U.S.-ASEAN Conference on
Marine Environmental Issues

Final report including recommendations for the future

Contents

Executive Summary

On September 14-15, 2017, The Stimson Center in partnership with the International Union for the Conservation of Nature (IUCN) co-chaired a U.S. State Department funded U.S.-ASEAN Conference on Marine Environmental Issues. The two-day conference, which closely adhered to Chatham House Rules, was held in Bangkok, Thailand on September 14-15, 2017 at the Shangri-la Hotel. The conference brought together sixty experts from think tanks, academia, private industry, and governments across ASEAN member countries, as well as from the United States, United Kingdom, Japan, and Australia to engage on a wide variety of marine environmental issues facing Southeast Asia. US Ambassador to Thailand Mr. Glyn Davies and Thailand's Tourism Minister Mrs. Kobkarn Wattanavrangkul provided keynote addresses.

Building off the many inaugural commitments announced at Our Oceans Conference 2016, the U.S.-ASEAN Conference on Marine Environmental Issues provided the opportunity to explore policy strategies to meet the call of the Sustainable Development Goal (SDG) 14. The conference served as a model to showcase regional collaborative efforts, policies and technical work which can support SDG14 implementation and preparation for Our Oceans 2018 in Indonesia. An overarching goal of the conference was to provide attendees with the opportunity to build networks for future research and collaboration, as well as make recommendations for policymakers in ASEAN member states and at a multi-lateral level. Moreover, the conference reiterated and reassured ASEAN participants that U.S. stakeholders in the government, academia, and private industry continue to be engaged on these critical issues.

The conference brought together experts with extensive background on the following topics, each of which represented separate conference session: Illegal, Unreported, and Unregulated Fishing; Small Scale Fisheries; Marine Protected Areas; Natural Disaster Resilience; Ocean Pollution; the Blue Economy; Sustainability and Traceability of Fisheries and Fish Products; Port State Measures Agreement and Port Security; Marine and Coastal Resource Management; and Corals and Mangroves Protection and Restoration.

Participants were chosen based on their expertise and their ability to translate research into effective policy approaches. Additionally, eight participants were members of the Young Southeast Asian Leadership Initiative (YSEALI). All participants presented at or facilitated a conference panel based on their area of expertise.

Contents of this final report include a summary of major policy recommendations, conference agenda, participant list, summary of the content discussion, and major policy recommendations from each panel session, and conference photographs.

Recommendations

Listed in each theme below are the prioritized recommendations elicited from the ten topical sessions of the US-ASEAN Conference for Marine Environmental Issues held September 14-15, 2017 in Bangkok, Thailand. All conference attendees had an opportunity to vet and provide comment on these recommendations. All conference attendees also had an opportunity to prioritize recommendations, and after compiling individual results, the conference organizers have determined the following prioritizations per theme.

Theme 1: Illegal, Unreported, and Unregulated Fishing (IUU): ASEAN countries must cooperate and collaborate to combat IUU fishing both at the beginning and advanced stages.

1. ASEAN countries agree to support each other to combat IUU fishing and get the ASEAN Policy Committee to make combatting IUU fishing a priority. Use the ASEAN Ministers Meeting (AMM) to build common perception on the importance of an Ecosystem Approach Fisheries Management (EAFM) and its urgency to combat IUU fishing across the region.
2. Conduct meetings to find common priorities and common interests in the fisheries sector in order to build regional cooperation to combat IUU fishing.
3. Likeminded ASEAN countries will work together to hold two regional Senior Official Meetings (SOMs) :
    a. One with Interpol and UNODC to focus on the transnational crime element of IUU across the region.
    b. The second to focus on the UU (Unregulated and Unreported) aspects of IUU fishing with the goal of developing legal frameworks that support strong management regimes and a common ecosystem based approach to managing fisheries.
4. Build cooperation arrangements across ASEAN in the form of MOUs, Joint Communiques, and or Framework of Regional Convention focusing on surveillance, enforcement and prosecution of IUU fishing.
5. Agree to share data and technologies across the region to combat IUU fishing:
    a. Including transparency of beneficial owners;
    b. Vessel Monitoring Systems (VMS), and Automated Information Systems (AIS) data;
    c. Establish an ASEAN database exchange (on vessel identity, fishing licenses, and ownership);
    d. Hold joint enforcement training
6. Support passage and implementation of the Port State Measures Agreement.
    a. Pilot bilateral cooperation agreements to implement PSMA,
    b. Agree to implement market measures across the region, such as seafood traceability to help combat IUU fishing.

Theme 2: Small Scale Fisheries

1. Develop Catch Traceability and Documentation Systems that are relevant to Small Scale Fisheries

2. Facilitate improved market access for sustainable small scale fisheries both in domestic and international markets.

3. Design a common policy framework for management of small scale fisheries, both at the national and subnational levels

Theme 3: Natural Disaster Resilience

1. Mainstream disaster risk and resilience building into the development planning process by:
    a. ensuring effective engagement of citizens in develop planning process
    b. raising awareness of policymaker of development choices and associated risk e.g. through case studies on monetary valuation on ecosystem services restored.
    c. fostering more science- policy-practitioner dialogues
    d. promoting for accurate, reliable and increasingly targeted scientific data
    e. building on capacities of government institutions and private sectors to deal with future climate change risk.
2. Recognizing the potential cross-border drivers and impacts of disaster risks, promote cooperation among countries in monitoring and assessing disaster risks, and sharing risk information for better disaster risk management
3. Ensure co-operation and co-ordination across organizations in the public and private sectors in managing the financial impacts of disaster risks.

Theme 4: Traceability of Fisheries

1. Develop a system for ASEAN countries in line and harmonized with all certification standards including the US and EU and other certification schemes such as the Marine Stewardship Council (MSC), Free Tuna, etc
2. Create partnerships to encourage dialogues to share best practices and lessons learned between countries that have developed strong traceability and catch documentation schemes with countries that are relatively lesser developed
3. Utilize NOAA and relevant ASEAN Fisheries Agencies to promote the socialization of the Seafood Import Monitoring Program (SIMP) to industry and other key stakeholders

Theme 5: Ocean Pollution: Plastics

1. Introduce legislative measures in ASEAN countries to reduce the input of plastics into the marine environment (e.g. plastic bag bans, taxing plastic bags, bottle deposit schemes)
2. Increase responsibility sharing across stakeholders (producers, users, etc) in the plastics life cycle to take action to minimize plastic production and use, and to improve management systems ensuring plastic waste is adequately managed

3. Increase outreach and education about the scale and impact of plastics in the marine environment, particularly targeting the younger generation. Utilize celebrities and other influencers to reach different kinds of audiences.

Theme 6: Managing Marine Protected Areas

1. Use existing institutions like the ASEAN Center for Biodiversity's ASEAN Heritage Parks to create a code of conduct on how to effectively create and manage marine parks
2. Establish a code of conduct which includes the following tenants:
    a. Include fisheries management professionals during the creation process
    b. Create plans for enforcement, including national and joint ventures among countries
    c. Ensure effective management based on research, with the sustainable resources to management over a long period of time.
    d. Multi-use with an emphasis on no-take zones.
    e. Establish communication among countries, and with the local communities during process.
3. Promote joint research collaborations through expert groups
    a. To identify and establish transboundary MPAs
    b. Conduct research that identifies the economic benefits of marine protected areas as it relates to balancing tourism and conservation.

Theme 7: Sustainable Fisheries Management

1. Develop an ASEAN common fisheries policy and create a regional scientific community that works with SEAFDEC.
2. Standardize the stock assessments regionally, with an emphasis on multi-species and ecosystem approach.
3. Support fishers' direct access to the market and incentivize the private sector to participate in the sustainable management of fisheries

Theme 8: Coastal Resource Management

1. Adopt integrated coastal zone management practices into Coastal Resource Management (CRM) practices by taking into account the larger development plans of the area. To support integration, inter-disciplinary research is needed.

2. Strengthen Information, Education and Communication (IEC) so that people will understand what CRM is. Among others IEC can use of actual experiential learnings, use of games, field works, and utilization of citizen science.

3. Implement a a conservation project inclusive of ASEAN countries and China to prevent further degradation of the marine resources in the South China Sea,

Theme 9: Coral and Mangroves Protection

1. Provide support to line agencies in ASEAN countries responsible for critical coastal habitats protection and restoration to adopt best practices based on good science.

2. Recognize ecological linkages between critical habitats (mangrove, coral, seagrass) and ensure that the continuum is well understood and adopted in MPA decision-making.

3. Increase research and collaboration with stakeholders from multiple sectors (including the private sector) to conduct valuation studies of mangrove ecosystems as well as creating a standardized way of quantifying ecosystem services and the value of restored areas.

Theme 10: Blue Economy

1. Engage through ASEAN and workshops to determine the set of industries that are important to ASEAN Blue Economy and collaborative projects at workshops

2. Identify bankable and sustainable projects at local level (e.g. in Indonesia, Philippines) that are replicable in other ASEAN countries. Involve blue economy experts from around the world to identify such projects. Create and disseminate case studies including performance metrics for outreach.

3. Develop a common definition, or common principles, of blue economy within the ASEAN context.

4. Create a statement from the US-ASEAN Conference on the importance of blue economy to ASEAN Ministers of Tourism e.g. regarding cruise tourism and its growth within the ASEAN region. Thailand's Minister Kobkarn could relay this statement.

Agenda

Day One: September 14

9:15-10:15AM Opening Plenary in Ballroom III

- U.S. Ambassador to the Kingdom of Thailand, Glyn T. Davies
- Steen Christensen, IUCN Mangroves for the Future
- Brian Eyler, The Stimson Center
- Maeve Nightingale, IUCN Mangroves for the Future
- Sally Yozell, The Stimson Center

10:15-10:30AM Coffee Break in the Ballroom Foyer

10:30-12:00PM Topical Plenary 1: Combatting Illegal, Unreported and Unregulated Fishing in Ballroom III

- Nguyen Thi Trang Nhung, Deputy Director of Science, Technology and International Cooperation Vietnamese Fisheries Administration
- Mas Achmad Santosa, Indonesian Ministry of Marine Affairs and Fisheries
- Dr. Chris Wilcox, CSIRO
- Sally Yozell, Moderator, Stimson Center

12:00-1:30PM Lunch in the Next2 Café

1:30-3:00PM Concurrent Session 1A: Small Scale Fisheries in Garden Gallery

- Vince Cinches, Greenpeace
- Jennifer Kemmerly, Moderator, Monterey Bay Aquarium
- Dr. Handoko Susanto, RARE
- Irfan Yulianto, Wildlife Conservation Society

1:30-3:00PM Concurrent Session 1B: Natural Disaster Resilience in Valley Room

- Claudius Gabinete, Moderator, UNFAO
- Sakanan Plathong, Prince of Songkla University
- Dr. Kateryna Wowk, Texas A&M University-Corpus Christi

3:00-3:30PM Coffee Break in the Tea Lounge

3:30-5:00PM Concurrent Session 2A: Traceability of Fisheries in Garden Gallery

- Dr. Hiroe Ishihara, University of Tokyo
- Geronimo Silvestre, Moderator, USAID Oceans and Fisheries Partnership
- Dr. Somboon Siriraksophon, SEAFDEC

3:30-5:00PM Concurrent Session 2B: Ocean Pollution: Plastics in Valley Room

- Clyde Blanco, Large Marine Vertebrate Research Institute
- Jeff Fielkow, Tetra Pak (Thailand) LTD
- Dr. Jenna Jambeck, University of Georgia
- Anna Oposa, Moderator, Save Philippines Seas
- Satoshi Tanaka, Institute for Global Environmental Strategies

6:00PM Assemble in Lobby for Dinner Cruise on Chao Phraya River

Day Two: September 15

9:00-10:15AM Topical Plenary 2: The Blue Economy in Ballroom III

- Keynote Address: Minister Kobkarn Suriyasat Wattanavrangkul, Ministry of Tourism and Sports
- Inthy Deuansavan, Green Discovery Laos
- Ryan Whisnant, PEMSEA
- Dr. Kateryna Wowk, Moderator Texas A&M University-Corpus Christi

10:15-10:30AM Coffee Break in the Ballroom Foyer

10:30-12:00PM Concurrent Session 3A: Managing Marine Protected Areas in Garden Gallery

- Dr. Porfirio Aliño, Marine Science Institute at the University of the Philippines
- James Borton, The Stimson Center
- Dr. Chu Manh Trinh, Cham Islands Marine Protected Area
- Cheryl Rita Kaur, Moderator, Maritime Institute of Malaysia
- Dr. Jamili Nais, Sabah Parks

10:30-12:00PM Concurrent Session 3B: Coastal Resource Management in Valley Room

- Kim Nong, Cambodian Ministry of Environment
- Roberto Oliva, Moderator, ASEAN Centre for Biodiversity
- Kyaw Thinn Latt, Wildlife Conservation Society
- Dr. Suvaluck Satumanatpan, Mahidol University
- Dr. Thon Thamrongnawasawat, Kasesart University
- Dr. Vu Thanh Ca, Vietnam Administration of Seas and Islands

12:00-1:30PM Lunch in the Next2 Café

1:30-3:00PM Concurrent Session 4A: Sustainable Fisheries Management in Garden Gallery

- Le Dinh Tinh, Moderator, Diplomatic Academy of Viet Nam
- Miko Budi Raharjo, TAKA
- Krishna Salin, Asian Institute of Technology
- Mya Than Tun, Wildlife Conservation Society

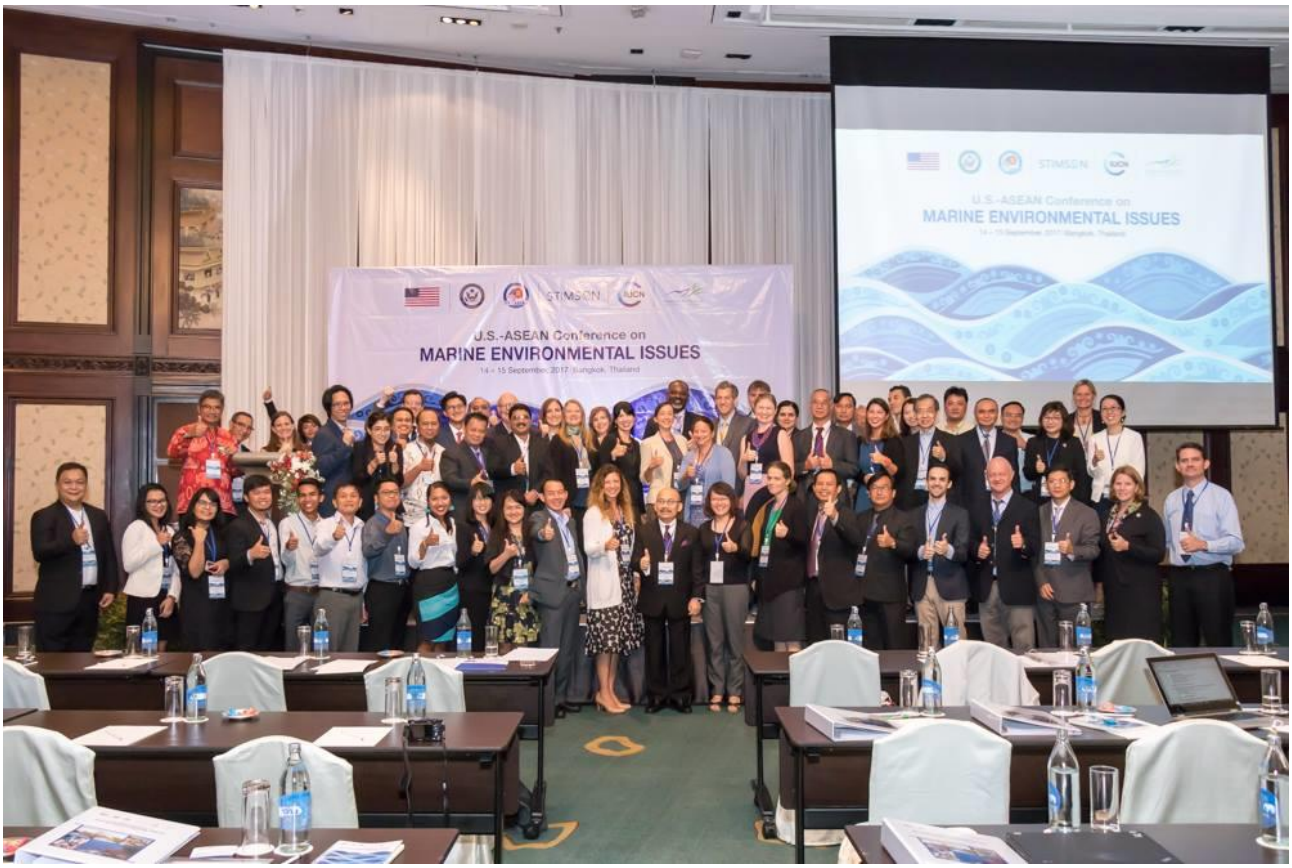
1:30-3:00PM Concurrent Session 4B: Corals and Mangroves Protection and Restoration in Valley Room

- Steen Christensen, Moderator, IUCN, Mangroves for the Future
- Dr. Edgardo Gomez, University of Philippines
- Hoang Xuan Ben, Vietnam Institute of Oceanography
- Dr. Erinn Muller, MOTE Marine Laboratory

3:00-3:30PM Coffee Break in the Tea Lounge

3:30-5:00PM Closing Plenary in Ballroom III

- Sally Yozell, Stimson Center
- Brian Eyler, Stimson Center
- Steen Christensen, IUCN, Mangroves for the Future
- Maeve Nightingale, IUCN, Mangroves for the Future



Group photo of conference participants © IUCN

Summary of Sessions

Topical Plenary 1: Combatting Illegal, Unreported, and Unregulated Fishing

Introduction

The growth in the fisheries sector across Southeast Asia has contributed to the region's booming economies, but it has also given rise to an increase in illegal, unreported, and unregulated (IUU) fishing activity. IUU fishing threatens the sustainability of fisheries and also has economic and security implications for the region. IUU fishing may also be associated with transnational crime, including drug, arms, and human trafficking. This plenary explored the broad implications of IUU fishing, the areas for improvement to address the issue in the ASEAN context, and the roles of governments, think tanks, academics, and non-governmental organizations play in combatting it.

Discussion

IUU fishing is broken down into three distinct sections. Illegal fishing occurs when fishing is done without license from a state, and is often carried out by foreign fishing vessels. Unregulated fishing occurs when fishing activities have not been reported, or have been misreported to authorities. Unregulated fishing occurs in areas of the ocean ungoverned by fisheries management measures, typically on the high seas. Much emphasis is placed on the problems associated with illegal fishing, while the issues associated with unreported and unregulated fishing receive lesser attention. Addressing all three types of fishing is critical, since each have a detrimental impact on fisheries management, while also being associated with transnational crime. Critical to solving these issues is effective surveillance, enforcement, and prosecution. Yet, even more elementary is the need to address resource depletion and fisheries management.

The counter-IUU fishing community should analyze if the legal frameworks in each country are sufficient to combat IUU fishing. If domestic laws in support of combatting IUU fishing do not exist, it is difficult for countries to comply with international regulations. The Port State Measures Agreement (PSMA) was highlighted as a means to stopping IUU fish from entering the market, but many nations in ASEAN haven't ratified and acceded to the treaty. Many find it difficult to comply with PSMA, whether it's because different agencies have a mandate to manage different ports, and interagency coordination can be difficult. For example, one ASEAN member state's commercial ports are overseen by the ministry of transportation, while fishing boats are overseen by the ministry of agriculture. Many identified the difficulties in designating a PSMA port since the fishing is seasonal and quite variable. Furthermore, since many countries within ASEAN do not have the capacity and resources to implement the measures associated with the treaty, many have not become party to the agreement.

Surveillance and enforcement agencies are charged with monitoring their national boundaries, but are often hampered in their operations since data are not shared quickly enough across different sources. Furthermore, the costs of real time surveillance and enforcement are high. ASEAN needs to utilize real time alert systems, repurpose existing data, and utilize ships radars to detect other ships. Additionally, the community must improve the data that they currently have by using statistical modeling to identify when vessels are stopping and seeing if they are transshipping, and participating in other suspicious activities. Furthermore, participants identified two areas of information exchange that needs to occur. First, sharing licensing and ownership of vessels, and second, then the illegality of vessel operations. Many argued that without the first type of data,

collecting evidence and information on the second type of data is moot because only the low-level perpetrators, rather than the network, are being prosecuted.

Complementary to data information management and harmonization, ASEAN nations should strengthen enforcement capacity of nations to help stop vessels entering their waters. Many vessels caught IUU fishing are also caught committing fraud, forgery, human trafficking and other transnational organized crimes. For some Southeast Asian nations, much fisheries crime is carried out by foreign entities. As a result, uncovering the ownership structure of a vessel can be difficult. This speaks to another serious barrier to combating IUU fishing – the lack of transparency in the supply chain and the beneficial ownership of vessels. Furthermore, many vessels operate on the peripheries of exclusive economic zones (EEZ) and on the high seas, which necessitates a response from nations in the region and from Regional Fisheries Management Organizations (RFMOs) to address the issue of coordination, data sharing, and enforcement.

IUU fishing is a cross-cutting issue, which requires different agencies and departments for an effective response. With this in mind, it may require a new council or center of ASEAN nations to focus on coordination, communication, and management of the resources. Borrowing from the natural disaster resilience and response arena would be effective since they have a common protocol and approach. Addressing IUU fishing requires implementing scalable and right-sized to capacity technologies, sharing data, unveiling the scientific impact of resource depletion, developing strong legal frameworks to addressing the issue, ratifying and implementing PSMA, and garnering domestic political will.

Recommendations

ASEAN countries must cooperate and collaborate to combat IUU fishing both at the beginning and advanced stages.

1. ASEAN countries agree to support each other to combat IUU fishing and get the ASEAN Policy Committee to make combatting IUU fishing a priority. Use the ASEAN Ministers Meeting (AMM) to build common perception on the importance of an Ecosystem Approach Fisheries Management (EAFM) and its urgency to combat IUU fishing across the region.

2. Conduct meetings to find common priorities and common interests in the fisheries sector in order to build regional cooperation to combat IUU fishing.

3. Likeminded ASEAN countries will work together to hold two regional Senior Official Meetings (SOMs):

    a. One with Interpol and UNODC to focus on the transnational crime element of IUU across the region.

    b. The second to focus on the UU (Unregulated and Unreported) aspects of IUU fishing with the goal of developing legal frameworks that support strong management regimes and a common ecosystem based approach to managing fisheries.

4. Build cooperation arrangements across ASEAN in the form of MOUs, Joint Communiques, and or Framework of Regional Convention focusing on surveillance, enforcement and prosecution of IUU fishing.

5. Agree to share data and technologies across the region to combat IUU fishing:

a. Including transparency of beneficial owners;

b. Vessel Monitoring Systems (VMS), and Automated Information Systems (AIS) data;

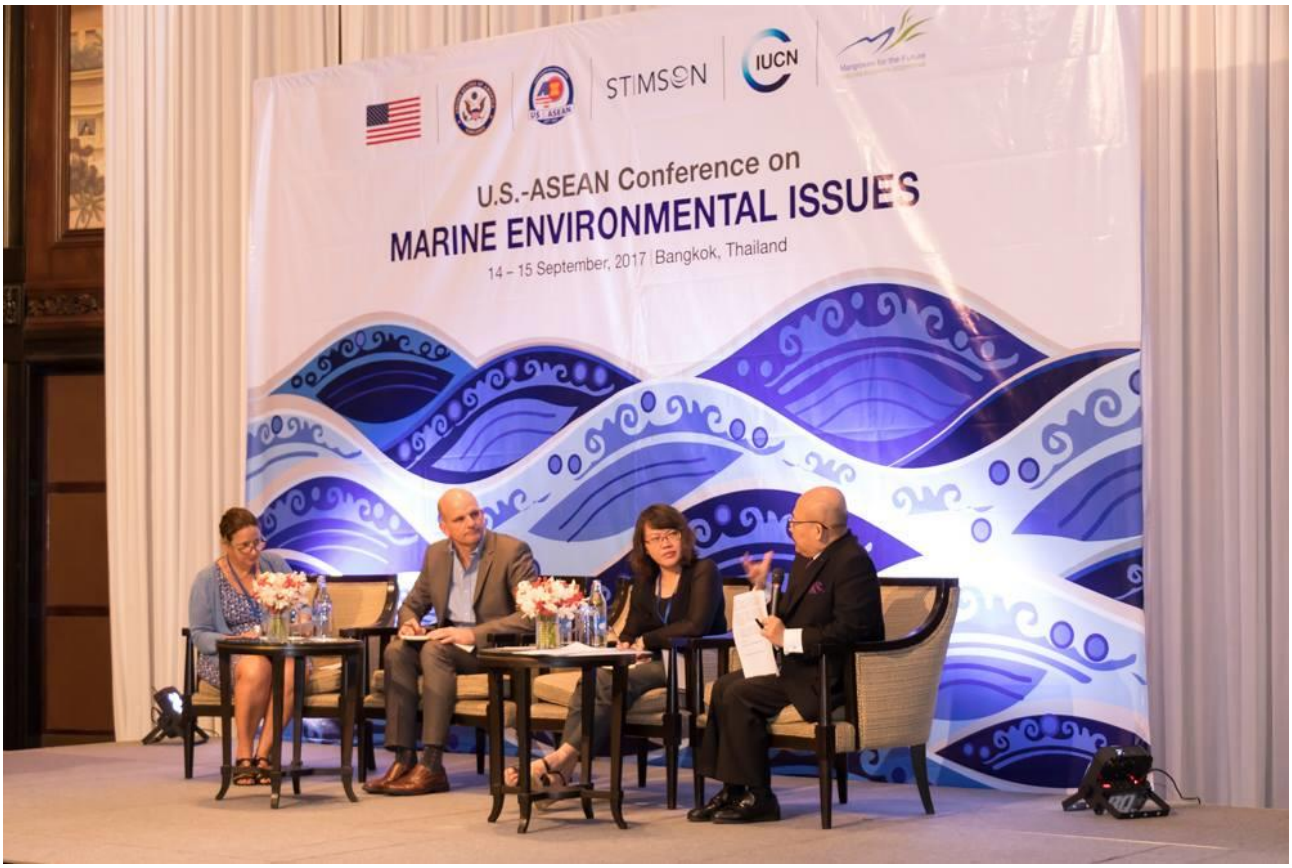
c. Establish an ASEAN database exchange (on vessel identity, fishing licenses, and ownership);

d. Hold joint enforcement training

6. Support passage and implementation of the Port State Measures Agreement.

a. Pilot bilateral cooperation agreements to implement PSMA,

b. Agree to implement market measures across the region, such as seafood traceability to help combat IUU fishing.



Left to right: Sally Yozell (Director of the Stimson Center's Environmental Security Program), Dr Chris Wilcox (Research scientist for CSIRO Marine and Atmospheric Research), Nguyen Thi Trang Nhung (Deputy Director of Fisheries Administration, SEAFDEC), and Mas Achmad Santosa (Member of Indonesia's Presidential Taskforce to Combat Illegal Fishing) speak at the topical plenary © IUCN

Concurrent Session 1A: Small-scale Fisheries

Introduction

The fishing sector is primarily divided into two components: large scale commercial and small-scale fishing. In fact, small-scale fishing accounts for 90% of employment in marine capture fishing, and each component captures half of the profits from the entire fishing sector. Despite the significant portion of the fishing sector that is operated by small-scale fishers, management regimes tend to overlook their scope and significance due to lack of monitoring capacity and technology to address the smaller, sometimes informal, sector. This session discussed effective approaches to managing small-scale fisheries, with perspectives from states like Myanmar, which has low technological capacity and an informal fishing sector.

Discussion

Ending certain forms of subsidies is one of the main targets of SDG 14: "By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation."

ASEAN member states provide subsidies to fishermen, to varying degrees of requirements and qualifications. Two examples were highlighted during discussion. First, in Malaysia, where fisheries subsidies contribute to pressure on small-scale fishermen. Second, in Indonesia, where small-scale fishermen receive government subsidies, but many are not linked with any obligation to perform well or sustainably. Due to fisheries subsidies, the true costs of overfishing are not factored and therefore contribute to further stock depletion. As such, there is a need to inform ASEAN member states that effective subsidies incentivize the adoption of more responsible fishing practices.

In open-access fisheries, operations are unregulated. This situation leads to the "tragedy of the commons," where common-access resources are exploited, often leading to depletion. Introducing regulations that disburse fishing rights, coupled with effective monitoring and enforcement, can help to reduce the extent of IUU fishing. RARE's model, "Fish Forever," represents a shift from open-access to effective fisheries management in Indonesia and Philippines. Further consideration needs to be put on small-scale fisheries within MPAs to avoid conflicts.

Small-scale fishing also needs to be considered as a "way of life" and not only an occupation. In many ASEAN countries, fishing is embedded within the culture and identity, highlighting the complexity of the topic. Notwithstanding that adequate fisheries management is an important aspect of fisheries sustainability, the livelihoods of fishermen need to be part of the equation. Small-scale fishermen should be supported in accessing domestic and international markets. One strategy could include bringing local community fishers into the fold of enforcing fisheries regulations, and in turn, rewarding those law-abiding fishers by receiving domestic and international market access. Such strategies would need to be supported by effective monitoring tools that are right-sized to the capacity of the community.

Aquaculture is also expected to play a significant role contributing to the global protein supply in the future. Mangrove areas across the ASEAN region are deforested to make room for this lucrative form of business. Moreover, non-target species, with often low market-value, such as anchovy used to be a source of protein for

coastal communities but are now widely used by the aquaculture industry as fish meal. In this regard, it can no longer be considered as a trash fish, but rather increasingly as a target species, and incorporated in policy planning and fisheries management.

Data collection remains a challenge in many ASEAN countries. In Indonesia, local governments have the mandate to manage fisheries, but are rarely obliged or have the budget to collect data from local fishers. Communities are usually willing to support data collection, but it is often very time-consuming. With such restrictions in mind, it is important to empower the local community to help assess fish stocks. Fishermen should be encouraged to weigh and measure what they catch, and report this information to proper fisheries management authorities.

Catch documentation can be helpful in combatting IUU fishing, as well as in proper fisheries management. Yet, such schemes often are not applicable to small-scale fisheries due to high costs. In some cases, middle-men are the key holders of fisheries information, since most fishers do not sell directly to the consumer. RARE is developing an Android based mobile application to support data collection that could be utilized by local fishermen. By providing these tools to local fishermen, and incentivizing their usage, fisheries management can be more effective.

Recommendations

1. Develop Catch Traceability and Documentation Systems that are relevant to Small-scale Fisheries.

2. Facilitate improved market access for sustainable small-scale fisheries both in domestic and international markets.

3. Design a common policy framework for management of small-scale fisheries, both at the national and subnational levels

Concurrent Session 1B: Natural Disaster Resilience

Introduction

Since the 2004 tsunami, which affected much of the region, ASEAN has rapidly worked towards a regional framework to predict, mitigate the effects of, and respond to natural disasters, most recently with the *One ASEAN, One Response* declaration at the Vientiane Summit in September 2016. This session highlighted successful cooperation in the natural disasters space, and provided space to reflect on the successes and failures of this topic.

Discussion

ASEAN is exposed to differential vulnerabilities, which contributes to why cooperation has been minimal among member states. The region is characterized by diverse environments, from mountains to beaches and islands. These sprawling coastlines are highly vulnerable to hydrological, meteorological, geophysical, and climatological issues, such as sea level rise, typhoons, and storm surges. The impacts of natural disasters are not only felt at the point of direct impact, but have spillover impacts across the region and into different industries and sectors. The threats of natural disasters necessitate action to mitigate and adapt to these impacts.

Participants noted several barriers to achieving natural disaster resilience. Disaster resilience is local, yet donors are not interested in providing resources to the 'soft' side of disaster risk management, such as citizen engagement. However, the need for participatory approaches in disaster risk prevention is imperative. The concept of citizen engagement is important in order to facilitate open dialogues with policy makers and private industry. For example, in Thailand, community buy-in has helped to adapt to disasters and communicate about mangrove rehabilitation to interested parties. Furthermore, the 2004 Indian Ocean Tsunami provided lessons to communities that mangroves are not just for fisheries, but also protection against coastal erosion and storm surges. Additionally, green infrastructure design projects that help protect against storm surges should be rooted in significant community support; and often these projects are more likely to win procurement.

Regarding what needs to be done to change communities' actions and share knowledge across countries, it is useful to share case studies on issues such as sediment management and the monetary value of ecosystem services. Such transfer of knowledge into local languages and shared with local decision makers is critical to successful resilience and risk reduction. Linked to this was the importance of increased collaboration and coordination with scientific and technical experts with local communities and politicians. One important factor in building resilience of coastal communities is raising the awareness of politicians. It is important to convey on-the-ground realities and data points to policy makers.

Furthermore, participants identified a need for climate change impact studies; an understanding of existing mechanisms to respond to threats, both sector specific and commodity specific responses; plans to invest and build more resilient infrastructure; and overall, to reduce and manage underlying risks. There is also a need for a mapping research exercise to be carried out in the region to identify at-risk areas and the infrastructure needs. With this better understanding of high-threat areas that is harmonized on a regional level, ASEAN countries may be better poised to investigate and address the underlying issues and threats to disaster risk reduction (DRR) and resilience.

Recommendations

1. Mainstream disaster risk and resilience building into the development planning process by:
    a. ensuring effective engagement of citizens in develop planning processes
    b. raising awareness of policymaker of development choices and associated risk e.g. through case studies on monetary valuation of ecosystem services restored.
    c. fostering more science- policy-practitioner dialogues
    d. promoting for accurate, reliable and increasingly targeted scientific data
    e. building on capacities of government institutions and private sectors to deal with future climate change risk.
2. Recognizing the potential cross-border drivers and impacts of disaster risks, promote cooperation among countries in monitoring and assessing disaster risks, and sharing risk information for better disaster risk management
3. Ensure cooperation and coordination across organizations in the public and private sectors in managing the financial impacts of disaster risks

Concurrent Session 2A: Fisheries Traceability

Introduction

ASEAN member states are significant exporters of fish products to the United States and the European Union, where traceability regulations are in development or already exist. As such, regional frameworks for transparency and traceability in the fishing industry would support the goal of a traceable and sustainable fisheries supply chain. Several states have worked with industry and technology stakeholders to increase the traceability of certain sub-national fisheries. This session built pathways through which ASEAN member states can work toward sharing effective mechanisms and strengthening regional cooperation on traceability of fisheries.

Discussion

The fishing industry is plagued by illegal, unreported, and unregulated fishing, which accounts for an estimated 20 to 50 percent of the global catch. IUU fishing contributes to the murkiness of this industry, but catch documentation is a tool that can help begin to address these problems. Catch documentation is the process of identifying “who, what, where, when, and how” as it relates to the catch of a fish. There are two sets of standards in certification schemes: the Fisheries Management Standard, which looks at the sustainability of fish stocks and its ecosystems; the Chain of Custody Standard, which creates traceability from producer to consumer.

Certification schemes are one way of combating IUU, however there are some challenges to this in the ASEAN context. It is difficult to have a "one size fits all" policy due to the diversity of the industry in the region, as well as the high costs of such schemes. Often, the supply chain of a single fish is very complex, and requiring all members to this supply chain to be certified can be costly. These realities emphasize the importance of aligning certification schemes with the on-the-ground capacities and willingness to adopt them.

Many participants expressed doubt in passing along the costs of certification schemes to consumers or retailers as a viable option. Many argued that consumers are often not willing to pay more just because something is sustainable, and that retailers are not willing to bear the cost. Often the costs are borne by the small-scale, artisanal fishermen. There was general agreement to develop a long-term, sustainable financial framework so that poor fishermen do not need to bear the costs of the certification scheme.

Related to certification schemes and transparency, it was recommended that ASEAN countries should make their VMS data publicly available. Indonesia has been an example in ASEAN by making their domestic fleet's VMS data available through Global Fishing Watch. It was highlighted that certification auditors will use any public information available to complete an audit, and that publicly accessible data could aid this process. Key to making data transparent is also making data integrated, verifiable, reliable, and protected. In terms of system and data integrity and privacy, fishermen do not wish to give up their favorite fishing grounds, so protecting this data is crucial. SEAFDEC and USAID have successful examples of cleaning up data to protect the fishermen, while also supporting the U.S. Government's Seafood Import Monitoring Program (SIMP). Related to SIMP, there was a discussion on the level of socialization of the program and the needs of participating countries.

On the issue of traceability versus sustainability, certification schemes are the only system currently available to verify the traceability of fisheries. For traceability and strong management to be in place there may be the need for third party certification. Furthermore, traceability may increase the price and value of fish – which may exacerbate the environmental impact from fishing, therefore undermining sustainability. Traceability was not created to deal with sustainability and enhance it, but with ecosystem management in mind.

Recommendations

1. Develop a system for ASEAN countries in line and harmonized with all certification standards including the US and EU and other certification schemes such as the Marine Stewardship Council (MSC), Free Tuna, and more.

2. Create partnerships to encourage dialogues to share best practices and lessons learned between countries that have developed strong traceability and catch documentation schemes with countries that are relatively lesser developed

3. Utilize NOAA and relevant ASEAN Fisheries Agencies to promote the socialization of the Seafood Import Monitoring Program (SIMP) to industry and other key stakeholders

Plenary session © IUCN

Concurrent Session 2B: Stemming Ocean Pollution: Plastics

Introduction

As globalization has progressed and countries' economies have grown and transitioned to plastic products, the amount of trash has outpaced the waste management capacity of many communities and coastal cities. The result is that too often litter leaks from landfills into the ocean, or is illegally dumped into the ocean or rivers, finding its way to the sea. Studies have estimated that there is 269 million metric tons of plastic debris, both microscopic and visible, floating in our seas. And the top five ocean plastic polluters are nations in Asia. While ocean pollution is on the rise, it remains under-addressed and requires updated domestic legal frameworks. Since the pollution does not remain within national boundaries once it enters the ocean, water management necessitates regional cooperation, in the form of regional frameworks, stronger enforcement and prosecution, and capacity-building to enhance management capabilities.

Discussion

Single use disposable plastics are a significant issue in many ASEAN countries, with improper disposal and management impacting the environment and economic activities. In the region, there have been a variety of legislative and policy measures introduced to reduce plastics usage, however challenges persist. For example, supermarkets have imposed a fee for use of plastic bags, but in some cases these have had little impact as the fee is negligible and cannot compete with the convenience for consumers to use plastic bags to carry their goods. Some local government authorities, in Viet Nam for example, have banned the use of plastic bags; however, there is a lack of resources and capacity to enforce such bans. Other initiatives such as "pay to dump" systems where people are charged a fee for the amount of non-recyclable waste deposited in landfills can have an impact, but can also result in greater amounts of waste being dumped illegally or even increase in the amount of non-compatible recycling as people attempt to reduce the amount they have to pay for waste disposal.

Approaches that provide incentives rather than deterrents should also be considered. For example, in South Australia a long standing container deposit scheme offers a small cash refund for depositing bottles and cans for recycling. This scheme has reduced the number of single use bottles found in coastal areas by two thirds. In

supermarkets, consumers could be offered a discount on their purchase to not using plastic bags to carry their goods instead of being charged an additional fee.

It is important that the responsibility for addressing the issue of marine plastic pollution is shared; from manufacturers to users and those that manage disposal. For example, in the Republic of South Africa certain types of plastic carrier and flat bags, the disposal of which is littering the environment, are subject to the payment of an Environmental Levy, earmarked to establish re-cycling facilities. This levy is payable by manufacturers and is an example of a regulatory measure engaging manufactures in sharing the responsibility to address management of plastic waste.

In many cases the general public is taking the lead to raise awareness of plastic waste issues. Global (e.g. #stopsucking) and local (e.g. Bye Bye Plastic Bags in Indonesia) campaigns are generating interest and educating the public about the scale and impact of plastics in the environment. Even so, there is a need to continue public awareness campaigns to educate the spectrum of stakeholders from the private sector to local communities. The engagement of well recognized personalities, such as local celebrities, in campaigns can ensure that messaging is communicated to a wide audience, particularly to the younger generation.

There is increasing attention to research on ocean plastic debris and microplastics. Recent publications have provided an overview of the scope and scale of the issue affecting our oceans and marine wildlife. Nonetheless, further research and data collection is needed to provide up to date information to inform science based management and policy decisions. This includes research of innovative materials and product design to reduce plastic inputs, research to improve solid waste management systems, and systematic monitoring systems to measure the impact of actions taken.

Along with a better understanding of the amount of plastic in the marine and coastal environment and how it is affecting marine life, we also need to better understand bioaccumulation of plastics and its potential negative health impacts across the food chain. The amount of micro-plastics in the ocean is significant and the presence of these in food sourced from the ocean could lead to exposure of plastic associated chemicals and pose risks to human health.

Despite the scale of the issue there is a lot of positive action to address ocean plastics; at local levels, within the private sector; and by national governments. There is a need to share information and successful approaches, particularly with policy makers. To influence producers, users, decision makers, those involved in the management of waste, and share best practices networks should be established to facilitate collaboration and partnerships to stem ocean plastics pollution.

Recommendations

1. Introduce legislative measures in ASEAN countries to reduce the input of plastics into the marine environment (e.g. plastic bag bans, taxing plastic bags, bottle deposit schemes)
2. Increase responsibility sharing across stakeholders (producers, users, etc) in the plastics life cycle to take action to minimize plastic production and use, and to improve management systems ensuring plastic waste is adequately managed
3. Increase outreach and education about the scale and impact of plastics in the marine environment, particularly targeting the younger generation. Utilize celebrities and other influencers to reach different kinds of audiences.

Topical Plenary 2: The Blue Economy: Aligning Biodiversity Protection and Economic Development

Introduction

ASEAN member states are home to 34% of the world's coral cover and contain a significant proportion of global marine biodiversity. The region depends heavily on its marine resources, both from the fishing sector and the ecotourism sector. As one of the fastest growing sectors of the economy in many countries, ecotourism depends on the protection of these natural resources. This plenary emphasized the importance of protecting biodiversity, as well as approaches to the sustainable development of both the fishing and ecotourism industries.

Discussion

There is no unified definition of blue economy In fact, different countries emphasize a variety of terms related to blue economy including "blue growth", "blue-green growth", and "ocean economy". However, there is consensus on the importance of ocean and coastal resources and ecosystems to national economies and global gross domestic product. Participants emphasized the importance of developing definitions of Blue Economy that balance both the use of ocean and coastal resources, and the sustainable use and conservation of those resources.

Participants also acknowledged that oceans and coastal ecosystems are not only valuable in terms of their usability, but also provision of ecosystem services such as food security, local livelihoods, cultural services, tourism and recreation, water filtration, carbon sequestration and storage, to name a few. Some highlighted APEC's Ocean and Fisheries Working Group's definition of blue economy, which is "an approach to advance sustainable management and conservation of ocean and coastal resources and ecosystems and sustainable development in order to foster economic growth". This embodies a common philosophy on Blue Economy in the sense that it incorporates both use of ocean and coastal resources, but also sustainability and conservation.

The role of technology was also highlighted in definitions of blue economy. Many spoke of how new and emerging advances in ocean sciences, mapping and sensing, and data collection have the potential to spur economic growth and improve the sustainable use and conservation of the ocean.

Minister Kobkarn Suriyasat Wattanavrangkul, the Thailand Minister of Tourism and Sports, highlighted how tourism can contribute to sustainability and the blue economy. She described an example of cruise tourism in the ASEAN region, which is seeing tremendous growth, but also some pushback across the region. Some countries are not keen on the construction of cruise ports, while other countries have progressed forward with cruise companies to expand this area of tourism. This highlights a rising concern of a lack of consensus on acceptable blue growth for the region.

Overall, participants identified the need to create a regionally agreed-upon definition of blue economy, and highlighted that without a common definition, ASEAN countries will find it difficult to identify areas for potential growth.

With the adoption of the UN Sustainable Development Goals (SDGs), countries have recognized the urgent need to accelerate the implementation of not only governance and management interventions, but also blue economy investment. The SDGs call for greater investment in a number of areas, including environmental infrastructure; restoration and rehabilitation of habitats; sustainable fisheries, aquaculture and tourism; climate change adaptation and mitigation; and disaster risk reduction and management, to name but a few. But previous experience indicates that relying entirely on public funding to achieve the objectives of oceans related sustainable development strategies and the SDGs is unlikely to meet the agreed targets, particularly among lesser developed countries.

In most cases, the problems and solutions are identifiable, but matching the capital investment is often more difficult due to the nature of ocean investments. Ocean investments can be much more diverse and complex in nature than the typical land-based infrastructure investment, and require special expertise to source, evaluate, develop and profitably exit an investment. Improved capacity is needed at the local level, including government, nongovernmental and community organizations, to identify potentially investible projects, and move them through the necessary steps towards successful investment, in partnership with the right experts. At the same time, assistance is needed to connect projects with interested investors.

Taking risk into account in these investments is also important, and there it is critical to find ways to reduce risks. Both local and national governments can play a role in reducing policy risks and creating an enabling environment by providing effective policies and regulatory regimes to establish stable governance and provide assurances of acceptable levels of risk to potential investors. Feedback from investors and the private sector indicates a need for streamlined policy frameworks that often stifle action under the weight of too many regulations and planning requirements. There has been a call for simplifying compliance processes without compromising environmental and social standards.

Furthermore, there is a need to identify bankable investment projects that contribute to the implementation of strategic action plans and sustainable regional economic development. Bankable investment projects are different than traditional grant- or donor-funded projects, in that they must generate income from a viable business model that can pay back the financing.

Conservation research, both scientific and economic, also plays a crucial role in providing a base of knowledge for identifying, managing and evaluating investments that can deliver both environmental and economic value. Topics such as ecosystem health and the economic valuation of the services they provide are important tools in developing effective investments.

Participants did note that current investments in blue economic growth have mostly been made at a local level, rather than a national one. These successful investment models should be replicated and shared with other ASEAN countries, helping to start the foundation for a more regional approach to investing in the blue economy.

Recommendations

1. Engage through ASEAN and workshops to determine the set of industries that are important to ASEAN Blue Economy and collaborative projects at workshops
2. Identify bankable and sustainable projects at local level (e.g. in Indonesia, Philippines) that are replicable in other ASEAN countries. Involve blue economy experts from around the world to identify such projects. Create and disseminate case studies including performance metrics for outreach.

3. Develop a common definition, or common principles, of blue economy within the ASEAN context.
4. Create a statement from the US-ASEAN Conference on the importance of blue economy to ASEAN Ministers of Tourism e.g. regarding cruise tourism and its growth within the ASEAN region. Thailand's Minister Kobkarn could relay this statement.

Onstage, left to right: Kateryna Wowk (Senior Associate for Strategic Planning and Policy, Harte Research Institute for Gulf of Mexico Studies Texas A&M University-Corpus Christi), Ryan Whisnant (Director of Strategic Initiatives for PEMSEA) and Kobkarn Suriyasat Wattanavrangkul (Thailand Minister of Tourism and Sport) © IUCN

Concurrent Session 3A: Managing Marine Protected Areas

Introduction

Just 2.3% of the region's maritime space is managed by marine protected areas (MPAs), despite the global commitment in the 2030 Agenda to protect 10% of the world's oceans by 2020. Building on the ASEAN Criteria for Marine Heritage Areas, the ASEAN Criteria for National Protected Areas, and several other precedents, this panel discusses ways ASEAN states can continue to reach for this goal, implement effective law enforcement surveillance technologies, and implement enforcement regulations and mandates for national MPAs. This session identified areas for regional collaboration in the establishment of MPAs on the high seas. It also explored how members can engage with private sector technology firms who are well-equipped to help countries protect and enforce MPAs across the region.

Discussion

Nations around the world are struggling to meet the Aichi biodiversity target as it relates to marine protected areas. In particular, there is discussion and debate on the size and connectivity requirements of MPAS, as well as the role of citizen science in helping to implement and integrate such solutions. Crucial to managing MPAs effectively is engaging local people about the benefits of such areas in order for it to be sustainably used in the long term.

Additionally, greater communication between countries in the region would be helpful since it would encourage harmonization of the types of MPAS, management, and assessment tools. The Coral Triangle Initiative is a good example of nations working with each other and should be replicated for marine protected areas. As it relates to transboundary MPAs, Myanmar and Thailand have worked together to establish such areas. Critical to this

success was track 1.5 discussions where scientists across the region could come together to provide policymakers with clear recommendations for parks.

Similar to the track 1.5 discussions, the region would benefit from a code of conduct for the marine environment and MPAs writ large. This code of conduct would aim to ensure that parks are not just paper ones, encourage cooperation between states, and set the groundwork for further environmental guidelines. The tenants of a code of conduct that the discussants highlighted were: ensure effective management based on research, with sustainable resources to manage over a long period of time; include fisheries management professionals during the creation process; create plans for enforcement, including national and joint ventures among countries; utilize multi-use, but with a special emphasis on no-takes; and establish communication among countries and with local communities during the process.

Recommendations

1. Use existing institutions like the ASEAN Center for Biodiversity's ASEAN Heritage Parks to create a code of conduct on how to effectively create and manage marine parks

2. Establish a code of conduct which includes the following tenants:

    a. Include fisheries management professionals during the creation process

    b. Create plans for enforcement, including national and joint ventures among countries

    c. Ensure effective management based on research, with the sustainable resources to management over a long period of time.

    d. Multi-use with an emphasis on no-take zones.

    e. Establish communication among countries, and with the local communities during process.

3. Promote joint research collaborations through expert groups

    a. To identify and establish transboundary MPAs

    b. Conduct research that identifies the economic benefits of marine protected areas as it relates to balancing tourism and conservation.

Concurrent Session 3B: Coastal Resource Management

Introduction

Coastal management requires a balance between the natural environment, quality of life, and economic prosperity. From eroding coastlines, estuary usage, and the impact of human development, ASEAN, in partnership with Southeast Asian Fisheries Development Center (SEAFDEC), has been implementing regional collaborative programs to clarify regional policies and priorities as well as to support national efforts to improve

habitat and fisheries management, including the management of fishing capacity. This session examined which steps can be taken to foster better management and development of coastal habitats and ecosystems through engagement at the national, local, and community level.

Discussion

Coastal issues are cross sectoral, cross boundaries, and cross jurisdictions; as such responses to these problems can be slow and contribute to weak governance. The main factors that contribute to this situation are: inadequate integration and coordination, limited capacity and leadership, limited communication and information dissemination, insufficient stakeholder participation, lack of awareness among locals, and lack of understanding on the link between integrated coastal management (ICM) and livelihoods. Participants highlighted the Kun Kaben Bay case study to discuss the benefits of long term political commitment and inter-agency cooperation for effective coastal resource management.

In general, participants agreed on the importance of developing a mechanism to manage and facilitate cooperation and coordination among ASEAN countries since marine issues are inherently transboundary. Regional organizations like SEAFDEC and COBSEA should be the foundation for collaboration on these issues. It was noted that some countries, like Viet Nam have integrated all coastal provinces and cities into an ICM plan, but that there is lack of clarity and agreement on the results.

Finally, it is crucial to maintain a balance between conservation and socio-economic development; as well as incorporate environmental impact assessment and strategic environmental assessments into government development plans.

Recommendations

1. Adopt integrated coastal zone management practices into Coastal Resource Management (CRM) practices by taking into account the larger development plans of the area. To support integration, inter-disciplinary research is needed.

2. Strengthen Information, Education and Communication (IEC) so that people will understand what CRM is. Among others IEC can use of actual experiential learnings, use of games, field works, and utilization of citizen science.

3. Implement a conservation project inclusive of ASEAN countries and China to prevent further degradation of the marine resources in the South China Sea.

Concurrent Session 4A: Sustainable Fisheries Management

Introduction

Across Southeast Asia, fishing communities are experiencing declining fish catches. In a region of the world where many countries are among the top producers of marine capture and aquaculture fisheries, as well as among the top consumers of fish as a source of animal protein, it is critical to ensure the sustainable

management and utilization of fisheries, as well as the protection of marine ecosystems that support these fisheries.

Discussion

Participants identified a need to educate fishermen about the management process and the varying levels of regulations. Community engagement was continuously emphasized as lacking across the region. Furthermore, participants identified a lack of coordination among ASEAN member countries to sustainable manage fish stocks that are inherently transboundary, and that without effective coordination and understanding, the region will be left with little fish to meet its demands.

Participants also identified lack of ownership of boats and gear by small-scale fishermen as a barrier to sustainable fisheries management. Since many fishermen have to take on the additional cost of leasing boats and gears, they are forced to fish more intensely in order to make reasonable profits. Providing opportunities for ownership of vessels and gears can help incentivize more sustainable fishing practices.

Sustainable fisheries management reached beyond wild caught fish, but also aquaculture. Participants highlighted that farming in the open ocean or mariculture is an important way to meet demand, and can be very profitable. However, there are high costs and risks associated with these operations, and it is necessary to incorporate private investment to get such operations running.

Recommendations

1. Develop an ASEAN common fisheries policy and create a regional scientific community that works with SEAFDEC.
2. Standardize the stock assessments regionally, with an emphasis on multi-species and ecosystem approach.

3. Support fishers' direct access to the market and incentivize the private sector to participate in the sustainable management of fisheries

Concurrent Session 4B: Coral and Mangroves Restoration and Protection

Introduction

Mangroves play a vital role in stabilizing shorelines, housing many key coastal species, reducing the impacts of coastal storms, flooding and sea level rise, while also filtering water, sediment and nutrients that flow through river deltas and impact coastal fisheries. Additionally, coral reefs play an important role in the health of ocean ecosystems, and a significant portion of which are located in the ASEAN region of the Coral Triangle. However, both in the ASEAN region and globally, mangroves and corals have often been degraded or destroyed, due to a myriad of reasons from pollution and destructive fishing practices to coastal development and increases in water temperature. This session explored the state of mangroves and corals in ASEAN member states, including the benefits of corals to biodiversity and mangroves for coastal communities' resilience, as well as the opportunities and obstacles to future mangrove and coral restoration and conservation.

Discussion

Mangroves are like biological seawalls that move or migrate naturally. Development plans need to ensure that urbanization gives space for critical habitats to migrate and adapt. In some countries, developers of infrastructure (e.g. ports) are asked to compensate and recreate the habitat somewhere else as a mitigation plan. There are cases where design engineers have taken into account the design of suitable shorelines as mitigation strategy (buffer zones). Environmental Social Impact Assessment is a crucial tool to ensure good land-use planning. It allows for a better understanding of potential conflicts for natural resources. This should be made mandatory by governments and not be a decision left to private sector.

In Thailand, most of the mangrove restoration has been linked to abandoned shrimp farms. There are good survival rates, but biodiversity and related ecosystem services are very limited. To be considered as successful, restoration should result in the establishment of a sizeable, diverse, functional, and self-sustaining mangrove forest that offers many benefits for nature and people. Large areas of mangrove are being recovered from encroachment in Thailand. ASEAN region should pursue a set of recommendation methods that avoids planting single-specie mangrove in these areas. Hydrology restoration should be favored over mass single-specie planting. Furthermore, the protection of critical habitat needs to integrate a ridge to reef approach where livelihoods are integrated to remove economic pressure from communities. Social drivers for mangrove restoration need to be addressed to maximize sustainability.

Mangrove and coral reef restoration are often discussed in the scientific sphere but there is not sufficient research related to seagrass restoration methods. Furthermore, seagrass and seaweed are often confused although they are very different ecosystems. Adopting preventive measures to protect the habitat seems to be widely recognized as the most suitable strategy. Thailand tried seagrass transplantation in the past but the success of this restoration methods largely depends on the area already having seagrass naturally and the limitation of environmental impacts particularly from sedimentation or sewage. Seagrass grows naturally if the habitat is protected. In North-Sulawesi, Indonesia, people depend largely on seagrass. A project for community-based seagrass protection has been implemented on this, and a Global Environment Fund (GEF) project also demonstrated the strong connection between seagrass beds and the sighting of dugongs.

In Southeast Asia under tropical conditions, ecosystems have the ability to restore themselves with soft support, and strong restoration methods like planting are not always necessary. Protecting the area, restoring natural conditions, and allowing mangrove forest ecosystems to grow naturally will yield better results in the long term. Effective management strategies, together with local communities should also be applied where possible. It is critical to empower local people in decision making processes, and focus on community inclusion to promote dialogue between government and local community stakeholders.

Finally, there is a need to build the business case for pristine ecosystems (ecosystems valuation studies) to encourage policy-makers to regulate land-use development. The Co2 sequestration capacity of ecosystems (blue carbon) should also be taken into account, particularly in the REDD agenda because the carbon stock in mangroves is often higher more than terrestrial forests.

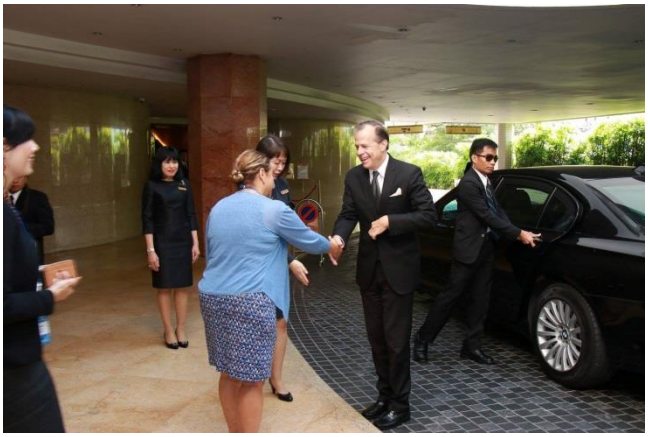
Recommendations

1. Provide support to line agencies in ASEAN countries responsible for critical coastal habitats protection and restoration to adopt best practices based on good science.

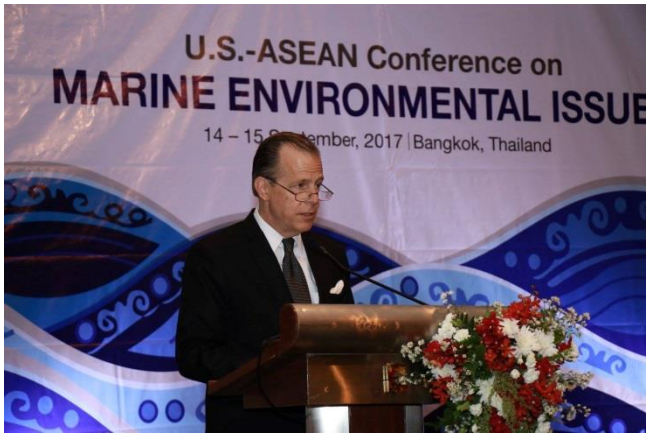
2. Recognize ecological linkages between critical habitats (mangrove, coral, seagrass) and ensure that the continuum is well understood and adopted in MPA decision-making.

3. Increase research and collaboration with stakeholders from multiple sectors (including the private sector) to conduct valuation studies of mangrove ecosystems as well as creating a standardized way of quantifying ecosystem services and the value of restored areas.

Photos (© IUCN)

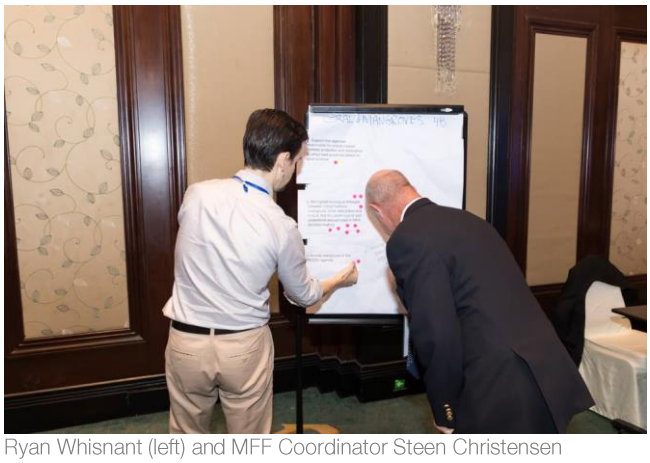


Glyn T. Davies, United States Ambassador to Thailand, arrives at the conference



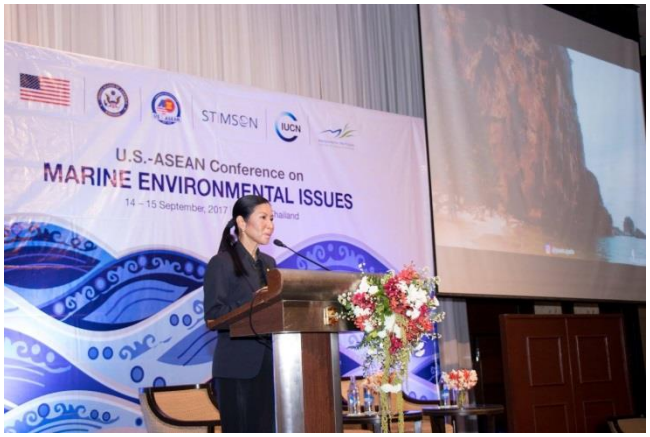
Ambassador Glyn T. Davies delivers his opening speech

Left to right: Kateryna Wowk, Ryan Whisnant and Kobkarn Suriyasat Wattanavrangkul at Topical Plenary 2: The Blue Economy

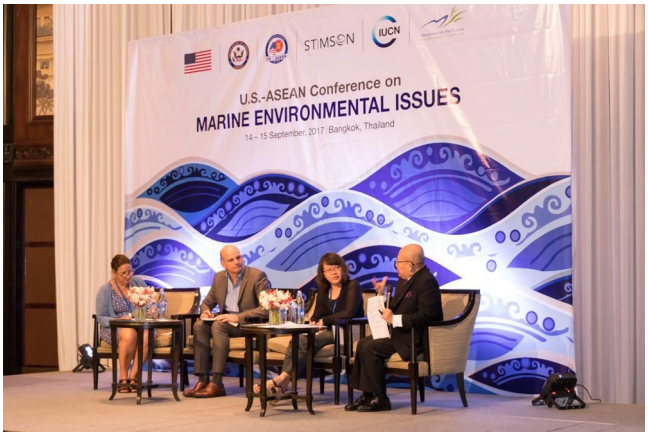


Ryan Whisnant (left) and MFF Coordinator Steen Christensen (right) at the closing plenary

Plenary session

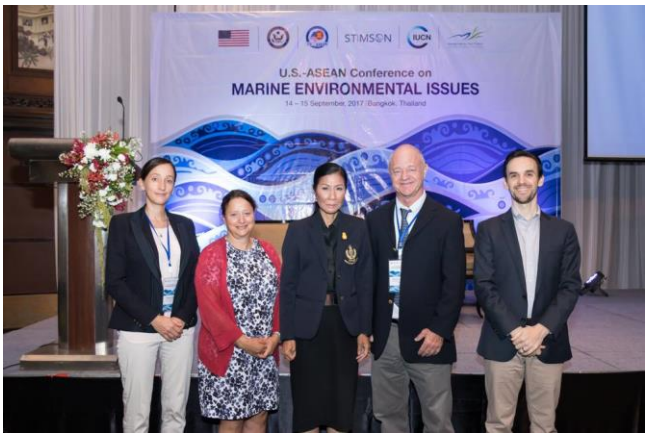


Kobkarn Suriyasat Wattanavrangkul, Thailand Minister of Tourism and Sport, delivering her opening address at Topical Plenary 2: The Blue Economy

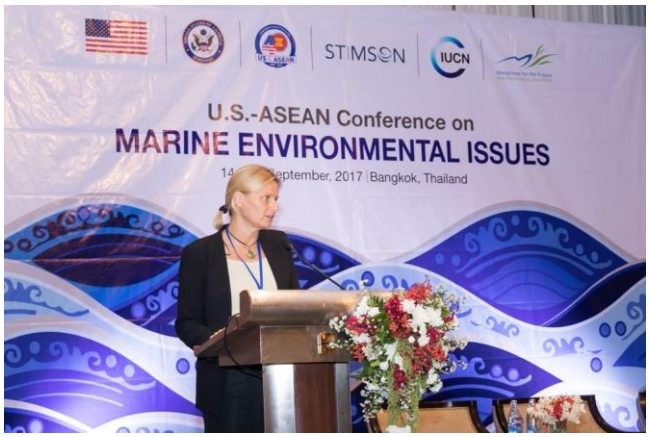


Left to right: Sally Yozell, Dr Chris Wilcox, Nguyen Thi Trang Nhung, and Mas Achmad Santosa speak at Topical Plenary 1: Combatting Illegal, Unreported and Unregulated fishing

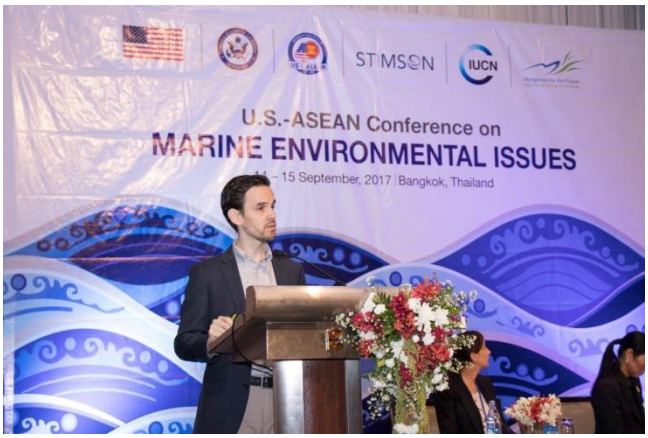
Roberto Oliva, Executive Director for the ASEAN Centre for Biodiversity, speaks at a plenary session



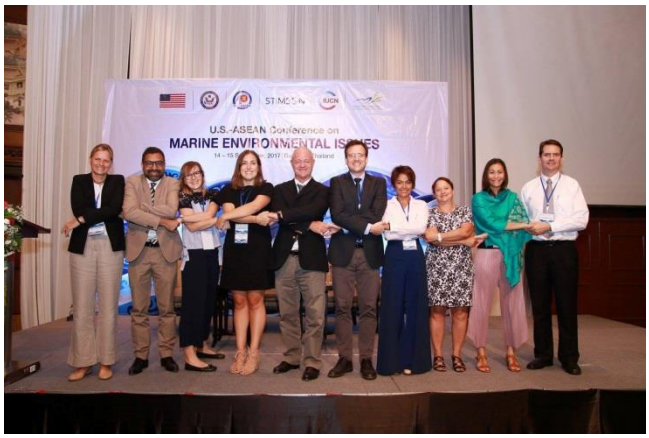
Left to right: Kateryna Wowk, Sally Yozell, Kobkarn Suriyasat Wattanavrangkul, Steen Christensen and Ryan Whisnant



Maeve Nightingale, MFF Capacity Development Manager, speaks at the opening plenary



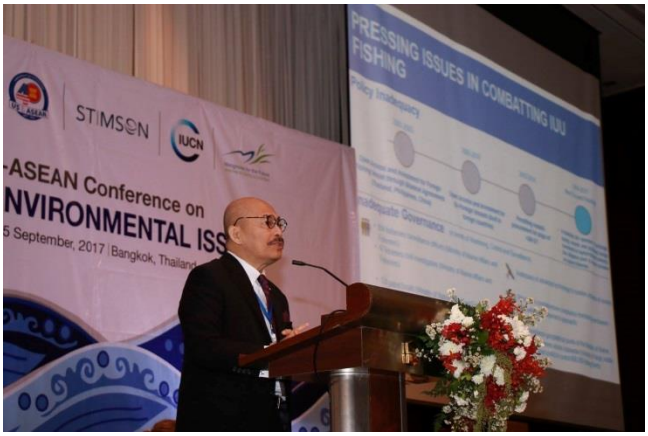
Ryan Whisnant speaks at Topical Plenary 2 on the Blue Economy



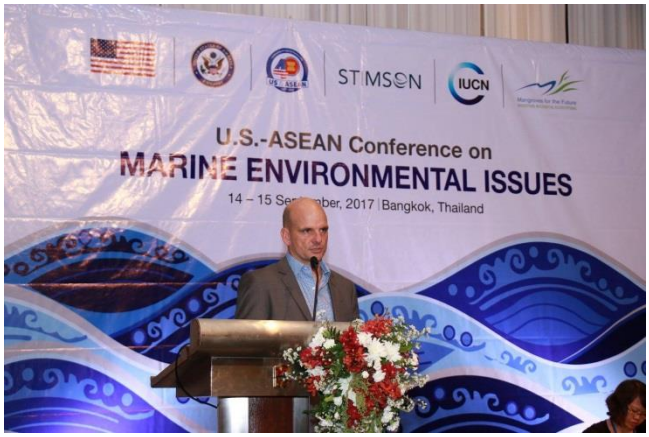
Delegation of IUCN and MFF participants

Geronimo T. Silvestre at plenary session

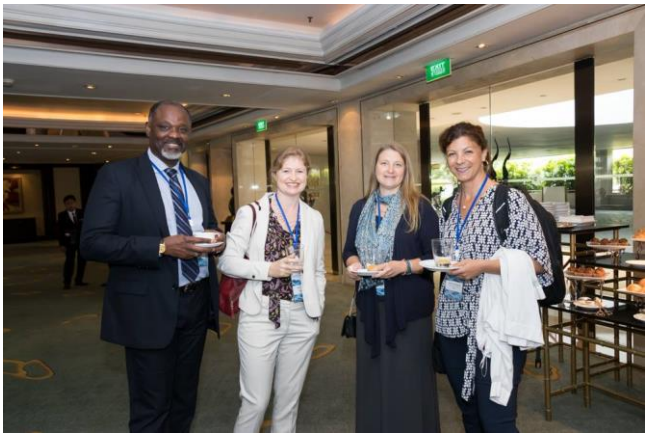
Topical plenary 1: Combatting Illegal, Unreported and Unregulated Fishing



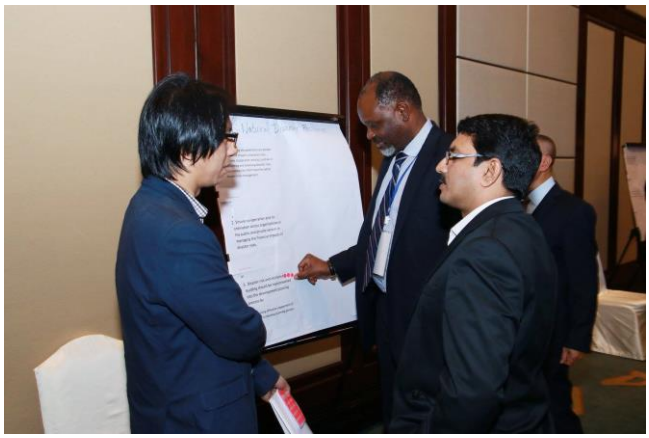
Mas Achmad Santosa speaks at Topical Plenary 1: Combatting Illegal, Unreported and Unregulated Fishing



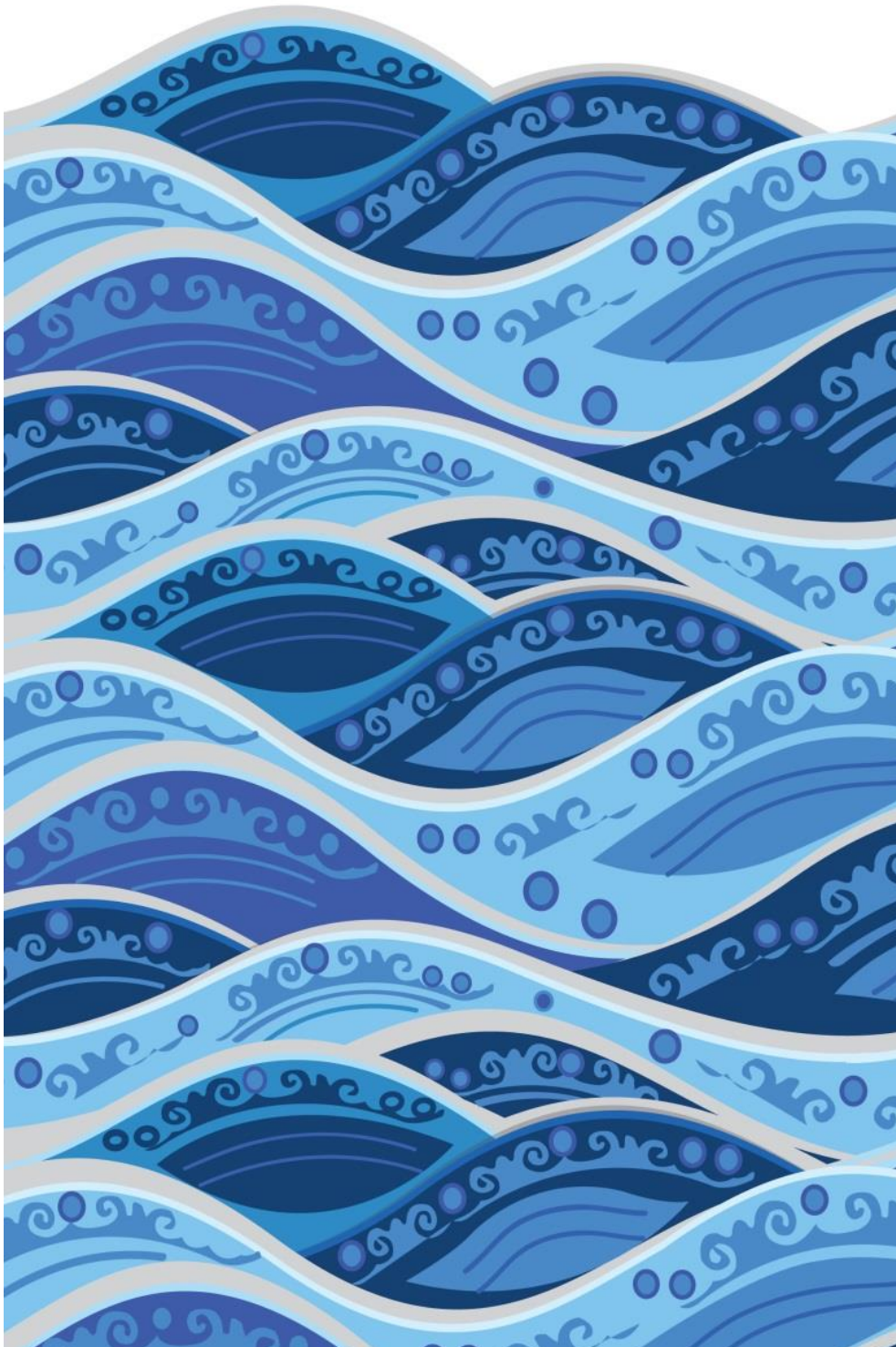
Dr Chris Wilcox speaks at Topical Plenary 1



Left to right: Representatives of the U.S. Department of State, the Stimson Center and the United States academic sector



Claudius Gabinete, United Nations Food and Agriculture Organization, Philippines (left) and Dr Krishna Salin, Asian Institute of Technology Aquaculture and Aquatic Resources Management Program (right) at the closing plenary



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