A Workshop for Fisheries Enforcement Strategies to Prevent, Combat and Deter IUU Fishing Related to COVID-19 Pandemic

APEC Ocean and Fisheries Working Group

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Asia-Pacific
Economic Cooperation

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I. Introduction of the Project

The two-day workshop was held on 15-16 November 2023, in Banten. This workshop covered four main issues:

1. Providing knowledge to fisheries authorities in APEC member economies to ensure compliance with fisheries rules and regulations.
2. Enhancing the capacity of fisheries authorities to address fisheries violations, legality issues, pandemics, and other critical situations.
3. Strengthening the capacity of fisheries authorities in using technology for health management tools related to pandemic risk mitigation in APEC member economies.
4. Providing recommendations for effective fisheries enforcement actions during the COVID-19 pandemic that can also be incorporated during other similar emergency situations."

II. Objectives of the Meetings

A Workshop on Fisheries Enforcement Strategies to Prevent, Combat, and Deter IUU Fishing in Relation to the COVID-19 Pandemic is a two-day event scheduled to take place in Banten in November 2023. The forum aims to provide a platform for stakeholders in the fisheries sector, including fisheries authorities, practitioners, professionals, academia, and government representatives involved in ocean, fisheries, and environmental matters. The goal is to exchange ideas on developing strategies to prevent, combat, and deter IUU Fishing in connection to COVID-19 and other similar critical situations.

Experts from APEC, relevant international organizations, and academics with expertise in oceanography, fisheries, business, and economics attended the forum to share their knowledge and insights on IUU Fishing.

On the final day of the forum, a policy recommendation was produced based on input from APEC economy representatives. The representatives presented their ideas on the draft policy recommendation, which contains best practices for strategies to prevent, combat, and deter IUU Fishing related to COVID-19 and other similar critical situations in the Asia-Pacific economies.

III. Briefings of the Presentations in the Workshop

The speakers came from different backgrounds of expertise, such as government representatives, fishery-related organizations, and business representatives. This two-day workshop was opened by a keynote speech from the Director General of Surveillance for Marine and Fisheries Resources, Ministry of Marine Affairs and Fisheries of Indonesia, Laksda Adin Nurawaludin

Opening remarks

Dr. Adin Nurawaluddin M.Han – Director General of Surveillance for Marine and Fisheries Resources, Ministry of Marine Affairs and Fisheries of Indonesia

- In his opening remarks, Dr. Adin Nurawaluddin M.Han addressed the profound impact of the COVID-19 pandemic on the global fisheries sector. Acknowledging the essential safety measures, he highlighted the resulting challenges for fisheries authorities in enforcing regulations and combating Illegal, Unreported, and Unregulated (IUU) fishing effectively.
- The pandemic's repercussions across APEC Economies disrupted coastal communities' livelihoods, fishing practices, and market access. Drastic measures, such as staff reductions and reallocating budgets to pandemic-related emergencies, have led to a concerning reduction in enforcement capabilities, contributing to the rise of IUU fishing.
- Citing the Food and Agriculture Organization (FAO), Dr. Nurawaluddin emphasized that the impact on Fisheries Monitoring Control and Surveillance (MCS) was a global concern, urging collaborative efforts to ensure both safety and effectiveness in fisheries enforcement.
- The workshop aimed to identify and implement effective fisheries enforcement strategies during the COVID-19 pandemic, exploring ways to expedite post-pandemic recovery. It aligns with the APEC roadmap on combating IUU fishing, emphasizing practical outcomes rather than academic exercises.
- Dr. Nurawaluddin encouraged active participation, sharing of expertise, and collaboration. The workshop sought to provide actionable recommendations applicable during the pandemic and in similar future situations. Drawing on Indonesia's experiences, participants would enrich discussions and formulate practical solutions.

- In conclusion, Dr. Nurawaluddin expressed gratitude for participants' commitment to this vital cause and anticipated a productive and enlightening workshop, fostering strategies to safeguard oceans and support the sustainable development of the fisheries sector.

Keynote Speech

Mr. Ari Prabowo – the Head of Public Relations and International Cooperation Bureau, Ministry of Marine Affairs and Fisheries of Indonesia.

- In his keynote speech, Mr. Ari Prabowo highlighted the grave threat of illegal, unreported, and unregulated (IUU) fishing, emphasizing its impact on the sustainability of fisheries, the well-being of fishing communities, and broader societal interests. IUU fishing remains a persistent obstacle to achieving sustainable development goals, leading to the depletion of crucial ocean resources.
- In the Asia-Pacific region, sustainable fisheries, vital for economic development, face constant threats from IUU fishing, annually depleting significant quantities of fish from the ocean and draining billions of dollars from economies. Despite the global fisheries industry's annual value of USD 144 billion, with 90 percent relying on small-scale fishing, IUU fishing persists, accounting for the loss of 20 percent of global fish catches, exacerbating food insecurity and poverty.
- The COVID-19 pandemic intensified concerns about IUU fishing, disrupting monitoring and enforcement initiatives. Reduced surveillance during the pandemic resulted in a surge in IUU fishing, posing a substantial threat to fisheries' sustainability. The lack of monitoring hindered effective fisheries management and conservation, impeding efforts to ensure responsible and sustainable marine resource utilization.
- Addressing these issues requires substantial steps, including implementing robust monitoring and surveillance systems, utilizing technology to track fishing vessels, and enhancing cooperation and data sharing among economies. These measures are crucial to curbing illegal fishing and ensuring the sustainability of marine resources.
- In the context of APEC, cooperative efforts align with the 2030 Agenda for Sustainable Development, focusing on Sustainable Development Goal 14 to end IUU fishing. Despite progress through the APEC Roadmap for Combating IUU Fishing, greater action is still needed in the Asia-Pacific region, contributing nearly 52% of the global marine fisheries catch.

- The challenges posed by COVID-19 underscore the necessity for adaptation, resilient systems, and international cooperation in the fishing sector. Timely and accurate information sharing among authorities is crucial for risk assessment and preparedness as fishing vessels traverse various economies, regions, and ports.
- While the need to share proprietary data presents challenges, the pandemic has shown the importance of sharing such information for the greater good. Mr. Prabowo encouraged fishermen and flag Economies to consider sharing important data to combat IUU fishing, balancing profit and privacy with transparency and cooperation.
- Looking to the future, continued cooperation, market shifts, technological advancements, and improved communication among authorities, vessels, and governments have the potential to revolutionize the future of fisheries. It's essential to recognize that illegal fishing is a human-created problem and can be resolved through a unified global effort.

Session 1:
Moderator: Dr. Richard Stanford – The Indigo Consultancy
Overview of IUU Fishing Issues in the Asia-Pacific Region

Mr. Simon Funge-Smith – FAO Regional Office for Asia and The Pacific
Benefits of a COVID-19 Heat Map of Coastal Regions as a Quick Reference Indicator during Unplanned Encounters at Sea

- There are various forms of IUU (Illegal, Unreported, and Unregulated) fishing activities, with a specific focus on the "illegal" or 'non-compliance' dimension. The illegal fishing activities encompass:
  - Vessel/Operational Documentation:
    - Fishing without a license or with falsified licenses.
    - Falsification of vessel registration.
    - Duplicate (dual flag) and falsified registrations.
  - Catch Reporting:
    - Non-reporting, misreporting, or under-reporting of catch.
  - Landings and Transshipment:
    - Unauthorized landing of fish/landing in a location other than the authorized port.
    - Unauthorized transshipment.

        - Transshipping to a economy port of beneficial ownership.
    - Use of Destructive Fishing Gears and Methods:
        - Employment of destructive fishing gears and methods such as cyanide or blast-fishing.
    - Catching of Prohibited/Protected Species:
        - Capture of prohibited or protected species, including but not limited to grouper, reef fish, coral, etc.
- IUU fishing has diverse and far-reaching impacts, encompassing rent-seeking behavior for access fees and certifications, as well as corruption during inspections. The presence of unregistered vessels, or those flying dual flags, complicates regulatory efforts, hindering accountability. Economies experience direct revenue losses due to underreported and untaxed catches, undermining the economic sustainability of fisheries. IUU activities further erode both domestic and Regional Fisheries Management Organizations (RFMO) measures, impeding effective fisheries management. Tensions arise between large-scale and small-scale fishers, intensifying competition for limited resources. Enforcement measures, including incarceration of fishers and vessel impoundment, act as deterrents but contribute to social and economic challenges. The use of illegal fishing gears poses threats to marine ecosystems and compromises conservation efforts, particularly for vulnerable species and habitats.
- IUU fishing is a complex phenomenon driven by both opportunistic and calculated factors. Fishers, particularly in the larger scale sector, are willing to take risks for economic gain if they believe they can evade detection. This risk-taking behavior involves weighing the potential income against the likelihood of penalties or capture. In the Small Scale Fisheries (SSF) sector, the motivation is often rooted in the necessity to secure a basic income, driven by poverty that fuels unsustainable fishing practices. Traditional norms may be disregarded as individuals prioritize providing for their families.
- Compounding the issue, many regions face uncertain maritime boundaries, creating challenges in enforcing regulations. Coastal fisheries often have limited Maritime Domain Awareness (MDA) and Monitoring, Control, and Surveillance (MCS) capabilities, contributing to a relatively low risk of capture or fines. The limited number of successful prosecutions adds to the problem, resulting in a low deterrence effect. Prosecuting IUU

fishing cases across provincial boundaries is particularly challenging, making it almost impossible to gather the necessary evidence for court proceedings. Addressing IUU fishing necessitates comprehensive strategies that not only enhance monitoring and enforcement capabilities but also tackle the root causes, such as poverty and the lack of effective governance structures.

- According to a collaborative study by FAO and CSIRO, IUU fishing hotspots are prevalent across the Asia region, with 33 identified in total. Nearly every economy in the region grapples with IUU issues, particularly concerning foreign or foreign-beneficially owned vessels. The study focused on the "Illegal" aspect of IUU, revealing that estimated illegal-fishing landings across Exclusive Economic Zones (EEZ) and high seas in the Asia-Pacific Fishery Commission (APFIC area) totaled 6.6 million tonnes in 2019, with an estimated value of USD 23.3 billion. These findings align broadly with previous studies in terms of catch, but key differences emerge concerning the prices used in calculations. While other studies have delved into various aspects of IUU, the FAO-CSIRO study specifically focused on the illegal aspect, shedding light on the alarming extent of illegal fishing activities in the region.
- The FAO-CSIRO study highlights that bilateral violations are the most prevalent in the Asia region. Astonishingly, for approximately half of the economies in the area, more than 25% and up to 100% of IUU activity is attributed to vessels flagged by other economies. It's worth noting that this percentage might be even higher when factoring in domestically flagged vessels with foreign-beneficial ownership.
- Efforts to address IUU fishing in the region require a sustained focus on combating illegal activities. To achieve this, there is a need for the development of comprehensive guidance to assist economies in undertaking legal and regulatory reforms. Building the capacity of enforcement agencies is crucial to enhance their ability to effectively monitor and enforce fishing regulations. Collaborative initiatives should promote the sharing of information among economies, fostering the development and implementation of cost-effective technological innovations in monitoring and surveillance.
- A risk assessment approach can play a pivotal role in identifying areas with relatively high levels of illegal fishing, enabling targeted interventions. Additionally, it is imperative to strengthen efforts aimed at supporting member economies in addressing stock depletion

and improving the profitability of their fishing industry. This multifaceted approach, encompassing legal reforms, capacity building, technology integration, risk assessment, and industry support, is essential for creating a sustainable and resilient framework to combat IUU fishing and safeguard marine resources in the region.

Mr. Fatimana Agustinanto – United Office on Drugs and Crime (UNODC)

The Impacts of COVID-19 Pandemic on the Fisheries Sectors of the ASEAN-SEAFDEC Member Economies

- When the coronavirus was first identified in Wuhan in 2019, its impact was significant, necessitating robust measures for containment. Containment efforts for COVID-19 compelled economies to enforce border controls, including those pertaining to maritime borders.
- Southeast Asia, comprising archipelagic economies with porous sea borders, faced unique challenges. Notably, economies like Indonesia and the Philippines share a porous sea border, allowing for relatively easy travel between islands. Managing virus transmission through such sea borders presented considerable difficulties.
- Recognizing the complexity of the situation, the General Secretariat of the Forum of National Maritime Fusion Centres (FNMFC) of Southeast Asia and the Pacific, acting as the Secretariat for the Maritime Operations Centre, took proactive steps. In August 2020, they developed a COVID-19 heat map to assist coastguard agencies in mapping geographical coastal areas with a high prevalence of the virus. This initiative aimed to support Maritime Operations Centres in identifying threats and assessing risks while at sea. The heat map, updated fortnightly, was shared with various operation centers across economies in Southeast Asia, enhancing regional coordination in the fight against the pandemic.
- The COVID-19 heat map developed by the General Secretariat of the Forum of National Maritime Fusion Centres (FNMFC) offers several advantages to coastal agencies in Southeast Asia. It serves as a simple yet effective visualization tool, providing a quick and accessible overview of the domestic and regional COVID-19 situation through a geographical presentation of confirmed cases.
- One of its key benefits is the ability to monitor COVID-19 cases in coastal provinces. This level of data disaggregation enables maritime operation centers to determine whether

vessel encounters are located or have been in " COVID-19 hotspots" in Southeast Asia. By having access to this specific information, these centers can make data-driven decisions and implement precise mitigation steps. This targeted approach enhances the effectiveness of response measures, contributing to the overall management of the pandemic in the maritime context.

- The COVID-19 heat map offers valuable insights for coastal agencies, yet it is crucial to acknowledge its inherent limitations. The map's accuracy depends on the availability and integrity of government or publicly accessible data, potentially resulting in gaps or inaccuracies in regions with insufficient information. Additionally, maintaining data consistency poses challenges, as real-time updates may not always be feasible. Delays in updating figures could impact the timeliness of the heat map, affecting the ability of maritime operation centers to make well-informed decisions based on the latest COVID-19 developments in coastal provinces. Recognizing these limitations emphasizes the need for continuous efforts to improve data collection, sharing mechanisms, and real-time updates, aiming to enhance the reliability and effectiveness of the heat map as a decision-support tool for managing COVID-19 risks in the maritime domain.

Presentation by Mr. Worawit Wanchana - Southeast Asian Fisheries Development Center (SEAFDEC)

Effects of the COVID-19 pandemic on the ability of RFMOs to combat IUU fishing: A perspective from CCAMLR

- The COVID-19 pandemic has introduced several potential impacts on fisheries and aquaculture in Southeast Asian economies:
    - Restriction of People Activities: Government-imposed restrictions on people's activities, including movement and gatherings, may disrupt traditional fishing practices and limit the ability of fishers to operate. This can affect both small-scale and commercial fisheries.
    - Limitation of Domestic Logistics: Restrictions on domestic logistics, such as transportation and distribution networks, can impede the timely movement of fishery products from production areas to markets. This limitation may result in delays, affecting the overall supply chain.

- Suspension of Fresh Market Operations and Food Services: The suspension of fresh market operations and food services, driven by lockdowns and social distancing measures, directly impacts the sale and consumption of seafood products. This can lead to economic losses for fishers and aquaculture producers.
- Enforcement of Social Distancing: Social distancing measures enforced to curb the spread of the virus may affect the working conditions on fishing vessels and aquaculture farms. These measures can impact productivity and potentially lead to labor shortages.
- Cancellation of International Logistics: The cancellation or disruption of international logistics, including the export and import of seafood products, can have severe consequences for economies heavily reliant on the global seafood trade. Export-oriented fisheries and aquaculture sectors may face challenges in accessing international markets.

- The Seafdec study conducted in 2021-2022 sheds light on the significant and varied impacts of the COVID-19 pandemic on the fisheries sector, indicating drastic impacts on decreased incomes and worsened economic conditions for people engaged in the fisheries sector. However, it also reveals signs of recovery and improved conditions for fishery and natural resources.
  - Fishery and Processing:
    - A notable decrease in the number of fishing operations at sea reflects the challenges faced by fishers during the pandemic.
    - Difficulties in acquiring workers, particularly migrants, for commercial fishery and processing plants have compounded operational issues.
    - Challenges in accessing fishing ports and cold storage facilities have hampered the post-harvest aspects of the fishing industry.
    - A decline in processing lines and an overall reduction in the quantity of capture fishery production highlight the economic strain on the sector.
  - Aquaculture:
    - Increased costs in aquaculture operations coupled with shortages of inputs have created financial hurdles for aquaculture producers.
  - Fishtrade:

        - Operational markets have experienced a decrease in both the number and duration of activities, impacting the overall fish trade.
        - A reduction in the number of fish traders further illustrates the disruptions faced by the fish trade sector.
    - Fisheries Management:
        - Members have maintained Monitoring, Control, and Surveillance (MCS) and other enforcement activities, highlighting resilience in fisheries management.
        - Difficulties in monitoring fishing vessels and activities at sea persist but efforts are ongoing to address these challenges.
- Collaboration is key in addressing COVID-19's impact on coastal communities and the seafood industry. Governments, development organizations, and donors should create relief packages; NGOs should coordinate and monitor local support; the private sector should prioritize worker safety; while researchers must focus on short-term and long-term solutions. Fisher and fish farmer communities need to strengthen information networks and explore government assistance for livelihood security, with a focus on promoting domestic and online sales for market access, ensuring a resilient response to future challenges.

Presentation by Mr. Todd Dubois - Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

- The conventional area of CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources) spans 36 million km2, making it comparable in size to either the North or South Atlantic Oceans and constituting approximately 10% of the world's total ocean area. The boundary of this extensive region is determined by the position of the Antarctic Convergence. CCAMLR holds responsibility for managing all living resources within the Convention Area, excluding whales and seals. Notably, the Ross Sea, within this jurisdiction, stands as the world's largest marine protected area (MPA), showcasing the commitment to conservation and sustainable management of the unique Antarctic marine environment.
- CCAMLR boasts a diverse group of participants, consisting of 27 Members, which includes 13 economies that are also part of the APEC (Asia-Pacific Economic Cooperation). Additionally, there are 10 Acceding Economies, expanding the collaborative network. Furthermore, there are 4 Cooperating non-contracting parties that contribute to the

cooperative efforts. The commission also welcomes over 20 Intergovernmental or non-governmental organization invited observers, fostering a broad and inclusive platform for collaboration and information exchange in the realm of Antarctic marine conservation.

- CCAMLR is instrumental in the management of a diverse array of species currently fished in Antarctica. These include the Patagonian Toothfish (Dissostichus eleginoides), Antarctic Toothfish (Dissostichus mawsoni), Mackerel Icefish (Champsocephalus gunnari), and Antarctic Krill (Euphausia superba).
- CCAMLR employs a set of primary compliance monitoring tools to ensure the effective implementation of conservation measures:
    - Vessel Monitoring System (VMS) (Conservation Measure (CM) 10-04):
        - Utilizes reports on the location of vessels operating in the Convention Area, enabling real-time tracking and monitoring of fishing activities.
    - Inspections (CM 10-03 and CCAMLR System of Inspections - SOI):
        - Involves both port and at-sea inspections of vessels engaged in fishing within the Convention Area, conducted under CCAMLR's System of Inspections (SOI). This tool ensures on-site verification of compliance with established regulations.
    - Catch Documentation Scheme (CDS) (CM-10-05):
        - Employs an electronic system to meticulously track toothfish from landing through the entire trade cycle.
        - Serves the crucial purpose of distinguishing between legal and illegal harvesting, promoting transparency and accountability in the fishing industry.
- In addition to the primary compliance monitoring tools, CCAMLR leverages various supplementary data sources for enhanced oversight:
    - Vessel Catch Reporting (23 Series of CMs):
        - Involves detailed reports on fishing activity and catch data submitted by vessels operating within the Convention Area. This comprehensive data aids in assessing the impact of fishing operations.
    - Transhipment Reports (CM 10-09):
        - Encompasses advance notice and post-reporting mechanisms for transhipments taking place within the Convention Area. This provides transparency and regulatory control over vessel activities.

- Vessel Movement Reports (21 Series of CMs):
  - Requires vessels to provide notice upon entering or exiting management areas and Marine Protected Areas (MPAs). This monitoring tool enhances spatial awareness and control.
- Scientific Observer Reports (SISO):
  - Involves observations and reports generated by scientific observers deployed on vessels. These reports provide valuable insights into the fishing activities, contributing to scientific understanding and compliance verification.
- Open Source and/or Subscription Sources:
  - Utilizes information from open-source intelligence and subscription-based sources. These sources enhance data collection by incorporating publicly available or subscribed information for a more comprehensive monitoring approach.

- IUU (Illegal, Unreported, and Unregulated) fishing within CCAMLR encompasses a range of activities that violate established regulations and undermine the conservation goals of the Convention:
  - Fishing without a license
  - False or not reporting of catches
  - Fishing in a closed period/closed area
  - Fishing with prohibited gear
  - Transhipping with known IUU vessels
  - Failure to provide valid catch documents
  - Fishing activities undermining convention objectives
- The COVID-19 pandemic has significantly impacted fisheries management within CCAMLR. Inspections at sea have seen a reduction in frequency, with an accompanying increase in refusals for such inspections, likely due to health concerns. The introduction of "remote inspections" has been initiated to fulfill inspection requirements in port. The shift to remote working has affected the efficiency of fisheries management, and the reliance on virtual meetings has led to reduced effectiveness in Member compliance evaluation procedures. Placing fisheries observers on vessels has become more challenging, impacting the collection of observational data. Additionally, there has been a substantial

reduction in training activities for compliance officers, with a shift towards virtual training methods, presenting challenges in practical learning experiences.

- The lessons learned from the COVID-19 pandemic underscore the critical importance of integrated compliance monitoring tools and systems in fisheries management. The effectiveness of inspections is contingent on inspectors' ability to access vessels, emphasizing the need for streamlined processes. While virtual meetings and training served as valuable substitutes during the crisis, they proved not as effective as in-person interactions. The pandemic highlighted and amplified "blind spots" and gaps in Monitoring, Control, and Surveillance (MCS), emphasizing the necessity for robust and adaptable systems to address unforeseen challenges in the future.
- Continuing the lessons learned from COVID-19, it becomes evident that ingenuity and technology offer opportunities to explore innovative approaches in fisheries management. Proactive planning and approaches are essential to minimize the impacts of future pandemics or similar events. The nature of fisheries and products within CCAMLR provided a buffer against some of the challenges posed by the pandemic. Furthermore, partnerships continue to be crucial in combating Illegal, Unreported, and Unregulated (IUU) fishing, emphasizing their importance both in the context of the pandemic and beyond. These lessons stress the need for adaptability, foresight, and collaborative efforts to navigate uncertainties in the evolving landscape of fisheries management.

Session 2:

Moderator: Mr. Arif Hidayatullah – Ministry of Marine Affairs and Fisheries of Indonesia (MMAF)

Combatting IUU fishing during COVID-19: Lessons learned for the future

Presentation by Mr. Dominic Thomson – Environmental Justice Foundation

- The Environmental Justice Foundation has been working in Thailand since 2014, Indonesia since 2017, and Viet Nam since 2018 to advocate transparency principles in combating IUU

fishing and human rights abuses, including marine plastics, at the regional level. These factors contribute to crimes at sea.

- EJF has employed several approaches related to transparency to easily identify and monitor vessels, making the job of enforcement officers easier through a set of tools, instruments, and the implementation of international regulations.
- Some of EJF's roles include IUU investigations, high-level legislative advocacy, engaging in front-line enforcement actions with stakeholders for victim identification and labor inspection training, and providing recommendations on how these issues can be addressed. International cooperation is crucial because IUU fishing and human rights abuses are transboundary issues.
- In Indonesia and Thailand, the fisheries database is still limited and in the early stages of development, resulting in limited data on vessel licenses, vessel names, and other details. In the absence of a digitalized database, it becomes very easy for vessels to engage in illegal practices, making it difficult for authorities to define the legitimacy of vessels to fish in certain areas.
- While the Vessel Monitoring System has been developed, it is often confidential and not shared among different economies. Additionally, it only covers a small segment of the fishing fleet within the economies. Other problems include worker registration gaps, a lack of labor inspection at ports, and a lack of observers/coordinated at-sea patrols.
- Regarding COVID-19, it has significantly impacted transparency due to limitations in inspections, restrictions on workers' freedom of movement, vessel limitations for returning to their home ports, and challenges in international cooperation for facilitating vessel inspections at ports and at-sea patrols, such as in Thailand and Indonesia. These conditions make it easier for vessels to engage in IUU fishing, workers' crimes, and other crimes at sea.
- Commonalities occur either in Thailand or Indonesia when conditions like COVID-19 lead to recommendations to ensure the implementation of vessel inspections connecting fisheries and labor inspections simultaneously. Upgraded technology is needed to support the transparency mechanism of vessel monitoring in the absence of human observers. A global transparency coalition is necessary to improve the transparency mechanism within domestic fisheries management systems, globally harmonizing vessel identification, vessel

monitoring, crew conditions, and international agreements to ensure better fisheries implementation.

- Recommendations for regional cooperation include fostering action-led monitoring, information sharing, enforcement action to clamp down on IUU fishing, restricting market access, and investigating illegal operators and brokers. Adopting transparency mechanisms to inhibit IUU fishing and labor abuses is crucial. Ratifying key ILO Conventions, such as C188, C87, C98, etc., and establishing G2G agreements on tackling labor abuses is essential. Ratifying the PSMA and streamlining the use of the Global Information Exchange, regularizing and digitizing recruitment channels to make them more robust and simpler, and recognizing IUUF and HR abuses as transnational crimes at the ASEAN level are also recommended.

Combatting IUU fishing during COVID-19: Lessons learned for the future
Presentation by Mr. Eko Rudianto – RPOA, IUU Regional Secretariat

- The Regional Plan of Action to Promote Responsible Fishing Practices including Combating IUU Fishing (RPOA-IUU) was agreed upon on 4 May 2007, in Bali, Indonesia, by 11 ministers related to fisheries. The participating economies are Australia; Brunei Darussalam; Indonesia; Malaysia; Papua New Guinea; The Republic of the Philippines, Singapore, Thailand; Viet Nam; Cambodia; and Timor Leste. Each member has a role in the implementation, demonstrating their commitment to responsible fishing practices and the fight against Illegal, Unreported, and Unregulated (IUU) Fishing.
- COVID-19 poses new challenges to combating IUU fishing, hindering effective fisheries MCS. Challenges include: Foreign fishing vessels incursions due to decreased physical patrols; Increased IUU fishing in specific regions; Disruption of monitoring and surveillance due to the pandemic, leading to heightened IUU fishing; and Changes in RPOA-IUU contact points and limited data sharing on IUU fishing vessels.
- Efforts to curb IUU fishing during the COVID-19 pandemic involve discussions within bilateral and RPOA-IUU MCS sub-regional groups. There's a reinforced commitment to combat IUU fishing amid the pandemic, including concrete measures for monitoring and inspecting vessels. Administrative and criminal sanctions are imposed. A comprehensive strategy is adopted, encompassing effective enforcement, regional cooperation, diplomatic engagement, and multi-faceted activities like capacity building and education programs.

- To address IUU fishing during the COVID-19 pandemic, interventions include strengthening domestic policies and legal frameworks, enhancing Fisheries MCS, and capacity-building. This involves reviewing and improving legislation to align with international laws, reinforcing members' capabilities in fulfilling various responsibilities. Collaboration in sea patrolling and inspection is strengthened, along with domestic measures for interagency coordination and information exchange. Additionally, community-based IUU Reporting and Accident Reporting Systems are developed, accompanied by community sanctions for fisheries violations.
- The RPOA conducted a regional fishery policy review with support from the USAID SuFia TS, which will extend for five years. As part of this assistance, fishery experts conducted a regional policy assessment using focus group discussions and online questionnaires. The expected outcomes include a comprehensive review of the status of ratification and implementation of pertinent international, regional, and domestic instruments promoting sustainable fisheries in the Indo-Pacific region. The assessment also aims to identify technical support needs and opportunities to enhance the implementation of regional fishery policies and instruments.
- The ATSEA-2 Project, in collaboration with RPOA-IUU, facilitated the development of an information-sharing mechanism and the identification of MCS training needs among RPOA-IUU members. This support involved a preliminary survey and Key Informant Interviews (KIIs) to identify potential information subjects and assess members' willingness to share that information. Additionally, the project aided RPOA-IUU in categorizing MCS training needs components pertinent to the current regional situation. Key findings from the preliminary survey on information-sharing and MCS training needs were presented, and feedback from RPOA-IUU members was sought. Further, recommendations from ATS sub-regional group members were invited to propose specific action steps for enhancing information-sharing and MCS capacity building, ultimately benefiting the ATS sub-regional group in combating IUU fishing.
- Effective strategies for combating IUU fishing involve active member participation, with the secretariat taking a proactive role in encouraging involvement. Recognizing the disparity between regional and domestic levels, agreements at the regional level may not seamlessly translate into effective domestic measures. The significance of ensuring alignment between

NPOA-IUU and regional agreements cannot be overstated. Information sharing emerges as a key component in fostering successful cooperation, complemented by the added impact of bilateral collaboration. Developing a streamlined mechanism for punishing trans-organized fisheries and fisheries-related crimes is crucial. Moreover, securing resource support from international partners is essential to fortify the overall effectiveness of efforts against IUU fishing.

Case Study: processes New Zealand has employed to start redeploying compliance tools to detect any non-compliance or IUU fishing

Presentation by Mr. Andrew Wright – International Fisheries Primary Industries of New Zealand

- In New Zealand, the fisheries management structure comprises 20 Fishery Officer locations across the mainland and an additional office on the Chatham Islands. Steve Ham serves as the Director, overseeing six Regional Managers responsible for various parts of the economy. Not depicted on the map are two Team Managers, leading domestically focused teams that provide support in capability development, analytical assistance, and international training and advice.
- The economy hosts around 100 Fishery Officers, including part-time analysts, and approximately 200 Honorary Fisheries Officers (HFOs). HFOs, also known as warranted volunteer officers, play a crucial role in patrolling New Zealand's coastline to preserve recreational fisheries. They contribute significantly to the community service by conducting numerous inspections each year.
- The introduction of digital monitoring, starting with vessel position and catch reports, stands out as a highly effective tool in fisheries management. In contrast to the previous paper-based system, where forms were submitted weeks after a fishing trip, digital monitoring offers real-time data. This allows for early identification of potential offenses and timely intervention to prevent further harm to the fishery or ecosystem. When combined with other tools such as patrolling, on-board observers, inspections, and vessel cameras, it provides a robust verification system and facilitates data-rich analysis.
- Digital monitoring not only supports the investigation of detected offenses but also enables the monitoring of New Zealand vessels within the Exclusive Economic Zone (EEZ), on the high seas, or in any other EEZ where they are authorized to fish. Recent successful

prosecutions have been significantly aided by digital monitoring tools. Waka Haurapa, a visualization tool, integrates position and catch reporting in near real time, offering reporting functions. This tool allows authorities to track vessel locations and catch information without the delays associated with paper-based systems. Currently, with 881 registered fishing vessels and fishers without a vessel, over 31,500 position reports are received on an average day.

- New Zealand utilizes Waka Haurapa, a Geospatial Position and Electronic Reporting system for vessel/client position and catch monitoring. This powerful system effectively tracks and monitors all 892 registered commercial clients. It incorporates a robust area and event alerting system, enhancing the ability to detect and respond to relevant activities. Additionally, the system provides user-friendly tools for extracting and analyzing fishing events, contributing to comprehensive monitoring and analysis capabilities in fisheries management.
- In the context of the Western Central Pacific, High Seas Boarding and Inspection (HSBI) activities primarily target high seas pockets with a heightened risk of IUU (Illegal, Unreported, and Unregulated) fishing. The vast geographical expanse poses a challenge, given the large areas to cover, compounded by seasonal fluctuations in vessel activity. Notably, only a small subset of the WCPFC (Western Central Pacific Fisheries Commission) membership conducts HSBI, with larger fleet sizes generally not participating. Consequently, capacity building within the Pacific region emerges as a focal point to enhance the effectiveness of HSBI efforts and address IUU fishing concerns.
- In the realm of Pacific Fisheries Capability Development, comprehensive training programs focus on key areas crucial for effective fisheries management. These initiatives encompass High Seas Boarding and Inspection (HSBI), equipping individuals with the skills needed for thorough inspections in high seas areas, particularly addressing challenges related to Illegal, Unreported, and Unregulated (IUU) fishing. Additionally, training is provided in Evidence Collection and Chain of Custody procedures, ensuring proper techniques are employed for gathering evidence, maintaining its integrity, and facilitating its admissibility in legal proceedings. Catch Estimation and Log Sheet Analysis training enhance the capability to accurately estimate catches and analyze log sheets, contributing to robust fisheries data management. Moreover, individuals are trained in Offender Interview techniques, enabling

them to conduct interviews with offenders involved in fisheries violations and gather comprehensive information. These collective efforts aim to strengthen the overall capabilities of Pacific fisheries personnel, fostering a more resilient and sustainable approach to fisheries management.

- High Seas Boarding and Inspection (HSBI) activities extend to the Southern Ocean, particularly in the Ross Sea, Antarctica. Legally mandated under the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR), HSBI aims to verify compliance with the Conservation Measures (CMMs) enforced by CCAMLR. Of particular importance is monitoring adherence to the 'no take' regulations within the Ross Sea Marine Protected Area, recognized as the largest high seas Marine Protected Area (MPA) globally. These initiatives play a crucial role in safeguarding the unique ecosystem of the Southern Ocean and promoting responsible fisheries management in the region.

Day 2

Moderator: Prof. Dr. Chomariyah, S.H., M.H – Hang Tuah University

APEC Economies' Lesson Learned and Best Practices

Economy 1 – Australia

- Australia employs a diverse array of measures in its concerted effort to combat Illegal, Unreported, and Unregulated (IUU) fishing, engaging in bilateral and multilateral collaborations. A notable initiative in this endeavor is the Combating IUU Fishing and Promoting Sustainable Fisheries in South East Asia program, launched last year. This program encompasses various activities, including officer exchanges and a Monitoring, Controlling, and Surveillance Program.
- Australia has proactively developed legislation and fostered cooperation with other economies. The Australian Fisheries Management Authority collaborates closely with the Australian Border Force to patrol waters and work collectively with neighboring economies.
- The Combating IUU Fishing and Promoting Sustainable Fisheries in South East Asia program is a five-year initiative targeting ASEAN and RPOA IUU participating economies, primarily focusing on capacity-building programs. The program comprises four key components:

- Targeted Capacity Building Support: Offering demand-driven capacity building support tailored to eligible economies.
- Fisheries Officers Exchange: Facilitating knowledge-sharing through exchanges among fisheries officers.
- Innovation Fund: Providing a flexible fund for economies interested in submitting proposals relevant to program objectives.
- MCS Training Course: Strengthening Monitoring, Controlling, and Surveillance (MCS) capacity across officers from RPOA IUU economies.

At the multilateral level, Australia actively engages with the RPOA IUU, including collaboration with the AFRA and Demorseas sub-regional group. Through these initiatives, Australia underscores its commitment to combating IUU fishing and promoting sustainable fisheries practices both domestically and across the Southeast Asian region.

Economy 2 – Brunei Darussalam

- During the COVID-19 pandemic, Brunei Darussalam underwent a lockdown, a period during which they granted permission for fishermen to continue their activities, albeit with the approval of port officers. Notably, unlike many APEC economies, Brunei Darussalam faces the challenge of limited sea area and monitors a fleet of no more than six vessels. The situation was further complicated by the repatriation of foreign workers to their respective economies, resulting in a shortage of manpower crucial for vessel operations, given their reliance on foreign labor.
- To address these challenges, Brunei Darussalam is actively planning to implement an electronic monitoring system. This move aims to enhance the oversight of fishing activities and promote responsible practices in their constrained maritime domain. Additionally, Brunei Darussalam conducts joint patrols in collaboration with their Navy to inspect their oceanic areas. For thorough catch inspections, the economy collaborates with the Ministries of Fishery and Health. This coordinated effort ensures that catches are scrutinized comprehensively, aligning with health and safety standards.

In the context of the ongoing pandemic, Brunei Darussalam has implemented measures for individuals who test positive for COVID-19. These individuals are required to undergo safe isolation, reflecting the economy's commitment to managing public health risks while maintaining essential fishing activities under controlled and monitored conditions. As Brunei Darussalam navigates the complexities of the pandemic, the planned electronic monitoring system and collaborative inspection

initiatives underscore their dedication to ensuring the sustainability of their fisheries sector amidst challenging circumstances.

Economy 3 – Chile

- Chile's National Fisheries and Aquaculture Service (SERNAPESCA) has a comprehensive control system that covers the entire fishing value chain. It monitors fishing activity from catching to exporting and involves various government agencies in the inspection process. Last year, Chile disembarked over 2.67 million tons of fish.
- In terms of regulatory compliance, inspections are based on Risk Management criteria, Traceability System, and a Comprehensive Approach, utilizing different tools:
  - Catching: Logbook, VMS, DRI, Control in Fishing Zone.
  - Landing: Vessel's declaration, Certification of Landing and Weighing System, Control Conservation Measures.
  - Processing Plants: Declaration of Supply, Production, and Destination, Control Conservation Measures, and Production Control.
  - Transport: Accreditation of Legal Origin (AOL) and Road Control.
  - Commercialization: AOL and Certification of the legal origin of exported fishing products.
- To discourage IUU fishing, Chile uses the Weighing and Certification System, VMS, Cameras on Board, Electronic Log Book, and Traceability.
- The VMS has a transmission frequency that contains basic reports by fishery, and the type of fleet is sufficient to identify fishing sets, with purse seine every 8 minutes, and trawl and longline every 15 minutes. VMS information is public. Landing Certification has implemented innovation through the use of Artificial Intelligence (AI) for vessel identification.
- The Traceability System Conceptual Design is a virtual platform that integrates different actors supporting the sustainability and competitiveness of the sector by generating information on the sector's productive activity at each basis. With the system, users can carry out a series of procedures online, saving time and money. At SERNAPESCA, the decision-making process is facilitated in terms of inspection.
- During COVID-19, SERNAPESCA has implemented the following action plan: Identification of essential procedures, increasing online procedures from 55% to 90%; creation of procedures and resolutions for operation under legal contingency in different inspection

areas; increased efficiency and effectiveness due to a reduced budget and inspectors; improvement of risk profiles by creating an intelligence unit; prioritization of actions through the Control Plan; exchange of information with member economies through workshops and MoUs; innovation in the use of AI in landing certification.

Economy 4 – China

- A participant from China emphasized the severe impact of IUU fishing on marine resources. In addressing this issue and destructive fishing practices, the Chinese government has consistently prioritized the implementation of stringent measures. A comprehensive plan has been adopted to tackle IUU fishing, beginning with a focus on reinforcing rules and regulations for fisheries management. China enforces regulations to penalize illegal fishing activities, particularly those occurring in restricted seasons and areas. Over the years, ongoing efforts have been made to enhance regulations, including revisions and implementations in the fisheries law, such as those pertaining to fishery permits and licensing. These revisions have resulted in stricter penalties, reflecting the government's commitment to combatting IUU fishing.
- Recent measures include the establishment of a register system for high-sea vessels to prevent the transshipment of illegal catch, with mandatory reporting for all high-sea transshipment activities since January 2021. Additionally, China is gradually expanding its observer program to focus on transshipment activities in the high seas.

  Furthermore, China maintains a zero-tolerance approach to illegal fishery activities. The economy continues to strengthen domestic law enforcement and comprehensive management, pursuing severe offenses with strict penalties, including business operation suspensions. To ensure the legality of exported products, China has implemented a cash documentation system for larger fish like tuna and swordfish, as well as products from China's seasonal harvest. Exporting economies must certify the products from legal sources. As part of a proactive approach, China conducts training sessions for fishermen and fishery enterprises, contributing to a robust strategy against IUU fishing.

Economy 5 – Indonesia

- Indonesia's strategic location and having the second-longest coastline make it attractive for IUU fishing practices. Indonesia has a diverse range of species and habitats that require multiple fishing gears, involving many small-scale fishermen. In 2021, Indonesia experienced numerous cases of IUU fishing, involving 53 foreign vessels and 115 local vessels. The Indonesian government is committed to processing these cases, even during the peak season of COVID-19, resulting in 167 criminal sanctions, 36 administrative sanctions, and 10 other sanctions.
- The modus operandi of IUU fishing in Indonesia during COVID-19 involves using destructive fishing gears such as trawl, engaging in border hide-and-seek activities, spreading, and taking advantage of "lockdown" policies.
- Monitoring Control and Surveillance (MSC) activities in Indonesia are categorized into the following stages:
    - Before fishing, Fishing Vessel Inspection is conducted, checking administrative requirements. This process issues the Operation Standard Certificate for Fishing Vessel (Surat Laik Operasi or SLO). A Circular Letter from the Minister of Maritime Affairs and Fisheries regarding Transshipment was released as regulatory support related to fishing vessel inspection during COVID-19.
    - During onboard inspection, COVID-19 protocols are implemented. Officers wear masks, and IUU Fishing Vessel crews undergo temperature checks. Crew members who test positive for COVID-19 will be quarantined for 14 days. Investigation of IUU fishing practices involves online investigation and court proceedings to minimize interaction between suspected crews and investigators.
- Intelligence Data Support involves a comprehensive strategy to fortify intelligence capabilities: (1) By enhancing and refining capabilities through the integration of a surveillance system as the foundational support for intelligence data. (2) The identification of illegal fishing activities is achieved through the effective utilization of radar and coastal radar technologies. (3) Rapid response mechanisms to counteract IUU fishing activities are implemented through airborne surveillance and strategically deployed vessel patrols. (4) The deployment of geo-fencing acts as an alert system, contributing to the swift detection of illegal fishing activities.

Economy 6 – Malaysia

- A representative from the Department of Fisheries Malaysia, Yazeereen, highlighted that Malaysia is not exempt from the economic and food security impacts of the pandemic, affecting the entire fisheries and aquaculture supply chain. In 2022, the fisheries sub-sector, encompassing captured fisheries, aquaculture, and inland fisheries, experienced a decline of about 4.4% in domestic fish production compared to 2019. The primary challenges faced were the rising fish prices and the non-operation of vessels due to a shortage of crews. However, these challenges were successfully addressed post- COVID-19, contributing to the stabilization of domestic food security.
- Malaysia has implemented robust domestic laws to combat IUU (Illegal, Unreported, Unregulated) fishing, whether conducted by local or foreign vessels. According to their perspective, international cooperation plays a pivotal role in combating IUU fishing, and this commitment is explicitly outlined in Malaysia's fisheries act, regulations, and the strategic plan devised by the Department of Fisheries in Malaysia. Presently, they have established a MCS (Monitoring, Control, and Surveillance) system, demonstrating their determination to overcome IUU fishing in the post- COVID-19 period.

Economy 7 – Papua New Guinea

COVID-19 has led to a sharp increase in IUU fishing. Cooperation and sharing between regions are crucial to combat IUU. We must maintain communication to address IUU.

Economy 8 – Peru

- Peru has implemented numerous legal frameworks aimed at enhancing and improving fisheries management. Subsequently, the economy has endorsed the Agreement on Fisheries Subsidies of the World Trade Organization (WTO) and reaffirmed its commitment to curbing IUU fishing. This agreement outlines prohibitions in three scenarios: i. subsidies for illegal, unreported, and unregulated fishing; ii. subsidies for fishing overexploited stocks; iii. subsidies for fishing or fishing-related activities in unregulated areas of the high seas (2023).

- Peru maintains a Monitoring, Control, and Surveillance system similar to that of other economies. Despite the challenges posed by the COVID-19 pandemic, Peru continues to uphold domestic and international fisheries legislation and regulations. Direct inspections at ports and fishing processing plants persist, and the economy has successfully coordinated with fishermen through scheduled telephone communications to minimize crowding.
- Additionally, Peru has implemented the Satellite Vessel Monitoring System (SITRAPESCA), engaged in interinstitutional operations, adhered to international agreements and commitments, and drawn from both domestic and international experiences. The economy has facilitated remote training and workshops during the pandemic.
- In terms of inspection, Peru has an operational force of 345 supervisors overseeing domestic vessels. Health protocols have been implemented during the pandemic to ensure their protection. The Vessel Monitoring System (VMS) is conducted through the Satellite Monitoring System (SISESAT) and covers more than 1,700 fishing boats with domestic and international flags.
- The Automatic Identification System (AIS) is another tool employed by Peru to monitor and surveil foreign fleets operating in international waters near the Peruvian maritime domain. The AIS is operated by the Peruvian Navy.
- Furthermore, Peru has a traceability system called SITRAPESCA, utilized by inspectors throughout the production chain (extraction, unloading, transport, processing, and marketing). This system informs supervisors about fishing and aquaculture activities in real-time, aiming to achieve better traceability of hydrobiological resources and products.

Economy 9 – The Russian Federation

Russia utilizes an advanced Electronic Monitoring and Reporting System, which meticulously tracks vessel movements and daily catches in great detail. However, a notable challenge lies in accurately identifying the types of catches, considering that vessels operate across various regions. Vessels are not only monitored by patrols but also accompanied by scientific observers to oversee potential transshipment and detect any illegal activities. The insights gained from scientific observations significantly aid patrols in monitoring and addressing illegal activities. Amid the challenges brought about by the COVID-19 pandemic, discrepancies in regulations between domestic laws and North Pacific conventions, especially concerning certain species,

have been observed.

Economy 10 – Thailand

- Thailand has demonstrated a steadfast commitment to combatting Illegal, Unreported, and Unregulated (IUU) fishing through a comprehensive fisheries reform initiative spanning 2015 to 2019. This reform addressed six key areas: Legal Framework, Fisheries Resource and Fleet Management, Monitor, Control, and Surveillance (MCS), Traceability, Law Enforcement, and Cooperation. The primary objective was to establish sustainable fisheries practices and effectively combat IUU fishing, leading to Thailand's successful removal from the Fisheries yellow card.
- The Fisheries Act B.E. 2490 (1947) was replaced by the Royal Ordinance in Fisheries (2015), incorporating the National Plan of Action to Prevent, Deter, and Eliminate IUU Fishing (NPOA – IUU) No1 and No 2 and Fisheries Management Plan (FMP). This legislation provided directives for conservation and management reform, emphasizing effective MCS, a traceability system, and robust sanctions.
- To ensure sustainable fisheries resources and fleet management post-2015, Thailand implemented a five-step process related to vessel permit and registration. This included defining a new legal framework, controlling fishing vessel registration through moratoriums, surveys, and regulations, implementing a new operational system, enhancing collaboration, controlling fishing effort through licensing, and regulating fishing gear.
- Post-2015, Thailand established an MCS system to strengthen capabilities through electronic surveillance, port inspections, and at-sea/UAV inspections. Various tools and technologies were introduced, including VMS, ERS, EM, E-PIPO, Logbook, Transshipment Control, Onboard observers, pre-common risk assessment, FI, MISC, and the establishment and improvement of Standard Operational Procedures (SOP).
- Thailand pursued traceability through several steps, including accession to the Agreement on Port State Measures (PSMA), a linked Processing Statement System and Thai Flagged Catch Certification System, coordinated efforts across government departments, and enhanced cooperation with economies importing fish. Stringent law enforcement measures post-2015 included a clear legal basis for comprehensive fisheries management, MCS, and traceability-related measures, along with expedited legal processes and significant deterrent measures. The maximum fine was set at USD 1 million, accompanied by

administrative sanctions such as the confiscation of fish or fish products, prohibition of fishing activities, suspension or withdrawal of fishing licenses, and detention of fishing vessels.

- Thailand has maintained collaboration with internal agencies, third economies, Regional Fisheries Management Organizations (RFMOs), and international organizations. The control of domestic fishing vessels and carrier vessels involves three stages: before port out, while fishing/transshipment, and port in, with rigorous inspections ensuring compliance with regulations.
- For foreign vessels, procedures under Thailand's Port State Measures (PSM) involve checks before port entry, vessel inspections at the port, and offloading control, with stringent documentation and reporting requirements. During the COVID-19 pandemic, Thailand implemented guidelines for fishing vessel inspections, emphasizing social distancing, reducing field officers, maintaining inspection efficiency, and utilizing virtual means such as Video Conferencing (VDC) and LINE application for port inspections.

Economy 11 - Viet Nam

- Viet Nam has laws governing fisheries. The vessel legal framework focuses on VMS (Vessel Monitoring System), MCS (Monitoring, Control, and Surveillance), and has now updated regulations for imposing sanctions on IUU (Illegal, Unreported, Unregulated) practices. VMS has been installed on all vessels.
- In Viet Nam, there are a total of 80 fishing ports that have been designated as part of fisheries management through the Vessel Management System (VSME). The impact of the COVID-19 pandemic has resulted in the non-operation of many small fishing vessels.

Proposed Recommendation and Best Practice

Australia

- Strengthening regional cooperation in compliance.
- Pursuing bilateral and multilateral agreements, e.g., RPOA IUU.
- Embracing technology for monitoring IUU fishing, with a focus on a tool generating baseline data.
- Prioritizing capacity building for fisheries officers.

- Encouraging inter-agency collaboration.
- Active involvement in sub-regional working groups under the RPOA IUU platform.

Brunei Darussalam

- Sharing knowledge between economies and interagencies (RPOA IUU, SEAFDEC, APEC).
- Collaborating on MCS initiatives.
- Advancing technology and innovation for the local fishing community.
- Enhancing the capacity-building process.Leveraging local resources for sustainable practices.

Chile

- Advocating for increased budget allocation for implementing fisheries surveillance.

People's Republic of China

- Committing to maintaining and deepening communication and cooperation between economies.
- Sharing experiences and practices in combating IUU fishing.
- Prioritizing capacity building and exchanging views among fishery officers.

Indonesia

- Strengthening bilateral and regional cooperation to exchange expertise and experience.
- Focusing on technology adoption and capacity building for sea officers.
- Encouraging inter-agency cooperation against IUU fishing.
- Raising awareness about IUU fishing issues.
- Improving equity between economies (e.g., guidelines for international trans-shipment, transhipment regulation for small-scale fishery).

Malaysia

- Emphasizing inter-agency cooperation within steering committees.
- Promoting information-sharing mechanisms.

- Utilizing Artificial Intelligence to monitor the entire fishery supply chain.Committed to the conservation of natural resources.

Papua New Guinea

- Focusing on international cooperation for combating IUU fishing and intelligence coordinated patrols.
- Implementing regulatory measures, including penalties for those involved in IUU.
- Prioritizing capacity building.Overcoming challenges related to technology adoption in developing economies.

Peru

- Identifying specific capacity-building needs, tailored to each economy.
- Sharing information on the status of natural resources among economies.
- Facilitating robust discussions on understanding fishermen behavior.

The Russian Federation

- Prioritizing AI technology for catch estimation and fish species identification.
- Developing guidelines for technology use in fisherman monitoring and surveillance.
- Conducting investigations and inspections to identify IUU fishing.
- Implementing technology for monitoring and generating data for decision-makers.
- Promoting natural resources regulation and monitoring among economies.
- Establishing standards to meet RFMOs requirements.

Thailand

- Emphasizing cooperation and information sharing between economies and agencies.
- Implementing AI and monitoring systems to prevent and combat IUU fishing.

Viet Nam

- Developing guidelines for small-scale fishery.
- Implementing PSMA (Agreement on Port State Measures).
- Strengthening international cooperation for the small fisheries sector.

IV. Briefings on Discussions at the Workshop

In this session, participants were actively participating in the discussion.

Q&A / Discussion

Session 1

- A participant inquired about the allocation of resources, emphasizing the significant focus on the health sector during the COVID-19 pandemic. They sought insights into how the government addresses IUU fishing in local seas and high seas, considering the limited resources available.

  Simon mentioned that every economy's priority during an emergency is to allocate and divert resources to the impacted sectors. However, when emergencies occur, monitoring of illegal activities may decline, potentially leading to an increase in IUU fishing as opportunistic individuals exploit the situation. The crucial aspect to address is whether, once the situation returns to normal, we can effectively revert to previous monitoring levels and rectify the issues. Success can be declared if the return to normalcy is achieved; however, if the restoration proves challenging, it signals a problem that needs to be addressed.

- A participant posed a question on estimating IUU fishing landings across an area, referring to the mentioned figure of 6.6 metric tons / USD 23.3 billion. Simon mentioned that a detailed discussion requires more time, but essentially, this study utilized a combination of methods. It involved media analysis to ascertain the number of vessels and the volume of catches. Furthermore, questionnaires were disseminated to officers across the area to gather local knowledge, with a focus on identifying species linked to illegal fishing and estimating their value. The collected data formed the basis for constructing a model to obtain precise figures in the assessment process. The report is also accessible on the web, allowing people to access it.

- A participant raised a query regarding the status of the heat map post- COVID-19 pandemic and inquired about its potential application to other diseases, such as influenza.

  Agus mentioned that the heatmap was actually created as an ad hoc initiative in

response to a demand from the coast guard to identify areas with high COVID-19 cases. The usage of this heatmap ceases when COVID-19 is no longer declared a pandemic in certain areas. As for influenza, a similar heatmap can be adopted to map the spread of the disease if needed.

- A moderator emphasized a statement by the speaker that indicated a need for a policy encouraging young people to enter the fishery industry. However, the speaker also mentioned the suggestion to encourage individuals to leave the fishing industry for diversification purposes. A moderator sought clarification on this, expressing a perception of contradiction.

  Worawit clarified that economies face a problem with a lack of workers in the fishery sector during the pandemic, as migrant workers return to their corresponding economies. In response, there is a need for the government to encourage young people to enter the fisheries industry. Conversely, in many cases, natural fishery resources recover very quickly during the pandemic. However, if the situation returns to normal, there is concern about people engaging in overfishing, potentially leading to a critical supply shortage in the fisheries. In this case, it is essential to determine proper fishing capacities to prevent the fish stock from reaching critical levels.

- A moderator inquired about the speaker's opinions on the reluctance of economies to share sensitive Vessel Monitoring System (VMS) data and how these economies can be motivated to share such data.

  Todd mentioned that the challenges of sharing Vessel Monitoring System (VMS) data persist as a global issue. While some economies have chosen to share VMS data with non-governmental organizations (NGOs), the majority of governments maintain confidentiality by not sharing such data. A suggested approach is to initially share VMS data under a very stringent compliance regime, establishing strict criteria for how the data can be used. Additionally, emphasizing the temporary nature of data retention can be part of the strategy, indicating that the data will eventually need to be destroyed.

- A participant inquired about the potential implementation of AI in the fishery monitoring system.

  Todd mentioned that CCAMLR is open to exploring AI in the monitoring system. The challenge they currently experience is the difficulty in differentiating between icebergs and vessels, as they appear similar when seen from satellite radar detection. There is potential for AI/machine learning to address this issue. Additionally, AI can be employed to distinguish whether vessels are positioned too closely or if transshipment is occurring.

- A participant sought the speaker's perspective on extreme IUU fishing combat policies, such as Indonesia's past policy of sinking ships involved in IUU fishing. Worawit mentioned that the majority of small-scale fishers in the region, comprising over 60% of IUU cases, pose a monitoring challenge for many governments due to their sheer number and not all being recorded in the system. The speaker believes that providing incentives, loans, and insurance to these small-scale fishers can encourage their integration into the system, leading to more effective monitoring.

- A participant asked about bilateral violations as a common issue in IUU fishing, including transboundary species. This is particularly relevant as many economies share the same borders and species in neighboring waters.

  Simon does not believe that bilateral violations are derived from transboundary species being fished. Instead, he suggests that the issue arises from the difficulty in patrolling boundary areas, which are not necessarily the most efficiently surveilled regions due to resource constraints. Surveillance teams often spend less time patrolling in border areas, making it easier for violations to occur. Another challenging issue is the presence of domestic vessels fishing in local seas but actually owned by entities from elsewhere. In such cases, the beneficial ownership lies with a party offshore.

- A participant inquired about the specific measures and recommendations taken by UNODC regarding the COVID-19 global heatmap.

Agus mentioned that UNODC has received a positive response from the Forum of National Maritime Fusion Centers regarding the heatmap, as it helps identify potential issues and make decisions. As a mitigation tool, it aids in decision-making, especially when boarding vessels from provinces with a high number of COVID-19 cases. However, some economies lack detailed data on active cases. While it is possible to identify economies with high cases, providing specific details on the location or areas concentrated with high cases may be challenging in certain instances.

- A participant emphasized that the welfare of fish workers should be addressed with international instrument ILO188.

  Worawit mentioned that regarding the welfare of fish workers, there is a positive trend with likely improvements in welfare and safety. There is still room for further improvement, and it is anticipated that advancements will continue in the near future.

- A participant inquired about the catch documentation scheme and how to integrate it with the regional mechanism.

  To integrate with the regional context, there is a routine effort to reach out and cooperate with economies that trade toothfish, such as Singapore and Thailand. The speaker believes that the CCAMLR electronic system is highly useful, but the challenge lies in figuring out how to collaborate with a greater number of economies.

Session 2

- A participant inquired about the alternative solutions available for monitoring and combating IUU fishing if economies lack an observer or tracking data for vessels.

  Dominic highlights that the current affordability of technology enables government and fishing companies to readily access advanced monitoring tools. Installing CCTV cameras on fishing vessels emerges as a cost-effective and efficient means of surveillance. Moreover, port-side inspections provide a valuable opportunity for direct communication with workers, facilitating a better understanding of vessel operations and fishing activities. This dual approach, leveraging both technology and interpersonal communication during inspections, enhances overall monitoring capabilities in a cost-efficient manner.

- A participant was curious about how the RPOA Secretariat monitors the implementation of domestic action items for economies that have committed to the RPOA policy.

  Dita mentioned that members of the RPOA IUU meet annually in committee meetings, where they submit and report on the progress and implementation of regulations derived from their RPOA IUU commitment. However, she pointed out a potential bias in this reporting process, as members tend to share their best practices and policies. To address this, RPOA IUU is currently working on implementing a self-reporting and evaluation system. This system aims to assess the implementation of core elements of RPOA IUU, providing a more comprehensive and objective understanding of the effectiveness of their commitments.

- A participant was interested in understanding how New Zealand, as a member of three Regional Fisheries Management Organizations, supports the IUU fishing combat policy in these three RFMOs.

  Andrew highlighted that New Zealand is committed to ensuring that fisheries activities align with international conventions. The economy invests significantly in capacity building and deploys area surveillance inspector to support regular regional patrols. Annual meetings are conducted to collaborate with other members in formulating regulations and modern schemes aimed at combating IUU fishing. The focus is on ensuring member compliance with regulations and addressing any compliance issues that may arise. This proactive approach underscores New Zealand's dedication to promoting sustainable and lawful fisheries practices within the framework of international agreements.

- There was a question regarding the possibility of remote inspection and whether there is potential to replace physical inspection with remote inspection, along with an inquiry into the associated challenges.

  Andrew mentioned that currently, technology cannot replace human inspectors in the fisheries sector. The job of an observer is intricate and cannot be entirely replaced by

technology. Instead, technology is seen as a supportive tool that enhances what inspectors can do rather than serving as a complete replacement.

- A participant sought the speaker's perspective on cases of migrant workers who have been working on local vessels for a long time, lack identification, and do not belong to any economies. The participant wanted insights on how to combat IUU fishing while preserving human rights.

  Dominic emphasized the presence of migrant workers in Thailand's fisheries sector and the ongoing challenges in regulating and legally integrating them into the system. He stressed the importance of a victim-centered approach by the government, recognizing migrant workers as a vulnerable group and prioritizing the establishment of trust. To foster this trust, Dominic recommended that officials avoid wearing official or military uniforms when engaging with these vulnerable workers, creating an environment that encourages feelings of safety and confidence in their interactions with government representatives. This approach aims to facilitate open communication and cooperation, ultimately leading to the lawful inclusion of migrant workers in the fisheries sector.

- A participant inquired about the most effective method of information sharing between economies or organizations necessary for combating IUU fishing.

  Dita clarified that due to the nature of the RPOA IUU being a non-binding regional initiative and a voluntary organization, limitations on data sharing are unavoidable. The organization is working collaboratively with international partners to carefully identify and share data that aligns with the confidentiality constraints inherent in its structure. The recommendation is to prioritize sharing less sensitive, low-hanging fruit data, particularly in the context of international instruments and actionable plans for their implementation across economies.

- There was a query about why a regional agreement might not be translated effectively into practical domestic-level policy, and the speaker was asked to provide reasons for this occurrence.

Dita mentioned that the gap in institutional capacities and infrastructure is a key reason why international agreements may not always be effectively translated into domestic policy. The varying capacities and infrastructure among economies contribute to difficulties in implementing and adopting international regulations at the domestic level. For instance, while some economies recognize the significance of ILO regulations in the fisheries sector, the presence of layers of complexity and barriers hinders the smooth translation of these regulations into effective domestic policies within their respective jurisdictions.

- A participant wanted information on the type of capacity building required for officers at ports or MCS ports to mitigate IUU fishing, specifically if there were any particular aspects that needed emphasis.

  Dominic highlighted the necessity for capacity building among port and MCS inspectors, emphasizing a victim-centered approach to build trust with vessel workers, particularly those classified as vulnerable. This training is essential for fostering positive interactions and understanding the unique challenges faced by vulnerable individuals. Additionally, Dominic emphasized the need to incentivize inspectors to proactively identify and report cases. The absence of recorded cases should raise suspicions, underscoring the importance of vigilance in addressing potential issues within the fisheries sector.

- A participant expressed interest in understanding the details of the Haka Haraupa system and how the system could capture data.

  Waka Haraupa was started a few years ago and currently every fisherman reporting their catches on a daily basis into the system. However, the key challenges associated with this technology include its high cost, posing a financial burden, especially when the value of the catches may not offset the monitoring technology's expenses. Additionally, there is a need for validation by human inspectors, underscoring the importance of combining technology with human expertise for effective and reliable fisheries monitoring.

V. Summary of the Workshop

- IUU fishing, or Illegal, Unreported, and Unregulated fishing, encompasses various activities that violate established regulations and undermine the objectives of the Convention. These activities include:
    - Fishing without a license.
    - False or non-reporting of catches.
    - Fishing in a closed period or closed area.
    - Fishing with prohibited gear.
    - Transhipping with known IUU vessels
    - Failure to provide valid catch documents.
    - Any fishing activities that undermine the objectives of the Convention
- IUU fishing involves both opportunistic and calculated actions, with fishers taking risks for economic gain, especially in the larger-scale sector. This risky behavior stems from balancing the likelihood of income against the perceived risk of penalties or capture, which is relatively low due to limited maritime boundaries enforcement.
- Small-scale fisheries (SSF) engage in IUU fishing partly out of economic necessity, driven by poverty and a need for basic income. Traditional norms are sometimes overlooked to meet family needs.
- Besides SFF violation, Bilateral violations are the most common form of IUU fishing, with over 25% up to 100% of such activity attributed to vessels flagged by other economies in around half of the economies in the region. The prevalence may be even higher when accounting for domestically flagged vessels with foreign-beneficial ownership.
- According to a FAO-CSIRO study on Illegal fishing in Asia, IUU fishing hotspots in Asia were identified at 33 locations, indicating widespread illegal, unreported, and unregulated fishing activities across the region. Almost every economy faces IUU issues involving foreign or foreign-beneficiary-owned vessels. The study estimated illegal-fishing landings in the 'APFIC area,' totaling 6.6 million tonnes (MT) with a value of USD 23.3 billion in 2019.
- To address these challenges, it is crucial to enhance alignment between regulatory systems and industry structures. Establishing a set of best practices for regulatory reform, spanning industry consultation to compliance procedures, is essential. Gaps in

jurisdiction must be addressed, and there should be improved integration of databases for vessel registration and fishing licensing, including linking immigration and crew lists to fishery inspections.

- Technological advancements, such as Vessel Monitoring Systems (VMS), sensors, AI, and on-board cameras, provide new tools for surveillance and identification of non-compliant vessels. GMCP (Global Maritime Crime Programme) also developed a COVID-19 Heat Map. This tool aids Maritime Operations Centres in identifying threats and assessing risks at sea. This Heat Map serves as a basis for tracking the progress and location of coronavirus cases over time. It can also be utilized to safeguard marine officers in similar cases in the near future.
- Lack of controls and transparency in Southeast Asian fisheries creates a vicious cycle, allowing illegal activities like IUU fishing and human rights abuses to thrive, while the absence of regional cooperation exacerbates the transboundary nature of the problem
- For instance, in Thailand, COVID-19-related concerns halted at-sea patrols, leaving workers stranded in ports or confined to dormitories, violating their freedom of movement. Vessel inspections were compromised due to physical distancing, and changes in vessel behavior exploited regional gaps.
- Similarly, in Indonesia, workers were stranded overseas, highlighting a lack of international cooperation to repatriate them. The absence of observers at-sea on foreign-fishing vessels and vessels moving to ports of convenience revealed gaps in international agreements.
- The issues stem from a disconnect between fisheries and labor inspections, inadequate regulations for comprehensive monitoring, a need for technology upgrades to enhance transparency, and potential IUU operators exploiting loopholes to evade detection
- Several tools can be utilized for monitoring, control, and prevention of IUU fishing in our oceans, including surface or aerial patrols, deploying observers/inspectors in port economies, vessels, fish wholesalers, and retail establishments, setting up cameras at booths, and employing electronic monitoring such as the Vessel Monitoring System (VMS).
- In New Zealand, the economy has utilized Waka Haurapa, a Geospatial Position and Electronic Reporting system that enables the monitoring of vessel/client positions and

catches, tracks all 892 registered commercial clients, features a powerful area and event alerting system, and provides simple tools for extracting and analyzing fishing events.

- For effective regional cooperation, it is also recommended to promote action-led monitoring, information sharing, and enforcement actions against IUU fishing and labor abuses. This includes adopting transparency mechanisms, ratifying key ILO Conventions.

VI. Pre-Test and Post-Test Evaluation

The participants were suggested by the committee to take the pre-test before the event began and to take another post-test upon the completion of the event. Pre- and post-tests, consisting of 10 matched true/false and multiple-choice questions, were designed to test similar areas of knowledge with each question set. Tests were used as comparative data to measure the level of knowledge of the participants before and after the workshop. The number of participants that managed to fulfill both the pre-test and post-test was commendable: 44 individuals. On average, the level of participants' understanding after the workshop is 87.7%. The level of knowledge from all responding participants increased by 37%. The test results confirmed that all participants who fulfilled the post-test acquired a higher score compared to their score in the pre-test. The table below shows the percentage of participants with correct answers on the pre-test and post-test.

Result of Pre and Post-Test

Question	Pre-Test	Post-Test
	% Correct	% Correct
Q1	45.5%	81.8%
Q2	56.8%	84.1%
Q3	63.6%	86.4%
Q4	52.3%	79.5%
Q5	50.0%	90.9%
Q6	45.5%	95.5%
Q7	47.7%	97.7%
Q8	50.0%	81.8%

Q9	52.3%	88.6%
Q10	43.2%	90.9%
Average	**50.7%**	**87.7%**

VII. Recommendation

- Enhanced Regional Collaboration:
  - Encourage and strengthen collaboration between economies in the region to share best practices, intelligence, and strategies for combating IUU fishing.
  - Facilitate regional workshops and Memoranda of Understanding (MoUs) to promote information exchange and coordinated actions.
- Technology Integration:
  - Emphasize the integration of advanced technologies, such as Artificial Intelligence (AI), into monitoring and certification systems to enhance efficiency and accuracy.
  - Promote the use of innovative tools like geo-fencing, cameras on board, and Electronic Log Books for improved traceability.
- Risk-Based Inspection and Compliance:
  - Advocate for the adoption of risk management criteria in inspections to prioritize resources and interventions based on the likelihood of IUU fishing activities.
  - Continue using traceability systems to ensure legal and sustainable practices throughout the fishing value chain.
- Capacity Building and Training:
  - Strengthen capacity-building programs, especially in the use of advanced technologies and intelligence data support, for fisheries officers and relevant stakeholders.
  - Facilitate exchanges among fisheries officers to share knowledge and experiences in combating IUU fishing.
- Adaptation to Pandemic Challenges:
  - Learn from successful adaptations during the COVID-19 pandemic, such as increased online procedures and the use of AI in inspections.
  - Develop and share guidelines for maintaining effective MCS activities during emergencies or pandemics.

- Legal Framework Strengthening:
    - Advocate for the continuous improvement of legal frameworks to address emerging challenges and strengthen penalties for IUU fishing.
    - Emphasize the importance of international agreements, such as those under the World Trade Organization, in curbing IUU fishing subsidies.
- Public Access to Information:
    - Encourage transparency by making VMS information public, fostering public awareness, and engaging local communities in reporting and monitoring IUU activities.
    - Promote the use of technology to disseminate information about legal fishing practices and regulations.
- Observer Programs and High Seas Control:
    - Expand and strengthen observer programs to focus on high-sea transshipment activities, ensuring accurate reporting and preventing illegal catch.
    - Advocate for the continued improvement of regulations related to high-sea vessels, transshipment, and reporting.
- Continued Innovation and Training:
    - Support ongoing innovation in inspection processes, such as the use of AI in landing certification.
    - Conduct regular training sessions for fishermen and fishery enterprises to enhance awareness and compliance with regulations.

These recommendations aim to build on the strengths of each economy's approach to combat IUU fishing, fostering collaboration, technological advancements, legal frameworks, and adaptive strategies to address emerging challenges.