also provides a map.

2. *Reducing the barriers to access to catch documentation and traceability technology*
Presented by Alistair Douglas, EcoHub

MFish was launched in 2014 by former US Secretary of State John Kerry with the goal of *US\$ 0 cost of adoption, reported increased safety and increased fishing efficiency*. The roll-out was done in Indonesia. The technology serves as a logbook to help fishermen fish better and provide more information through communication with one another. It serves as a data logbook for traceability in the supply chain. One of the challenges is the heavy reliance on smartphones with slow penetration/signal in some countries, and among fishermen especially artisanal fishers. Another challenge is the high data cost in developing nations. Lastly, fishermen often change their mobile numbers, and no email addresses to remind them of their password.

In 2016, EcoHub partnered with US State Department to learn from the initial challenges in 2014-2015. As a result, they enhanced the technology by using 2G data coverage and cheaper phones like Nokia; and with no password required. The key for success of this technology is free data so the company collaborated with Telecommunication companies (Telcos). The technology has more than 16,000 users monthly, zero cost of adoption and use, conduct of best practice training such as tuna handling and chat box. Best practice trainings and tuna handling manuals are also provided by the EcoHub. The technology will also be launched in the Philippines this 2017 in partnership with Globe and SMART telecommunications companies.

Data hubs issues are mostly coming from fragmented supply chain. Traceability is difficult because product identification is difficult. There are also processes that are undesirable but not illegal such as micro injection of tuna to inflate their weight. Hence, this is the reason why there is a need for transparency. Who pays, how much, when, how to access data is also one of the challenges of traceability. The challenges also include data protection, sovereignty, addition and partitioning, standards and interoperability.

3. *Solar powered, high resolution vessel tracking for managing small scale fisheries*
Presented by Melissa Garren, Pelagic Data Systems

Under the global context of fish stock exploitation and undernourishment, Pelagic Data Systems provides a technology that makes monitoring and robust data collection universally available for vessels to improve fisheries management, livelihoods of fishing communities, and sustainability of marine resources. The technology is a solar-powered device that which provides automatic data collection and simple installation method. It also provides cloud-based data analytics and data can be uploaded via cellular network.

Tracking is beneficial to fishers due to market opportunities, maintaining control of their own data, and can serve as support for compliance purposes. Moreover, tracking is industry driven seeing it as proactive marketing form a trader's point of view, and serves as silent and inexpensive insurance policy letting distributors/buyers where the fish came from. This also addresses the issue of top-down regulation for small-scale fishers which the government requires.

The technology provides the following services:

- Finding hidden behavior with high density data
- Visualize interactions among vessels
- Identify different fishing activities
- Raw fishing trips
- Identify individuals/fishermen and fleets
- Determine catch per unit effort (kg/hour)
- Determine catch per unit effort (CPUE) for nets vs. traps
- Establish ground truthing logbooks
- Avoiding undesirable catch
- Supporting smart fishing decisions
- Monitoring protected area compliance
- Supporting territorial rights

4. *The possibilities and limits of technology to address IUU fishing*

Presented by Charles Kilgour, OceanMind/Catapult

The technology called *Catapult Satellite Application* was established in 2015. The technology supports fisheries monitoring, control and surveillance. It also targets illegal, unreported and unregulated (IUU) fishing. The technology also enhances risk management for the seafood supply chain. The technology also prevents unbiased, independent monitoring, verification and validation of data.

Some of its case studies include:

- Thailand vessel monitoring trial
- Maldives pole and line fishery monitoring
- Polynesian Leaders Group fishery monitoring, control and surveillance
- Chile Exclusive Economic Zone (EEZ) monitoring, control and surveillance
- Pitcarin Island Marine Reserve Monitoring
- Supermarket supply chain compliance and verification

The technology caters to government agencies, seafood retailers and their supply chain, regulatory and management bodies, trade groups and fisheries.

5. *The start of a new day. Digital disruption and how it affects IUU*
Presented by Alan Steele, Catch Corporation/Earthwine

The program coupled by technology solutions is using a holistic approach to catch documentation and traceability. It allows the utilization of on-vessel systems, bar-coding at sea, fish e-log, food trace, tracking, monitoring, and supplier traceability.

Catch Corporation are pioneers in electronic traceability solutions with 20 years of experience in worldwide fishing markets. The company has constructed and installed this system in many hundreds of Asian and Pacific, and Europe as well, fishing boats. The organization works with governments, fleet owners, communities and cooperatives, processors, logistics companies and retailers.

The Blockchain technology is the future of banking industry and will eventually be used to other technology solutions provider. Today, blockchain technology is popularly known as the bitcoin which is currently being developed in the US. The blockchain automatically determines if a transaction is illegal, thereby enhances traceability.

6. *Summary of PITIA work and experiences with anti-IUU technology*

Presented by Brent Haywood, Pacific Islands Tuna Industry Association

The PITIA is an organization that provides a united voice for domestic fishing and associated industries of members. It also facilitates and encourages promotion of the economically and biologically sustainable use of tuna and tuna-related resources. Moreover, it undertakes, coordinates and promotes liaising and negotiations with national, regional and international bodies and other entities with similar interest.

The program promotes economic benefits such as employment, gender equality, infrastructure development, government revenues, export revenues, and benefits to other sectors. It has partnered with UNFAO in some of its projects such as the Fiji Longline Fishery and Ghana Purseine Fishery.

Based from the organizations experience, the most effective way for PICs to maximize the economic benefits from tuna resources is through a sustainable and rational domestication of the tuna industry. It is also critical that collaboration amongst stakeholders, policy makers and leaders be established in terms of IUU and technology awareness towards a sustainable and equitable contribution to the Pacific Island Nations.

7. *Tails app for electronic data collection and its application in coastal fisheries management*
Presented by Andrew Hunt, SPC

The technology uses android application in phones or tablet. It is linked to SPC's regional Tufman 2 fisheries database, and has built in Angular JS. The technology/application also adheres to regional standard data formats and available in French and English languages.

Tails provide instant data which replaces paper in catch documentation hence providing better quality coastal fisheries data. The approach used by the organization to improve the system is through interaction with real people like the fishermen, filling the skill gaps such as using android phones and application.

Effort data, internet connection and identification of names for fish are some of the areas that the technology should improve. Presently, the organization is working on providing reports and analysis to the fishermen via tails and/or email. The organization will also provide linkages with other initiatives and applications. The technology will also provide self-reported data for coastal fishermen. Better and cheaper waterproof tablets are also under the development stage.

8. *The Oceans and Fisheries Partnership: A regional initiative to combat IUU fishing and seafood fraud using catch documentation and traceability systems in Southeast Asia*
Dr. Arlene Satapornvanit

The Oceans and Fisheries Partnership (USAID Oceans) program works to strengthen regional cooperation to combat IUU Fishing, promote sustainable fisheries and conserve marine biodiversity in the Asia-Pacific region. The program also supports the development of transparent and financially sustainable Catch Documentation and Traceability Systems to help ensure that fisheries resources are legally caught and properly labeled. The system supports transparency and interoperability through established data standards and a common set of Key Data Elements that ensure a core set of traceability data is collected to meet varying market regulations. The system is designed to support wild capture fisheries in Southeast Asia and the Pacific region and supports improved fisheries management and traceability, based on the ecosystem approach to fisheries management.

With Catch Documentation and Traceability System data, governments will be able to strengthen laws and improve natural resource management to lessen the impact of fisheries on marine ecosystems, reduce pressure on marine biodiversity and strengthen biodiversity conservation efforts. USAID Oceans supports increased capacity in fisheries management through technical support and trainings, guided by an Ecosystem Approach to Fisheries Management. The Partnership also provides guidance in harmonizing existing and developing new regulatory policies and facilitates the development of updated fisheries management plans that build off of in-depth field research and Catch Documentation data.

To further improve transparency in the seafood supply chain and help ensure successful, sustainable solutions, USAID Oceans engages a variety of fisheries stakeholders and forms new partnerships among government, regional institutions and the private sector.

USAID Oceans also seeks to improve labor conditions, gender equity and gender equality through its Catch Documentation and Traceability System and all program initiatives. It aims to provide guidance to regional partners on best practices in labor and encourage system partners to use a recommended set of Key Data Elements that address the human element of fishing activities.

The program is implemented by TetraTech ARD, in partnership with the Southeast Asian Fisheries Development Center (SEAFDEC) and the Coral Triangle Initiative for Coral Reefs (CTI-CFF). It also works with the Governments of the Philippines and Indonesia to implement and test its Catch Documentation and Traceability System in the program learning sites of General Santos City, Philippines and Bitung, Indonesia. The program also works with the ASEAN and CTI member countries to bolster their capacity for and implementation of catch documentation and traceability in national fisheries.

Other partners include the National Oceanic and Atmospheric Administration, the U.S. Department of the Interior, the UN Food and Agricultural Organization, SSG Advisors, Verité, and the Government of Sweden.

9. *Electronic ASEAN Catch Documentation Scheme: Pilot Testing*
Patinarch Talavan, Ocean and Fisheries Partnership

The ASEAN Catch Documentation Scheme is a regional tool/initiative for cooperation to prevent the entry of IUU Fish and Fishery Products into the Supply Chains. The key challenges faced in the region are IUU fishing, sustainable fisheries, food safety and traceability, and by-catch. This is in response to market driven measures such as the EU's EC-Regulation 1005/2008 and Regional Fisheries Management Organizations (RFMOs).

The tracking system monitors the fish from point of catch through to its final destination preventing the entry of IUU fish products into the market and supporting fish stock assessments. SEAFDEC member countries expressed their support on improvement of the traceability for capture fisheries toward the development of common regional catch documentation scheme/system called "ASEAN Catch Documentation Scheme (ACDS)."

The objectives of ACDS are: (1) provide unified framework that will enhance traceability of fish and fishery products for effective management; (2) enhance the credibility of fish and fishery products for intra-regional and international trade; and (3) prevent entry of fish and fishery products from IUU fishing activities into the supply chains.

e-ACDS was develop on web-based and mobile application. Some of the recommendations for the e-ACDS include a common format, standard and information that are aligned with the importing countries requirements. It should be simplified for small-scale fisheries. The e-ACDS should also ensure that ACDS once endorsed by AMS would not create unnecessary burden, cost or lengthy process for importers/exporters while support for long term management of supply chain. e-ACDS has also integrated the lessons learnt from CCAMLR, SwAM/Sweden, MAFF/Indonesia, DOF/Thailand, and FMO/Thailand.

The system also complies to international requirements such as that of EU, the US Presidential Task Force and Two new US Seafood Traceability Programs, verification system of the landing data and along the supply chains, and requirement of electronic system.

10. *Industry-lead dialogue on a Global Standard for seafood traceability: challenges and opportunities*

Susan Roxas, WWF

The Global Dialogue on Global Standard for seafood traceability is a consortium of organizations while not a WWF only initiative. Global Food Traceability Center (GFTC) and WWF have initiated the said global dialogue, and technically supported by Fishwise and Fishers and Fish.

Consistent with all the consultations among the industry, we need a global standard for traceability since the production and value-chain today are global. The imperatives of the international standard should be cost-effective full-chain, digitally transmitted through interoperable systems, and built on trust within the industry which is helpful when working with governments.

The global dialogue is an industry-led, pre-competitive dialogue that aims to advance a global framework for seafood traceability that will:

- Improve the reliability of seafood information
- Reduce the cost of seafood traceability
- Contribute to supply chain risk reduction
- Contribute to securing the long-term social and environmental sustainability of the sector
- Level the playing field for industry actors from large scale multinationals to small to medium firms and artisanal fishers

Some of the challenges to this global dialogue are technology confusion, non-interoperable and redundant system, those country-specific problems, and diverging regulatory requirements. The global dialogue is composed of three (3) working groups (WG) including key data elements (KDEs), architecture and regulations.

A first substantive technical discussion for North America and Europe, and second Asia Pacific Meeting (webinar) will be conducted. Approval of structure, governance, WG mandates and output, begin WG1 process to identify basic list of KDEs, agree on meeting logistics, timelines, milestones, among others will be discussed.

IV. Open Forum/Discussion Results

During the open forum, participants were able to inquire about the technologies and programs presented by the resource speakers relative to combatting IUU fishing and improving traceability system. The following are the results of the discussion:

1. Data is owned by the entity who collected them. On the other hand, aggregated data can be sold and be bought for fishermen. For Pelagic Data System, the organization works with 12 different countries which differ in data sovereignty laws, data agreements, and data-sharing structures. In Vietnam, the cost of data is shared by the government. In summary, data-sharing varies depending on existing laws or policies of a particular country where specific data is required.
2. Since the fishermen cannot afford to pay for the technology especially its maintenance, there are other institutions or organizations who can pay for the device as well as internet connectivity such as NGOs and governments. It could also be supported through a public-private partnership to leverage private money and get the technology installed so that the industry shoulders the cost.
3. Catch documentation should be advocated in the Coral Triangle Region because most of the fishing industry do not know that what they are doing is illegal.
4. The blockchain technology is perceived to be using a self-reporting system, while no mention of verification system. However, the blockchain technology should be looking at the entire supply chain, and not just a simple chain. For example, if the supply started at 10 tons and end up with 10 tons, then the blockchain should be able to validate the numbers.
5. To ensure that products sold are from raw sources, there should be a system established for audit purposes. Traditionally, industries use bar codes or a tagging system. This can be done using new technologies in the market, or a third party firm.
6. The PITIA work aims to help Pacific Islands on domesticating industry. For example, Fiji was chosen to be the beneficiary of the PITIA program because of its very high content of domestication.
7. There was no resistance in data enumeration since the enumerators are volunteers. Data collection was also helpful for data collected by the national or central government.
8. Some of the technologies are tuna-centric, while some include other species.

V. Breakout Session on replicating and scaling-up

This session focused on identifying best practices, opportunities and keys for success with regard to combating IUU Fishing and enhancing traceability. The participants were given guide questions (see below questions) and be presented at the end of the first day of the program. The participants were divided into 5 groups having 1 facilitator and 1 note taker. **Annex F** shows the guide questions and results from each group discussion.

Break out group focus questions:

1. Based on the presentations and your own personal knowledge and experience, what are the best practices in combatting IUU fishing and explain why it is a best practice by stating the success factors?
2. What among the technologies presented are applicable, what do you think are missing elements or features, what are the obstacles for adoption and what do you think should be incentives for local fishers to have a buy-in?
3. What do you think stakeholders like government, fishers (artisanal/commercial), private companies/technology providers, NGOs, academic institutions, NCC should do to promote, sustain, and scale-up these best practices?

VI. IUU and Fisheries Improvement Projects (Sharing of country experiences)

Before proceeding to individual country presentations, a review of elements and principles of Fisheries Improvement Projects (FIPs) was shared by Mr. Geoffrey Muldoon. The purpose of accreditation and certification of fisheries is to apply standards for wild catch fisheries and aquaculture production to provide consumers quality seafood with environmental sustainability. The FIP concept was developed to help fisheries improve and to move towards a level of performance that is consistent with achieving the standards. The biggest incentive that FIP can provide for fisheries is access to markets and eventually be recognized at the marketplace once the standard is maintained.

Presenters from Malaysia, Vietnam and the Philippines have shared their country programs and experiences on IUU and Fisheries Improvement Projects. Below are the summary of each country presentation.

1. *Coral Reef Fishers FIP within Marudu Bay, Tuna Mustapha Marine Park*
Raymie Bin Nurhasan, WWF Malaysia

One of the major challenges on combatting IUUF is the destructive method of fishing such as cyanide fishing, bombing and the use of trawl nets. This is aggravated by the lack of awareness on environmental impacts on IUU especially at the community level. Hence, it contributes to the law enforcement issue with regard to combatting IUUF. The lack of facilities and infrastructures also contributes to this law enforcement problem as there is limited financial support received from the government. It is also difficult to identify the local water boundaries where the fishermen are allowed to fish. In addition, poverty and community conflicts on resources both contribute to these challenges.

Malaysia presented Berungus, a fishing community in Sabah as an example of a FIP model. Malaysia's efforts to combat IUUF include the (1) establishment of TMP Collaborative Enforcement Committee for information sharing, (2) capacity building programs for communities such as on wildlife protection, monitoring and patrolling, and (3) preparing an enabling environment for communities to establish locally managed marine area.

WWF Malaysia plans to engage 48 villages for FIP in Marudu Bay. In addition, the organization plans to increase the number of wildlife patrol officers or what they call Honorary Wildlife Warden (HWW). HWW are from the communities. One of their tasks is to promote community awareness. WWF Malaysia will also assist in the establishment of market for responsibly caught seafood.

The FIP areas are seen to have high potential to produce responsible and high quality fish given the high demands from the market for quality products. It is important the responsible and sustainable strategy for fishery will be introduced to maintain a healthy ecosystem in fishing communities.

2. *Developing a product traceability system for the Vietnam yellowfin tuna FIP*
Tran Van Hao, VinaTuna

The FIP was launched in 2014 to develop a “comprehensive” FIP measures to MSC performance indicators. The FIP is industry-driven with 9 international seafood company partners and 12 domestic processors. The industry membership fee depends on the amount of production (pay-per-kilo). A FIP Coordination Unit was established through Vietnam Tuna Association (VinaTuna) and WWF (Vietnam and Coral Triangle).

The FIP program in Vietnam tries to solve a specific market traceability problem. The main goal of the FIP is to establish a practical yet robust consistent system for differentiation of domestic YFT products from re-exported (not FIP-eligible) in the marketplace.

The FIP uses the following approach:

- Generic product traceability system at the processing plant level;
- Ensure sufficient integrity of a verifiable, auditable system to differentiate eligible FIP fish;
- Audited by independent third party;
- In practice to “piggy-back” on the existing HACCP procedures; and
- Provide additional benefits such as help processors prepare for new US trace rules and to add incentives to meet market requirements.

The FIP uses trace codes and database documentation.

3. *PPTST – FIP, the Lagonoy Gulf and Mindoro Strait Experience*
Joan Binondo, PPTST/WWF Philippines

The WWF Partnership Programme Towards Sustainable Tuna (PPTST) supports the livelihood of artisanal tuna handline fishers by establishing long-term market access and responsible fisheries management while providing mechanisms to supply selectively-caught yellowfin tuna to market actors and environmentally conscious consumers in Europe. The goal of a FIP is to strengthen the position and securing the livelihoods of small-scale Philippine fishers by achieving Marine Stewardship Council (MSC) certification of Yellowfin Tuna Handline Fisheries. The Project objectives are the following:

- Natural resource protection which provides sustainable livelihood to about 6,000 tuna fishers in 140 tuna fishing villages;
- 21 organized local tuna fishing communities are empowered to manage their natural resources;
- Reforms of the Philippines' fisheries policy to achieve equitable and sustainable production of the tuna; and
- Achieve MSC certification for the 2 small-scale yellowfin tuna handline fisheries of 2 project sites.

The project is implemented in two project sites – Mindoro Occidental in Western Philippines, and Lagonoy Gulf (covering 3 provinces) in the eastern side. The program aims to improve the livelihoods of more than 5,500 artisanal fishers in 21 municipalities of the said project sites.

Newly-established tuna handline fishers' organizations are starting to take on greater responsibilities in the tuna fisheries management process. Municipal and provincial fisheries management bodies have been revitalized and mobilized, escalating their roles in the management process. An MSC pre-assessment was conducted to devise a detailed roadmap towards the certification of these fisheries. Three (300) small yellowfin handline fishers attended training sessions on tuna handling and improved links to market systems for better economic benefits.

VII. Results of plenary discussion on FIPs

Below are the results from the plenary discussion on country presentations with regard to FIPs.

1. For the Philippines case, the approach was not reinventing the wheel. Working with the government is very crucial, hence the PPTST is in line with the current standards of the government through the Bureau of Fisheries and Aquatic Resources (BFAR). It will also be beneficial that an international/global standard for catch documentation or traceability system be established. VinaTuna can also share their country experience with towards standardization of traceability system. In the case of Malaysia, they are still using the traditional way of catch documentation which is paper-based. However, Malaysia is open to the possibility of using technologies to improve the traceability system.
2. The process of certification also adds to the cost of selling the fish which sometimes make it difficult to sell to consumers. Hence, it is important that FIP provides consumer awareness. Although the FIP does not promise a premium, it can provide a stable market for the product. However, according to Mr. Muldoon, the tool's ultimate purpose is to improve environmental performance rather than pricing. The stock is going down and fishing becomes harder. This will increase the cost because of the unsustainable manner of fishing. Therefore, FIP is used to better manage the fishery and not get market access or achieve a better price.
3. For PPTST, the FIP is a tool to monitor environmental quality and to ensure sustainable fishing. On the other hand, the consumers are looking at prices, and the best way to address this issue is to provide quality products in which the FIP can provide.
4. The statistics and some information presented by WWF Malaysia was suggested to be improved. Moreover, the laws and policies of Malaysia does not allow communities to punish violators with regard to IUU Fishing. On the other hand, the signboards indicating the punishment of violators was just an expression of how serious the communities are in protecting the environment according to WWF Malaysia.
5. There are technologies used such as standardized hooks for tuna fishing to avoid catching juvenile tunas. Academic and research institutions can play an important role to address this issue, particularly in promotion of technologies that will prevent juvenile tuna catch.
6. Working with stakeholders such as the government, the industry, and communities are necessary in for FIP.

The participants proceeded to the technology exhibit called *IUU technology marketplace* for the purpose of this event after the plenary discussion. The *marketplace* demonstrated CDS/traceability systems and other IUU tools, program overviews and displays, and training capsule sessions. The *marketplace* presenters include:

- Catch Corporation
- USAID Oceans
- SPC's tails app
- EcoHub
- OceanMind/Catapult

- Pelagic Data System
- Electronic ASEAN Catch Documentation Scheme

VIII. Workshop on moving forward

Participants were again instructed to join their original group during the first day of CTFF and discuss the following:

1. Recommendations to CTFF-III on scaling-up or replicating anti-IUU technologies;
2. Ideas on how traceability mechanisms (paper-based or electronic/digital) can be applied for existing or new FIPs; and
3. Ideas on how anti-IUU technology solutions are financed creatively or innovatively.

Results of the workshop is attached as **Annex G**.

IX. Communique

A draft communique for the CTFF-III was presented to the plenary for further comments and inputs. A final draft of the communique is attached as **Annex H**.

X. Action Plan and Next Steps

Participants were requested to write down their top 2 recommendations with regard to next steps or action plan in terms of combatting IUU in the provided sheet of colored paper. Each sector have an assigned colored of paper:

- White for development partners;
- Blue for NGOs/CSOs;
- Green for government representatives;
- Orange for commercial fishing or industries
- Pink for small scale fishers

Annex I enumerates the responses by sector during the planning session.

XI. Closing

The Senior Manager of Coral Triangle Secretariat Ms. Astrid Lim gave her acknowledgements thanking the contribution, participation and support of the Philippine Government through BFAR, Biodiversity Management Bureau (BMB), and the Department of Environment and Natural Resources (DENR). The participation of the Head of Delegation of the CT6 was also mentioned with their great contribution for the success of the said event. She also acknowledged the logistical and technical support provided by the WWF-Philippines.

Ms. Rosalie Massu, Chair of the Working Group of EAFM also shared her fruitful experience during the CTFF-III. She also acknowledged the support and assistance given by the organizers. She is also very thankful for the participation of the CT6, particularly their Heads of Delegation, and industry representatives.

BFAR Regional Director Ms. Remia Aparri also extended her gratitude to the CT6 participants. She also gave praises to the organizers who made the successful event possible as this is her first time to attend a CTFF with focus on combatting IUU, and discussion traceability and catch documentation.

Annexes

Photo documentation



Regional and country representatives answer questions by the media during the press conference on the culminating day of the CTF on July 6, 2017





International delegates discuss certain challenges and issues regarding fisheries policy implementation as well as solutions on how to address the problems that face their local fisheries and fisher folk during one of the sessions of the Breakout group July 5, 2017





Panelist Melissa Garren answers questions during a panel discussion as an Indonesian delegate looks on July 5, 2017





Delegation from Indonesia presents her report as others look on and listen at the beginning of the CTFE on July 4 , 2017



Philippines and Malaysian delegates run through their report before the plenary on July 5, 2017

Coral Triangle Fisheries' Forum
4-6 July 2017
Iloilo City, Philippines

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