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Report of the

FOURTH GLOBAL FISHERIES ENFORCEMENT TRAINING WORKSHOP

San José, Costa Rica, 17–21 February 2014

Cover illustration by Ayrton Andrés Hernández Correa, age 12, of Uruguay, first place winner of the 11–15 age group in the 2013 International Children and Youth Drawing Competition "Protecting our fisheries – inheriting a healthier world." Full results of the contest are available at: www.fao.org/climatechange/youth/78616/en/

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PREPARATION OF THE DOCUMENT

This document contains the report of the Fourth Global Fisheries Enforcement Training Workshop, which was held in San José, Costa Rica, from 17 to 21 February 2014. The workshop was organized by the International Monitoring, Control and Surveillance Network with the collaboration of FAO, and hosted by the Costa Rican Ministry of Agriculture and Livestock. It was sponsored by: Australian Fisheries Management Authority; Fisheries and Oceans Canada; Central American Fisheries and Aquaculture Organization; Costa Rican Institute of Fisheries and Aquaculture; FAO; Marine Scotland; Ministry of Agriculture, Food and Environment, Spain; United Kingdom Department for Environment, Food and Rural Affairs; Conservation International; International Seafood Sustainability Foundation; and Pew Charitable Trusts.

The presentations delivered at the workshop are available at
http://www.imcsnet.org/4th-gfetw-presentations/

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ABSTRACT

The document contains the report of the Fourth Global Fisheries Enforcement Training Workshop, held in San José, Costa Rica, from 17 to 21 February 2014.
The workshop built on the success of its three predecessors, held in Kuala Lumpur, Malaysia, in 2005, in Trondheim, Norway, in 2008, and in Maputo, Mozambique, in 2011. These workshops promoted cooperation between enforcement authorities across national borders and facilitated the introduction of new monitoring technologies. Each workshop has raised awareness about the importance of effective enforcement of fisheries laws.

The workshop was successful in bringing together a global community of fisheries monitoring, control and surveillance (MCS) professionals to share information and experiences and to receive training on a broad array of MCS topics. With 138 MCS experts from more than 40 countries in attendance, discussions focused on pragmatic solutions for eliminating illegal, unreported and unregulated (IUU) fishing through examples and case studies. The conference was structured in sessions according to theme. Themes included: regional cooperation between coastal States and on the high seas; cost-effective MCS tools; tackling transnational crime through INTERPOL, UN Office on Drugs and Crime and other agencies; and promotion of the implementation of FAO measures such as the Voluntary Guidelines for Flag State Performance, the Port State Measures Agreement and the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels. Several other themes related to forms of cooperation between States and through international institutions, such as FAO, aimed at enhancing capacities to apply internationally agreed measures, especially by developing countries.

The workshop included the announcement and celebration of the prize-winners of the first-ever Stop IUU Fishing Award contest, which was launched in the margin of the Thirtieth Session of the FAO Committee on Fisheries and sponsored by the International Seafood Sustainability Foundation.

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ABBREVIATIONS AND ACRONYMS

AIS	Automatic Identification System
AFMA	Australian Fisheries Management Authority
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COFI	FAO Committee on Fisheries
CTI	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
DEFRA	United Kingdom Department for Environment, Food and Rural Affairs
DFO	Fisheries and Oceans Canada
DSFA	Deep Sea Fishing Authority (United Republic of Tanzania)
EC	European Commission
EEZ	exclusive economic zone
EJF	Environmental Justice Foundation
EM	electronic monitoring
EPO	East Pacific Ocean
FAD	fish aggregating device
FFA	Pacific Islands Forum Fisheries Agency
FOC	flag of convenience
GFETW	Global Fisheries Enforcement Training Workshop
GPS	Global Positioning System
IATTC	Inter-American Tropical Tuna Commission
IEZ	inshore exclusion zone
ICCAT	International Commission for the Conservation of Atlantic Tunas
IMO	International Maritime Organization
INCOPESCA	Costa Rican Institute of Fisheries and Aquaculture
IOC	Indian Ocean Commission
IOTC	Indian Ocean Tuna Commission
IPOA	international plan of action
IPOA-IUU	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
ISSF	International Seafood Sustainability Foundation
IUU	illegal, unreported and unregulated (fishing)
JMC	Joint Maritime Commission
MAGRAMA	Ministry of Agriculture, Food and Environment (Spain)
MCS	monitoring, control and surveillance
MDA	MacDonald, Dettwiler and Associates
MSY	maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NCB	national central bureaus
NEAFC	Northeast Atlantic Fisheries Commission

NEST	national environmental security task force
NGO	non-governmental organization
NOAA	United States National Oceanic and Atmospheric Administration
NZR	normally zero satellite reporting
OLDEPESCA	Latin American Organization of Fisheries Development
OLE	Office of Law Enforcement, NOAA
OSINT	open-source intelligence
OSPESCA	Central America Fisheries and Aquaculture Organization
PSMA	Port State Measures Agreement
RFMO	regional fisheries management organization
RFSC	Regional Fisheries Surveillance Center
RFSP	Regional Fisheries Surveillance Plan
RPOA	Regional Plan of Action (in Southeast Asia)
SERNAPESCA	National Fisheries and Aquaculture Service Chile
SICA	Central American Integration System
SWIO	Southwest Indian Ocean
TED	turtle excluder device
UAV	unmanned aerial vehicle
UMD	University of Maryland
UNCLOS	United Nations Convention on the Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
UNODC	United Nations Office on Drugs and Crime
UVI	Unique Vessel Identifier
VG-FSP	Voluntary Guidelines for Flag State Performance
VMS	vessel monitoring system
WCO	World Customs Organization
WCPFC	Western and Central Pacific Fisheries Commission
WWF	World Wildlife Fund

INTRODUCTION

1. This document is the official record of the Fourth Global Fisheries Enforcement Training Workshop (GFETW), which was held in San José, Costa Rica, from 17 to 21 February 2014. The Workshop was organized by the International Monitoring, Control and Surveillance (MCS) Network with the collaboration of FAO and hosted by the Costa Rican Ministry of Agriculture and Livestock. The 4th GFETW was sponsored by:

- Australian Fisheries Management Authority (AFMA);
- Fisheries and Oceans Canada (DFO);
- Central American Fisheries and Aquaculture Organization (OSPESCA);
- Costa Rican Ministry of Agriculture and Livestock;
- Costa Rican Institute of Fisheries and Aquaculture (INCOPESCA);
- FAO;
- Marine Scotland;
- Ministry of Agriculture, Food and Environment, Spain (MAGRAMA);
- United Kingdom Department for Environment, Food and Rural Affairs (DEFRA);
- Conservation International;
- International Seafood Sustainability Foundation (ISSF);
- Pew Charitable Trusts.

2. Many individuals and organizations contributed to the success of the 4th GFETW, but the majority of planning and organizing was carried out by the 4th GFETW Steering Committee, which was composed of International MCS Network member representatives from around the world, including from Costa Rica, and the International MCS Network Secretariat. Sincere thanks go to this dedicated group of individuals for taking the lead and making the 4th GFETW in Costa Rica a reality.

3. Similar to previous GFETWs, the 4th GFETW was highly successful in bringing together a global community of fisheries MCS professionals to share information and experiences and to receive training on a broad array of MCS topics. The 4th GFETW focused on the protection of artisanal and regional fishing communities through the promotion of legal, reported and regulated fisheries. Sustainable exploitation of living marine resources is essential for the livelihoods of communities dependent on fisheries. Illegal, unreported and unregulated (IUU) fishing undermines the sustainable use of living marine resources, threatens marine ecosystems, and adversely affects food security. Many national laws reserve near-shore areas for local fishing communities, but developing countries have limited resources to devote to MCS and enforcement of laws to protect small-scale fisheries.

4. The 4th GFETW witnessed both cases where measures to stop IUU fishing were not working and cases where concrete progress in effectively combating IUU fishing activities has been achieved. Whereas at the 2nd GFETW in Trondheim, Norway, the global task of combating IUU fishing appeared almost insurmountable, at the 4th GFETW, professionals reported real progress in implementing effective measures against IUU fishing through enhanced international cooperation in several regions. Nonetheless, combating IUU fishing remains a huge challenge, necessitating the sustained enforcement efforts of countries and the forward movement of international measures designed to protect fisheries resources and legal fishing activities worldwide.

5. A number of presentations delivered at the 4th GFETW emphasized that implementation of low-cost MCS solutions supported by fishers can contribute significantly to protect small-scale

fisheries. Participation and information sharing were identified as key at both the small-scale and regional levels, as was establishing trust – trust between fishers and government authorities, and trust among various governments. For small-scale fishers, systems that also improve their safety at sea help to incentivize their participation and build this critical trust. In addition to offering concrete examples of programmes and systems that are working at the national and regional scales, many presentations at this Workshop also provided inspiration for similar cooperative efforts in other communities and regions.

6. The Workshop presentations also showed that mutual cooperation between States can enhance efforts to implement agreed international measures and deployment of joint MCS operations. Enhancing cooperation is a primary focus of the International MCS Network, with a special emphasis on collaboration with developing countries. Several presentations at the 4th GFETW pointed to the need to invest additional efforts in developing countries in order to strengthen their capacities to effectively implement internationally agreed measures. These capacity development efforts should address governance, legislation and technical capacities (means and skills).

Workshop background

7. For decades, illegal, unreported and unregulated (IUU) fishing has proliferated due primarily to the globalization of the fishing industry and increased demand for fishery products. In 2001, FAO adopted the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), which defines IUU fishing activities. Such activities are a primary obstacle to achieving sustainable fisheries, are a threat to food security, and directly compromise the livelihoods of many as well as having detrimental effects on the environment. Combating IUU fishing has become a priority for the international community over the past 15 years, resulting in a number of initiatives by international organizations, governments, non-governmental organizations (NGOs), civil society and others.

8. Illegal, unreported and unregulated fishing activities take place both on the high seas and within national zones, and, due to globalization in the marketplace, no region or area is immune to these problems or their harmful effects. As individual States working on their own cannot solve such an extensive problem, combating IUU activities requires cooperation among national fisheries enforcement authorities.

9. Illegal, unreported and unregulated activities involve a spectrum of activities and are not confined to the act of fishing. They include transport, sale, purchase, processing and other steps in the supply and distribution chain. The amount of IUU activity that occurs, and the costs attributable to IUU activities are difficult to quantify, owing to the covert nature of IUU operations. However, in 2009, the value was estimated to be USD10–23.5 billion annually.

10. The overarching goal of the International MCS Network is to improve the efficiency and effectiveness of fisheries-related MCS activities through enhanced cooperation, coordination, information collection and exchange among competent national organizations and institutions. As an initial step toward realizing its goal, the Network convened the 1st GFETW in Kuala Lumpur, Malaysia, in 2005.[1] It brought together operational-level MCS professionals from around the world

[1] FAO/FishCode. 2007. *Report of the Global Fisheries Enforcement Training Workshop. Kuala Lumpur, Malaysia, 18–22 July 2005*. FAO/FishCode Review No. 18. Rome, FAO. 66 pp. Includes a CD–ROM and a DVD. (also available at www.fao.org/docrep/009/a0962e/a0962e00.htm).

dedicated to resolving IUU fishing issues, and provided them with training on a wide range of MCS topics. Participants discussed the latest developments, the different tools available to assist countries to deal more efficiently with IUU fishing, and methods for applying these tools through legal systems.

11. Owing to the success of the initial workshop, the 2nd GFETW was convened in Trondheim, Norway, in 2008 (FAO Fisheries and Aquaculture Report No. 885)[2] to further the work of the global community of operational MCS professionals and to offer them a global platform for sharing information and exchanging experiences and best practices. The participants learned about the latest, most effective and innovative tools and methods being used to detect IUU activities and apprehend those who engage in these practices. The outcomes of the 2nd GFETW were recorded in the 2008 Trondheim Declaration, in which participants recognized the serious threat posed by IUU fishing and the need for cooperative MCS. By means of the Declaration, the participants also called for increased training and capacity building and more opportunities for productive international cooperation, as well as encouraging countries to join the International MCS Network and endorsing the continuation of the Network's core services.

12. The 3rd GFETW, convened in Maputo, Mozambique, in 2011, expanded on the progress of the first two workshops by adopting a focus on the special needs of developing countries in successfully implementing MCS programmes. The participants at the 3rd GFETW emphasized the urgent need for expanded cooperation on all levels given that the transactions investigated often span many jurisdictions around the world. They further recognized the need for increased data sharing and discussed the MCS implementation challenges that small-scale fisheries must confront.

Workshop objectives

13. The main objectives of the 4th GFETW were to offer a global platform enabling MCS professionals:

- to become acquainted with their counterparts in other countries and to build trust in personal relationships;
- to promote sharing of information and exchange of experiences and best practices;
- to promote, where possible, initiation of operational cooperation between national fisheries enforcement authorities;
- to enhance understanding of relevant international measures, notably those adopted by FAO, and activities of international organizations such as INTERPOL and the United Nations Office on Drugs and Crime (UNODC);
- to learn about new MCS technologies and strategies to combat IUU fishing activities.

Participation and agenda

14. The 4th GFETW was convened for five days, allowing sufficient time for presentations to be followed by questions and discussions. The agenda consisted of ten sessions with identified themes in addition to an opening and closing session. Breaks were held between each session in order to allow participants to continue sharing ideas on the topics presented. Group meals and the field trip allowed for additional networking opportunities throughout the week. The Workshop agenda appears as Appendix 1.

[2] FAO. 2009. *Report of the Second Global Fisheries Enforcement Training Workshop. Trøndheim, Norway, 7–11 August 2008*. FAO Fisheries and Aquaculture Report No. 885. Rome. 70 pp. Includes a CD–ROM. (also available at www.fao.org/docrep/012/i0896e/i0896e00.pdf).

15. The 4th GFETW was attended by a total of 138 participants representing 41 countries, including 23 developing countries and more than 26 international/intergovernmental organizations, NGOs, academic institutions and other affiliations. Forty-six participants contributed presentations or served as facilitators. The list of Workshop participants is shown as Appendix 2.

16. The participants were asked to complete an evaluation of the usefulness and applicability of the content and organization of the 4th GFETW. A total of 36 evaluations were returned to the International MCS Network Secretariat, representing a response rate of 26 percent. The evaluations demonstrated general satisfaction with the Workshop overall. The evaluation results were synthesized, and a summary appears as Appendix 3.

17. Copies of the PowerPoint presentations given by the speakers have been posted on the website of the International MCS Network (www.imcsnet.org/4th-gfetw-presentations/). At the conference, simultaneous interpretation of speeches and presentations was provided in English, French and Spanish.

OPENING SESSION

18. On Monday morning, 17 February 2014, the 4th GFETW was inaugurated by Costa Rican President Laura Chinchilla. In the opening session, President Chinchilla served on the opening panel along with Cephas Ralph, Chair, International MCS Network, Hugo Martinez, Secretary-General, Central American Integration System (SICA), and the Costa Rican Minister of Agriculture and Livestock, Gloria Abraham. The inauguration ceremony of the Workshop included the official signature of a national decree by the President and the Minister as well as a cultural act performed by students from the Buenaventura Corrales School.

19. Cephas Ralph gave a word of welcome on behalf of the Network and the Steering Committee. He extended thanks to the Government of Costa Rica for hosting the Workshop, and he also thanked all contributors and supporters of the 4th GFETW as well as all the presenters and facilitators. He said he hoped that all of the participants would leave the GFETW with new ideas and inspiration to combat IUU as a result of information presented and multiple new contacts from around the world. Mr Ralph urged everyone to continue and expand their work to implement MCS activities to achieve sustainable fisheries, emphasizing that combating IUU should be a priority at the global, regional and national levels.

20. The next speaker, Hugo Martinez, added his welcome to all Workshop participants on behalf of SICA, noting with approval that there would be an emphasis on small-scale fisheries in some of the 4th GFETW panels. His opening speech, translated from Spanish, is included as Appendix 5.

21. As Mr Martinez explained, SICA is the organization under which Central American countries integrate efforts and resources in order to construct a region of peace, democracy, liberty and development. When the integration process was re-launched in 2010, priorities for regional action were defined, including democracy, security, risk management, climate change, social development, economic integration and institutional strengthening. These apply to all Central American countries (Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama) and the waters of all these countries, in which there are a number of shared migratory species. Four hundred thousand people participate in artisanal, industrial and recreational fishing activities, producing USD2.2 billion in annual revenue. According to the latest surveys, there has been significant growth in artisanal fisheries.

22. In 2005, an integration policy focused on fisheries and aquaculture was implemented, including one measure related to MCS in particular. This is related closely to democratic security matters. Central American countries are aware that IUU fishing is a practice that they must discourage and eliminate together to safeguard the future of artisanal fishers. Therefore, the integration policy includes MCS-related activities and a proposed model of governance, the principles of which are akin to those underpinning the 4th GFETW. Regulations currently in force pertain to a regional vessel registry and joint management of Caribbean lobster fisheries. Accompanying these regulations is a code of ethics for responsible fisheries and aquaculture, and soon legislation on IUU will be considered by the ministers.

23. Mr Martinez related the history of the steadily increasing involvement of the Central America Fisheries and Aquaculture Organization (OSPESCA) in the International MCS Network from the 2nd GFETW through to the 4th GFETW. This demonstrates the clear intent of Central American countries to be active participants in the Network. He thanked President Laura Chinchilla and all of Costa Rica for hosting this historic conference.

24. Next came a cultural act by students from the Buenaventura Corrales School, who performed several traditional dances for President Laura Chinchilla and other representatives of the Costa Rican Government and Congress and the GFETW participants.

25. Following the cultural act came an address given by Minister Gloria Abraham, Costa Rica Ministry of Agriculture and Livestock, who welcomed all attendees and described how Costa Rica is leading the region in the fight against the threat of IUU fishing. An English translation of her opening address is shown as Appendix 6.

26. Minister Abraham related the recent history of the fight, beginning in 2005, when Costa Rica adopted a code of conduct for responsible fishing. In implementing the code, it targeted IUU fishing. In the view of Costa Rica, it is important for humanity to use resources responsibly, both for current and future generations, in light of the contribution of fisheries to food security. These fisheries also represent economic opportunities for socially and economically depressed areas. In 2012, OSPESCA received the FAO Margarita Lizárraga Medal. OSPESCA takes pride in this recognition, but at the same time, it obligates the organization to continue its efforts in securing regional and global fisheries sustainability.

27. For these reasons, Costa Rica has strengthened its commitment to enhanced MCS, including a national register of fisheries and satellite tracking. It has banned shark finning and imposed seasonal closures in Caribbean lobster fisheries. Globally, the trade from IUU fishing represents almost USD23 billion per year and has significant repercussions for small-scale and artisanal fisheries. Developing countries such as Costa Rica have limited resources to implement MCS and enforce laws; thus, regional initiatives and government alliances are important. Global cooperation and international networks are equally relevant. These help to maximize the results of the fight against IUU fishing, in a manner similar to the fight against drug trafficking. One example of such a productive relationship is the International MCS Network.

28. Minister Abraham concluded with a call to all participants to pay close attention to the impacts of illegal fishing on small-scale fisheries. The relative effects are more severe for them. She also observed that the 4th GFETW was timely and could produce some inputs for the upcoming meeting of the FAO Committee on Fisheries (COFI). Last, she reiterated Costa Rica's commitment to ratify the Port State Measure Agreement (PSMA), which is now under discussion in the Costa Rican legislature.

29. Costa Rican President Chinchilla and Minister Abraham then signed the decree "Tuna fishing licences banning the use of FADs in the waters of Costa Rica". The document acknowledged the environmental destruction caused by fish aggregating devices (FADs) and confirmed the illegality of the use of these devices in Costa Rican waters.

30. Remarks were then made by President Chinchilla, who welcomed the participants and elaborated on Costa Rica's recent efforts to conserve marine areas and combat illegal fishing. The President complimented the GFETW for continuing to provide a venue to exchange ideas on best practices on fisheries enforcement since the first Workshop in 2005. She said Costa Rica was enthusiastic to host and to share the progress they had made nationally to fight IUU fishing and regionally through OSPESCA. Ten years ago, Central America saw the first warning signs on depletion of fisheries resources from IUU fishing, a problem that came with the globalization of markets. There is the need for cross-boundary cooperation to counter these impacts. Although informal, the International MCS Network is one effective approach.

31. With many communities dependent on sustainable fisheries, Costa Rica has proposed to make the agenda of coastal communities compatible with sustainable development, which is part of the National Policy. With respect to IUU fishing, Costa Rica has established six Marine Areas for Responsible Fisheries located on Pacific coast, where 90 percent of landings occur. The nation is balancing economics with the need to control fisheries and strengthening its Coast Guard. In 2011, President Chinchilla declared a large area around Cocos Island National Park to be a marine protected area. Costa Rica has also instituted regulations that prohibit shark finning and marketing of fins, and it has undertaken actions to ensure compliance with restrictions. In addition, INCOPESCA has a national council to manage the marine infrastructure of the country. The Costa Rican government is engaging in participatory management of marine spaces and goods and services. By 2028, the national development strategy will include marine spaces and will require an accurate framework.

32. President Chinchilla reiterated that fisheries had gained a special place in Costa Rica's sustainable development agenda, but she acknowledged that the "blue agenda" needed further expansion. This includes conservation of marine biodiversity and MCS to combat illegal fishing. She congratulated the participants on all their efforts in these areas.

33. The group photo session followed, and a copy of the photograph appears as Appendix 7.

KEYNOTE ADDRESS: FROM CURB AND FOC TO PURPLE NOTICE: GLIMPSES FROM THE IUU HISTORY

34. The keynote address was delivered by Johàn Williams, Chairman, COFI, and Specialist Director, Ministry of Trade, Industry and Fisheries, Government of Norway. This comprehensive address described the past 15 years of international policy on IUU fishing.

35. Mr Williams commenced his keynote address by stating that steady progress and some sizeable victories had been achieved in the last 15 years with respect to international actions against IUU fishing activities. Noting the increased participation of developing countries and other new allies, he predicted that greater future achievements were possible. He began his narrative with the COFI meeting in 1999 where the concepts "Curb IUU" and "[Flag of Convenience (FOC)]-fishing" were introduced. At first, no one fully comprehended these terms, but, by March 2001, a draft International Plan of Action against IUU had been created with guidance to regional fisheries management organizations (RFMOs). At that time, some reservations were raised to prohibiting IUU landings because they might hamper freedom of trade, arguments that no one would make today, illustrating how COFI has evolved since then. After reliance on flag States was deemed insufficient, expert consultations focused also on port State measures from 2000 to 2005, which resulted in the 2005 FAO Model Scheme for Port State Measures. Some developing countries took particular interest in this problem, inspiring ministerial declarations and development of models and other work by experts in these countries.

36. As an example of a turning point in the mindset toward IUU fishing, Mr Williams identified the near collapse of the Northeast Atlantic cod stock in 2005–06. Scientists could not explain why these stocks were declining, although it was suspected that there were flaws in the reporting system. Investigations revealed major underreporting of 101 000 tonnes in the Russian cod catch as well as other estimated IUU fishing of 166 000 tonnes of cod. A number of European and other countries were implicated based on ownership of Russian-flagged vessels or direct involvement in trade and production of IUU fish. In Norway, this became a prominent political issue, which resulted in an extraordinary increase in the mid-year budget allocation to the Directorate of Fisheries. Bilateral discussions with Russian counterparts at all levels ensued, as did more efforts in the relevant RFMOs. The Directorate delivered new comprehensive legislation to the Norwegian Parliament in June 2006. These steps and efforts of the Joint Norway–Russia Commission produced a positive result for Atlantic cod stock, which was assessed in 2013 at an all-time high. However, Mr Williams stressed that IUU fishing was an extremely lucrative activity, and, therefore, no success could be considered permanent with respect to conservation of fish stocks. It remains important to ensure that fishers continue to fish within quotas and that overall effort is downscaled.

37. Returning to the history of port State controls, other notable events in 2006 and 2007 included adoption by the Northeast Atlantic Fisheries Commission (NEAFC) of an ambitious scheme in 2006; the FAO model scheme; the early work by European Union (Member Organization) on a catch certificate regulation; and the calls by both the parties to the UN Fish Stocks Agreement (UNFSA) and members of the UN General Assembly for a legally binding instrument building on the FAO model scheme. These and a number of expert consultations led to the PSMA of 2009, which has not yet entered into force.

38. Renewed attention was focused on the issues of flag States and FOCs in 2010, and voluntary guidelines were agreed to in February 2013, 14 years after the issue was first raised. In this regard, Mr Williams stated that the freedom of the seas was still a problem, "but it is also a right." Thus, although

FOCs are the root of the problem, indirect measures are necessary, such as port State measures, catch certification, blacklisting of IUU vessels, sanctioning owners, and market measures, all of which have limitations.

39. Most RFMOs have their own vessel blacklists now, and Norway has argued these listings should be permanent, regardless of ship ownership changes. In 1999, Norway's ideas were considered controversial, but now many RFMOs maintain lifetime bans. Transshipment at sea is the main problem in the North Atlantic. Blacklists may be creating "Flying Dutchmen" – ships that never go to port, which is a problem in itself – but this does not prevent transport ships from still landing their catch. Another persistent problem is the difficulty in discerning vessel ownership. Under vessel registration rules, corporations can register as owners, and underlying individuals can remain anonymous. This is the reason that law enforcement is often limited to targeting vessels. It also provides cover for criminal activity ranging from money laundering through FOC countries and other organized crime to forced labour and drug and human trafficking. Substantial evidence of such activity has been uncovered in the last five years, including the discoveries of one tonne of cocaine stashed in frozen sharks in 2009 and 36 victims of human trafficking who were liberated from two illegal fishing vessels in Costa Rica in 2010. The UN General Assembly has expressed concern over the link between IUU and criminal activity and the UNODC is also exploring this connection. INTERPOL, the newest ally in the fight against illegal fishing, is also approaching IUU from this perspective through its Fisheries Crime Working Group.

40. In conclusion, Mr Williams identified some key measures for effective fisheries control. Document control under which documents are checked against actual catch is paramount. Physical checks must be performed both at sea, by comparing amounts recorded in catch logbooks with physical quantities – processed or not, kept on board – and on land, by verifying amounts recorded in catch logbooks and sales notes against the physical quantities landed. Conducting post-sales audits may also reveal discrepancies between raw material purchased and the fishery products sold. Deterrent sanctions are also essential and must be higher than the benefits of illegal activities. Where fishers are allowed to keep the catch and pay fines in amount of value of illegal catch, this is no deterrent. Dissuasive sanctions include blacklisting, serious fines, licence confiscations and criminal prosecutions. Finally, he cited the need for cooperation at the national, regional and global levels, including teamwork among the International MCS Network, INTERPOL, FAO and UNODC. He remarked that the more bodies were convinced to collaborate, the stronger the International MCS Network would be.

SESSION 1: REGIONAL COOPERATION BETWEEN COASTAL NATIONS

Facilitator: Guillermo Compeán, Director, Inter-American Tropical Tuna Commission

Presentations:

The Tanzania Experience with MCS, Geofrey Nanyaro, Chairperson, Stop Illegal Fishing

Artisanal and Small-scale Fisheries Experiences in Central America, Mario González, Regional Coordinator of SICA/OSPESCA

Monitoring Fisheries Activities in EEZs of Pacific Island States, Mike Pounder, Surveillance Operations Officer, Forum Fisheries Agency

41. The first session of the 4th GFETW was convened on the afternoon of 17 February 2014 and was facilitated by Guillermo Compeán, Director, Inter-American Tropical Tuna Commission (IATTC). This was the first of two sessions under the theme of regional MCS cooperation.

The Tanzania Experience with MCS

42. The first presentation of the session was made by Geofrey Nanyaro, Chairperson, Stop Illegal Fishing, on behalf of Zahor El Kharousy, Director-General, Deep Sea Fishing Authority (DSFA) of the United Republic of Tanzania, who was unable to attend the Workshop. The presentation centred on the progress of the DSFA since it was established in 2009. Prior to 2009, the exclusive economic zone (EEZ) of the United Republic of Tanzania was managed by two different fisheries regimes, that of the Tanzania government and that of the Zanzibar government. These two regimes had separate laws and regulations, each issuing its own licences to distant-water fishing nations without any systematical information exchange, sometimes even competing with each other. Informed decision-making and MCS were virtually impossible.

43. Management of fishing in the country's EEZ was brought under one roof when the DSFA was established and mandated to manage the combined EEZs in 2009. Initial MCS activities, including air patrols, revealed that IUU fishing was widespread throughout the EEZ, but, at first, the DSFA lacked the capacity to follow or arrest vessels, some of which were unmarked or had false registration numbers. Since then, availability of vessel monitoring systems (VMSs) has enabled tracking IUU vessels back to countries and has resulted in increased compliance with the submission of catch and effort data. Seeing where the fishing was concentrated, the DSFA was also able to target future patrols. Among illegal operators, awareness of increasing frequency of air patrols produced a deterrent effect. Remaining challenges include too few air patrols, lack of MCS infrastructure, insufficient authority to arrest, underfunding, understaffing, and an inadequate legislative framework. To cover the entire EEZ of the United Republic of Tanzania, four aircraft fly for from four to five hours, which is cost-intensive at a price of USD23 000 per day.

44. Mr Nanyaro described two examples of regional cooperation that are helping to surmount these challenges, including an arrest coordinated by patrols in the United Republic of Tanzania, Mozambique and South Africa, and the FISH-i Africa initiative, a Western Indian Ocean regional partnership programme involving the United Republic of Tanzania, the Comoros, Kenya, Madagascar, Mauritius, Mozambique and Seychelles. FISH-i Africa was established to facilitate the fight against IUU fishing. The organization Stop Illegal Fishing was instrumental in these efforts, laying the groundwork for a 2012 agreement and providing information on vessels.

45. Because FISH-i Africa identifies and tracks vessels fishing with fraudulent licences, IUU fishing has been thrown into disarray. The United Republic of Tanzania has also refined its licensing system to curtail fraud, which has obliged vessels that previously took advantage of flaws in the system to renew their licences. More revenue is anticipated from these vessels as well as from returning legal operators that, in the past, were driven away by widespread IUU. Applications for 40 new licences worth more than USD300 000 have been received, and investor confidence is increasing. To continue to meet ongoing challenges, the United Republic of Tanzania has also taken measures such as subscribing to cost-effective regional information services, so as not to have to rely on expensive aerial surveillance.

Artisanal and Small-scale Fisheries Experiences in Central America

46. A presentation that related the experiences of Central American artisanal and small-scale fisheries was made by Mario González, Regional Coordinator of SICA and OSPESCA. His presentation focused on two major issues – regional cooperation and artisanal fisheries in Central America.

47. Echoing the Secretary-General of SICA in the opening session, Mr González stated that the essential objective of SICA was to achieve the integration of Central America and to establish it as a region of peace, freedom, democracy and development. Fisheries is one of the areas in which the eight member countries – Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama – cooperate together. All the countries have similar challenges with respect to fisheries, and they share some migratory species in common. The number of artisanal fishers in the region increased by more than 50 percent from 1995 to 2010, and annual volumes of catches and number of boats in small-scale fisheries also increased, corresponding to a rise in annual value from USD179 400 000 to USD648 578 512. Artisanal fishing is concentrated in 1 093 communities, mostly on the Pacific coast. The socio-economic profile of artisanal fishing communities has also evolved, and the latest surveys indicate better basic education among fishers.

48. The limitations faced by the artisanal fishing sector include more catches than the resources can bear, more use of illegal gear than before, and limited participation in trading. Safety at sea must be increased for these fishers. Some fishing zones have become vulnerable to other illegal activity, not necessarily fishing, which necessitates environmental coordination in the area.

49. OSPESCA, which integrates action at all levels of government from ministerial to technical, seeks to promote the sustainable development of fisheries and aquaculture with the cooperation of civil society groups such as the Central American Confederation of Artisanal Fishermen (CONFEPESCA). The Fisheries and Aquaculture Integration Policy was the first step. Surveillance and control is one of this policy's key application strategies. The next step entailed converting voluntary agreements into binding ones and creating an integrated vessel register. New regional regulations also govern satellite monitoring and control systems for fishing vessels, a code of ethics for responsible fisheries and aquaculture, banning of shark finning, and widespread efforts to properly employ turtle excluder devices (TEDs). SICA has endorsed this agreement, and the agreement is now expanding to Caribbean countries. One specific example of regulation is the seasonal closure of Caribbean spiny lobster fisheries. Ministers of OSPESCA have also set a timetable for banning the skin-diving method for lobster fishing, which carries serious health risks.

50. Special emphasis is placed on the participation of indigenous communities, and on taking their concerns into account both when developing integration policies and when negotiating international policy, such as the guidelines for artisanal fisheries under discussion at FAO. OSPESCA has actively

been involved with the International MCS Network since the 2nd GFETW. The Central American countries, as members of the Network, desire to continue sharing their experiences and learning from others, so as to better fight IUU fishing in the future.

Monitoring Fisheries Activities in EEZs of Pacific Island States

51. The final presentation of the first session was made by Mike Pounder, Commander, Royal Australian Navy, on secondment as Surveillance Operations Officer, Pacific Islands Forum Fisheries Agency (FFA), the body that coordinates monitoring fishing activities in the EEZs of Pacific island States.

52. Mr Pounder began by highlighting a few features of FFA, which is not an RFMO but facilitates regional cooperation and coordination between the 15 Pacific island States with respect to fisheries policy, and from whose EEZs most Pacific catch is taken. The other two members, Australia and New Zealand, support the Pacific members, which are: the Cook Islands, Fiji, Kiribati, the Marshall Islands, Micronesia (Federated States of), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. Some of their EEZs are large or segmented or interconnected with high seas pockets in between, making policing them difficult. The high seas areas are managed by the Western and Central Pacific Fisheries Commission (WCPFC) and other RFMOs. Of the many challenges faced by the region, IUU fishing by distant-water fishing nations is foremost. Through a defence cooperation programme, Australia has gifted 22 patrol boats since 1985, but, by choice, some nations still have no patrol boats of their own.

53. Mr Pounder described the history of regulation in the region as one of evolution and revolution. Multiple treaties that apply across the region may seem excessive, but each has its role. A collective strategy led to the establishment of the Regional Fisheries Surveillance Center (RFSC) located at the FFA Secretariat in Honiara, Solomon Islands, which is dedicated to detection and deterrence of IUU activity. Australia has provided most of the financial support for the development of the RFSC, which is seen as a core intelligence hub for the patrol boats across the 30 million km^2 of EEZs in the region. Technology plays a major role, and information exchange has taken a leap forward in recent years, drawing on data feeds from new sources. From these, the RFSC produces a regional surveillance picture, which is distributed to FFA members' national headquarters, and, via secure login, it allows members to click on contacts for additional information. This and other risk assessments and analyses performed by the RFSC help to alert members to illegal activities. As of 2012, cooperation between the FFA and WCPFC allows individual members to request access to certain WCPFC non-public information, including 100 nautical mile buffer data to view high seas activity 100 nautical miles beyond the EEZ. This has closed a significant MCS data gap.

54. With a fleet of 22 Pacific-class patrol boats, the RFSC coordinates four substantial regional MCS operations each year. These are made more potent with support from the "Quads" – Australia, New Zealand, the United States of America and France – in the form of air patrols, surface patrols, the embarkation of authorized officers from member nations, and boarding teams deployed from Quad assets. They also support capacity building for FFA members' own operations, and they have provided valuable data to the RFSC through various patrols and initiatives, including the United States Oceania Maritime Surveillance Initiative, and through New Zealand and Australian patrols.

55. With respect to governance, all FFA members are Parties to the Niue Treaty, and eight have signed a new subsidiary agreement, which would establish a new information system and a mechanism for intelligence sharing between law enforcement and fisheries agencies, allowing for swift dissemination of data for national decision-making. The new multilateral subsidiary agreement also

encourages joint operations, sharing of equipment and fisheries data and enforcement across international borders. It is intended to replace some bilateral agreements of the past.

56. For future success, information gaps need to be closed, and plans must include multilayered surveillance, complex analysis tools, cooperation of international organizations, and replacement of ageing patrol boats, which is planned to occur under the Pacific Maritime Security Program for all current programme members and Timor-Leste between 2018 and 2028. Taking these and other incremental steps is the best way to reach the end goal of global cooperation.

Discussion, comments, questions and answers

57. The presenters received questions on a number of topics, as follows:

- Integration of information gathered by different technologies and whether VMSs and the Automatic Identification Systems (AIS) produce or could produce technically compatible data.
- The intersection of policy and operational aspects and examples of policy decisions that have had a positive impact at the field level.
- Investment made in monitoring activities in the Pacific and whether satellite imaging has been considered in any region there.
- How much scaling up of VMSs would be needed to achieve enforcement goals, specifically in the Pacific.
- The greatest challenges faced by OSPESCA in its regionalization activities.

SESSION 2: REGIONAL COOPERATION ON THE HIGH SEAS – RFMOs

Facilitator: Luis Dobles, Executive President, INCOPESCA, Costa Rica

Presentations:

> **A New Approach to Understanding Trends and Capacity in IUU Fishing in the Southern Ocean**, Sarah Lenel, Fishery Monitoring and Compliance Manager, CCAMLR
>
> **Compliance and Regional Cooperation in the EPO**, Guillermo Compeán, Director, IATTC
>
> **Regional Cooperation – ICCAT**, Chris Rogers, NOAA Fisheries Service, Office of International Affairs

58. Session 2 of the 4th GFETW was convened in the afternoon of 17 February 2014 and was facilitated by Luis Dobles, Executive President, Costa Rican Institute of Fisheries and Aquaculture. It was the second of two sessions on the theme of regional MCS cooperation.

A New Approach to Understanding Trends and Capacity in IUU Fishing in the Southern Ocean

59. The first presentation in Session 2 was given by Sarah Lenel, Fishery Monitoring and Compliance Manager, Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), an intergovernmental organization responsible for the conservation and management of Antarctic marine living resources in the Southern Ocean.

60. Ms Lenel's presentation explained CCAMLR's change in methods used to estimate IUU catch and the challenges associated with quantifying estimates. She also highlighted what is currently known about IUU fishing in CCAMLR's convention area, including some of the key characteristics of the IUU fleet, and the development of new tools and methods to estimate IUU catch and detect IUU vessels. In addition to being a direct threat to marine resources, IUU fishing undermines the science used to support rational use of these resources. Accurate IUU estimates are important for both these reasons.

61. In the past, CCAMLR used to estimate the amount of toothfish caught by IUU activities based on sightings submitted by members following active surveillance. These calculations did not take into account factors such as surveillance effort. Therefore, and very importantly, it was not possible to distinguish between an apparent decrease in IUU catch and a decrease in surveillance effort resulting in fewer sightings. As a result, CCAMLR no longer estimates IUU catch based on sighting reports.

62. Given the limitations of the use of sightings data, CCAMLR's Scientific Committee requested CCAMLR Secretariat to produce a map of historical IUU fishing activity. In undertaking this task, the Secretariat accessed all available data. This required close collaboration between science and data management experts as well as industry. Ms Lenel emphasized the value of working together with these sources, which contributed diverse data and provided CCAMLR with different perspectives. Surveillance data can still be instructive, but other evidence, such as recovered gillnets, has pointed to IUU fishing in areas where no sighting-based data has been obtained. Vessel monitoring system data have also indicated the presence of the IUU-listed vessel the *Nihewan* in CCAMLR's convention area, although the vessel was not sighted.

63. What is evident through the information provided is that up to nine IUU-listed vessels are persistently engaged in IUU fishing in CCAMLR's convention area, one of which is a reefer vessel.

Although they are not detected every year, there is evidence that they do operate annually. Key characteristics of IUU-listed vessels operating in the region include reefer support and fleet cooperation, both of which magnify the fleet's capacity. The vessels frequently change names and use FOCs, typical of IUU vessels worldwide. All but one of the vessels use gillnets, which are prohibited in the convention area and are of particular concern to CCAMLR. The impact of gillnets on the marine environment is unknown but is likely to be quite considerable, particularly in relation to bycatch and the physical marine environment. All of these factors must be taken into account in any future estimates of IUU catch.

64. Ms Lenel shared a recent success story concerning the IUU-listed vessel *Thunder*, which has been active in the convention area since at least 2006 and is currently the subject of an INTERPOL Purple Notice. In February 2013, Australian authorities sighted the vessel heading to Southeast Asia and notified Southeast Asia Regional Plan of Action contacts in Indonesia and Malaysia. As a result, the vessel was denied access to Malaysia and entered the Indonesian port of Benoa. Indonesian authorities collaborated with Australia to undertake an inspection of the vessel. The inspection identified a number of the crew as Spanish and Chilean nationals, and Spain subsequently prosecuted the master of the vessel, first mate and chief engineer. For this type of prosecution, both Spain and Chile required authenticated evidence, and meeting such evidentiary standards is an ongoing challenge for CCAMLR. As to the beneficial ownership of the *Thunder*, investigation is still under way.

65. This example demonstrates the importance of effective surveillance and inspection regimes, and the need for an effective system of cooperation between States with the free exchange of information. CCAMLR has worked diligently to develop this framework and will continue to work in this endeavour.

Compliance and Regional Cooperation in the EPO

66. Next, Guillermo Compeán, Director, Inter-American Tropical Tuna Commission (IATTC), delivered a presentation on the topic of Compliance and Regional Cooperation in the Eastern Pacific Ocean (EPO), where the IATTC imposes certain duties on members as flag States, particularly as related to tuna and similar species under the IATTC's mandate.

67. Mr Compeán listed three major obligations of members, which the Antigua Convention (which will replace the 1949 convention that established the IATTC) makes clear: (i) limiting licences granted to only vessels they control; (ii) ensuring no fishing occurs in the IATTC's convention area without a corresponding permit (no longer leaving this choice to the vessels); and (iii) ensuring compliance with all rules and regulations of the Convention. Given the multitude of relevant IATTC resolutions – concerning transshipment, the high seas, fishing capacities, reporting from the seas, and specific species such as bigeye tuna – this can be complicated for member countries.

68. Mr Compeán related the background of the IATTC and national observer programmes, which were commenced in order to tackle the problems of dolphin bycatch and incidental mortality. Today, the RFMO faces the same issue with respect to sharks. Originally undertaken by the United States fleet, the observer programme has expanded as countries have joined the purse seine fisheries. The programme does not ignore longline fisheries, but it primarily targets purse seiners, which represent 90 percent of the fishery. In 1992, it was agreed that all countries should receive equal treatment and coverage. The IATTC works well with national programmes, employing a statistics-based approach to run comparisons of these so as to facilitate information exchange as well as uncover infractions. Observers collect data in recognizable forms, including recording all bycatch dead, alive and thrown

back. Everything must be recorded in real time, which makes mistakes and attempts to defraud the system unlikely.

69. All vessels in the EPO must be listed in the regional registry, although observers are not required on board very small purse seining vessels unless suspected of infractions. The IATTC reviews more than 500 pages of required reports each week and maintains an observer database. It also produces new forms as needed. For example, a report of floating objects would raise the issue of entanglement of marine life, and this would be added to the form. The regional offices, through which all landings are made, all submit complementary data, including length measurements and biological samples. These offices, which have the authority to place observers on board and take other measures, relocate as needed depending on fleet movement. They also record possible infractions when there are closures, during which all vessels are required to be docked. Its convention authorizes the IATTC to collect all this information itself, but, because it values cooperation, it never does this without the approval of member countries.

70. Mr Compeán concluded by sharing some of the successful results of IATTC observer programmes. Levels of compliance are high, with 99 percent of at-sea reports received within a week. As a result, dolphin mortality has decreased to statistically zero, shark finning has almost disappeared and tuna discards are low. For bycatch of sea turtles, one special programme for longliners focuses on methods of liberating turtles unharmed. The IATTC also has a transshipment follow-up programme, which applies to large tuna organizations and small longline and artisanal fisheries alike. Part of this effective effort involves Central and South American and French Polynesian ports disallowing transshipment landings, forcing vessels to travel too far to be able make a profit.

Regional Cooperation – ICCAT

71. The final presentation of Session 2, which concerned the International Commission for the Conservation of Atlantic Tunas (ICCAT), was made by Chris Rogers, Office of International Affairs, National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, the United States of America. He noted that his presentation did not necessarily represent the views of ICCAT or its contracting parties.

72. Mr Rogers, who served as Chair of the ICCAT Compliance Committee for six years, explained that this RFMO's objective is to achieve maximum sustainable yield (MSY) in the fishery. Composed of 47 contracting parties and 6 cooperating parties, ICCAT has about 150 active measures, some of which are more prescriptive than others, including quotas and companion MCS measures. There have been trends of increasing specificity and also of centralization of data management at the ICCAT Secretariat. Mr Rogers displayed a graphical tool used by ICCAT's scientists and managers to assess whether MSY is being achieved, and demonstrated how it worked, using an example for bigeye tuna data from ICCAT's 2012 scientific report.

73. He also discussed management of bluefin tuna, the catch of which increased excessively with the introduction of purse seiners in the 1990s. ICCAT scientists provided estimates of unreported catch through assessments of fleet size, vessel productivity and the number of farming operations. This analysis demonstrated that parties were not decreasing their catch according to agreed quotas. This persistent problem led some people to argue that the trade should be more strictly documented and that this could be achieved through adding bluefin to Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Many ICCAT contracting parties believed that a CITES listing was unnecessary and that ICCAT could take effective action to address the overharvest. In 2008, an independent panel confirmed that ICCAT performance relative to its

convention objectives was insufficient. The panel recommended development of binding allocation criteria, better application of rules and measures, and the imposition of stricter sanctions for situations of non-compliance.

74. Mr Rogers dedicated the rest of his presentation to explaining how ICCAT evaluates compliance, breaking this into four parts: (i) need, (ii) method, (iii) process, and (iv) conclusions. He identified three primary needs under the first category: data, conservation measures, and MCS measures. Data, including catch, effort, gear, size distribution, species composition and bycatch, are needed by ICCAT's Scientific Committee to make recommendations to the Commission. Weak or incomplete data can lead to poor management decisions. Also needed are conservation measures, including methods of maintaining or adjusting the fishing mortality rate, and MCS measures to ensure compliance with the conservation measures. Thus, the method ICCAT adopted was very strict and specific with respect to requirements for contracting parties to report directly to the ICCAT Secretariat on actions taken to implement the conservation and MCS measures. To further increase transparency, ICCAT allows third parties (e.g. NGOs) to register reports and enquiries about alleged infractions with the ICCAT Secretariat for distribution to the concerned flag, port or market States. Data from catch documents, inspections, VMSs and observers are housed centrally at the ICCAT Secretariat and are freely available to contracting parties.

75. Under the heading of process, Mr Rogers discussed how measures on procedures and potential actions are handled. After requesting information on alleged infractions from a contracting party and allowing for cross-examination by other contracting parties, ICCAT's Compliance Committee considers the responses and recommends corrective actions. These could include change in total allowable catch allocated to a party; measures limiting fleet capacity or farming operations; or stricter MCS requirements to bring the party back into compliance. These measures are not infallible but have been helpful in reducing overharvesting and underreporting, leading to improved stock assessment and stock recovery. The process entails costs both to the ICCAT Secretariat and contracting parties, but it has also produced cost savings for the parties in the centralized databases as well as potential costs savings for the ICCAT Scientific Committee in having improved data available in time for stock assessment workshops. For contracting parties, stock recovery and stopping IUU can mitigate some of the compliance costs if the market sets higher prices for legal product and catch quotas can be raised as stocks recover.

76. Mr Rogers concluded with some lessons from the ICCAT experience, including that RFMO performance depends highly on contracting parties and on port and market States for consistent enforcement throughout the supply chain. Clear minimum standards must be harmonized and corrective measures applied to all members. Finally, a centralized database can lower overall costs, alleviating some of the burden of data collection by individual nations, and increase the effectiveness of national programmes.

Discussion, comments, questions and answers

77. Specific questions were raised and comments made regarding the following issues:

- The differences between tuna RFMOs and CCAMLR in problems faced and measures undertaken.
- Using VMS data versus the AIS, and whether CCAMLR has considered using the AIS.
- The IATTC observer programme, how observers are chosen, and how data are validated.
- The IUU vessel *Thunder*, specifically the prospective prosecution of the Chilean crew members.
- The tuna tracking systems of each RFMO.

SESSION 3: COST-EFFECTIVENESS OF MCS

Facilitator: Dean Baigent, Director Compliance, Ministry for Primary Industries, New Zealand

Presentations:

> **Cost of IUU and Cost-effective MCS**, Randy Jenkins, Director, National Fisheries Intelligence Service, Canada
>
> **Low-cost Fisheries MCS Tools**, Kim I. Mallalieu, Senior Lecturer, University of the West Indies
>
> **Cost-effective Maritime Monitoring using Space-based Technology,** Jeff Hurley, Business Development Manager, MDA, Canada

78. The third session of the 4th GFETW was convened on the morning of 18 February 2014, with Dean Baigent, Director of Compliance, Ministry for Primary Industries, New Zealand, as the facilitator. It was the first of two sessions under the theme of cost-effective fisheries enforcement.

Cost of IUU and Cost-effective MCS

79. The first presentation of the third session was delivered by Randy Jenkins, Director, National Fisheries Intelligence Service, Canada, where fisheries MCS protects a valuable economic resource, which directly contributes CAD2 billion (about USD1.6 billion) per year to Canada's gross domestic product, sustains livelihoods and communities, and generates exports.

80. The costs associated with IUU fishing include financial, ecological and social costs. Illegal, unreported and unregulated fishing is not a victimless crime; it leads to loss of income to families, hunger, drug abuse and other consequences. Canada has determined that companies engaged in IUU are sophisticated and not above bribery, collusion with trucking companies, and utilization of false licences and papers, such as bills of lading. Monitoring at the wharf alone will not catch these vessels. Illegal, unreported and unregulated fishing is particularly problematic in quota fisheries because of the high value of these species.

81. After providing an overview of the key roles of fisheries enforcement officers, Mr Jenkins discussed the three pillars of Canada's National Compliance Framework: (i) education, (ii) MCS, and (iii) special investigations. Mr Jenkins displayed an illustration depicting the three pillars as columns built on two layers of foundation, labelled "intelligence" and "program support", on which the strength of the pillars depends. Programme support includes training and resources to pay officers. As to intelligence, Mr Jenkins noted that Canada was moving towards a national intelligence strategy. Education is considered the preventive pillar, and work under the special investigations pillar has expanded in recent years. The second pillar, MCS, can incorporate a wide range of tools and implementation strategies. For example, 15 years ago, Canada banned activity by non-members of the Northwest Atlantic Fisheries Organization (NAFO) at the extremities of its continental shelf. News of the law and the effective date was announced via an onsite broadcast in various languages. This simple strategy successfully compelled the prompt departures of non-NAFO vessels.

82. Further to the MCS pillar, Mr Jenkins discussed cost-effective MCS in the age of government austerity. Traditional MCS tools are considered "big ticket" items and potentially vulnerable to budget cuts. Despite ongoing illegal activity occurring every day, priorities must be set and costs balanced against the value of the fisheries being protected. Canada minimizes costs by carefully allocating

resources for patrols primarily to land patrols (72 percent), and less to sea patrols (23 percent) and air patrols (5 percent). The idea behind this is that more effective port inspections can lead to more targeted sea and air patrols. Financial resources must be utilized for the most effective enforcement where diverse approaches are available. For example, in Canadian lobster fisheries, funds should be focused on the high-risk populations rather than monitoring the fisheries, which have no limits on harvesting lobsters of a minimum size. Mr Jenkins predicted Canada's intelligence strategy would help to identify high-risk issues and areas. He also identified several other requirements of cost-effective MCS, including, *inter alia*: (i) an effective legal framework that addresses the problems being observed, including prosecutions; (ii) sharing data and cooperating bilaterally, regionally and internally; (iii) observer programmes, costs of which can be absorbed by industry; (iv) new technology, such as VMSs, drones and electronic logs; and (v) landing controls.

83. The bottom line is that MCS can be costly, but the social, economic and ecological cost of doing nothing is higher. There is a suite of options available, from which States need to select the ones that work best for them. Some need to be tailored, others can be borrowed. At the technical level, agencies must discern best approaches, such as whether to deal with issues onshore or offshore. Finally, MCS should be integrated into any fisheries management regime. A balanced strategy would include a realistic and affordable compliance target, e.g. 70 percent compliance, paired with programmes to deal with non-compliance.

Low-cost Fisheries MCS Tools

84. The second presentation, made by Kim I. Mallalieu, PhD, Senior Lecturer, Department of Electrical and Computer Engineering, the University of the West Indies, provided information on low-cost fisheries MCS tools through discussion of initiatives in Trinidad and Tobago.

85. Ms Mallalieu first gave an overview of important concepts for effective MCS. She began by splitting MCS into its core functions. Monitoring comprises data collection, measurement and, above all, analysis. Control entails rule setting, management and decision support; and surveillance consists of observation, supervision and an assessment of whether vessel operation is in compliance. Core MCS functions can be further subdivided into functional requirements of hardware, software and human components of effective MCS systems, and human requirements do not stop at enforcement. Ms Mallalieu next discussed what she termed contemporary information flows, which can enhance data repositories and information exchange and analysis over their traditional counterparts. In this model, information needs to flow not only directly to a data repository but also between the various contributors, including stakeholders, observers on land and at sea, and regulators. Whether direct or through intermediaries, these communications and related analyses, discussions and rulemaking should all be occurring contemporaneously. It is useful for some data – such as vessel identification and location, activity, infringement analysis and engagement – to be communicated in real time, but additional and other information collected in non-real time is still useful and crucial for MCS.

86. Ms Mallalieu broke down the physical MCS system into its key components from point of data entry to point of data storage as follows: the data acquisition and logging device, the communications infrastructure, and the data portal. The devices that may be used to acquire or log MCS data include automatic data loggers such as on-vessel VMS and AIS devices, with or without local display capabilities; voice communications devices such as marine radios; and mobile data devices, such as cell phones and tablets, for manual as well as automated data acquisition and entry. Communications options include: satellite, which is the most expensive but has the greatest reach; radio, the least expensive, with an intermediary reach; and cellular, costs of which fall between those

of radio and satellite. In comparing key hardware solutions, Ms Mallalieu characterized VMSs and the AIS as absolutely essential for effective MCS of vessels, noting that these are ingrained in many policies and regulations in jurisdictions around the world. However, she pointed out that these are impractical devices for many small-scale fishers on account of spatial constraints on their vessels and devices, as well as service costs.

87. For this reason, the cellular phone is a device of high interest to people designing low-cost systems and is considered the best field solution for many artisanal fishers. Advantageous features of smart phones include mobility, durability, wireless capability, and programmatic support for automatic tracking and transmission as well as manual data collection. Disadvantages of smart phones are that power typically lasts a maximum of 24 hours and automatic transmission capability is dependent on cell coverage, although data collected locally can be stored for later transmission. In addition, there is open-source software compatible with smart phones, which includes support for ecological/biological monitoring as well as operational support and other needs of fishers.

88. Low-cost MCS based on all the above is illustrated by a case of Trinidad and Tobago and the Caribbean, where fishing is mostly artisanal, vessels are 7–10 m, and fishing communities are generally poor. Here, strong traditions of freedom at sea and inconsistent and ineffective enforcement make MCS particularly challenging. The regional philosophical approach of the Caribbean Regional Fisheries Mechanism is one of empowering fisher folk to co-manage fisheries, including resolving IUU.

89. Ms Mallalieu reported that she enthusiastically supported the participation of small-scale fishers in a co-management regime and asserted that the missing link to encourage this participation was a strong value proposition for the fishers. She offered the mFisheries application suite, developed at the University of West Indies, as a natural focal point for an MCS component. She identified existing functions that could easily be incorporated into the mFisheries suite, and discussed existing and new features to incentivize use of the suite and participation in MCS exercises. These include navigation and weather services, a virtual marketplace, and a function to send SOS alerts to emergency contacts and the Trinidad and Tobago Coast Guard. This is entirely reasonable for artisanal fisheries and low cost for all. Moreover, when the time is right, smart phone MCS programmes can be integrated easily and incrementally with "normally zero satellite reporting" (NZR) to ensure that fishers are always in communications coverage. She identified the NZR communications as the highest priority for her research team, and indicated that discussions with a tracking and traceability specialist had commenced.

90. Ms Mallalieu concluded by listing the intrinsic features of low-cost MCS solutions. They should be multitiered, multidimensional, multidisciplinary, multiagent, multitechnology, multijurisdictional, and, above all, multigenerational.

Cost-effective Maritime Monitoring using Space-based Technology

91. The last presenter in this session was Jeff Hurley, Business Development Manager, MacDonald, Dettwiler and Associates (MDA), a Canada-based global communications and information solutions vendor.

92. Mr Hurley began his presentation with a description of MDA, including the company's involvement in projects related to the international space station projects and an overview of space-based assets that can be used for maritime surveillance. He set the stage by posing some questions related to key information needs of MCS professionals, such as what the big picture of vessels in the

maritime domain is, what the details of those vessels are, where those vessels are coming from and going to, what their intent is, which vessels require greater focus, and what the potential threats associated with having those vessels in a maritime domain are. Challenges include covering immense areas with many targets, and remote and hard-to-monitor areas on high seas and within EEZs. Space-based satellite technology is another tool in the MCS toolbox that can be an effective complement to traditional surveillance operations. Addressing the problem as efficiently and cost-effectively as possible depends on combining information from different sources, selecting the right tools and cueing assets to particular locations.

93. Mr Hurley next explained differences between types of satellite technologies, including satellite AIS and new satellite synthetic aperture radar imaging. The International Maritime Organization (IMO) originally required transmission of AIS messages to prevent collisions. An AIS message, including location, identification, flag and cargo, is receivable by sensors on land or in the air, and today there is also frequent coverage using space-based AIS. There has been an issue with veracity of AIS data because of spoofing of AIS signals, which could be accidental due to maintenance issues but could also indicate deceptive operations. Another issue is monitoring high-density areas such as around Southeast Asia.

94. For Costa Rica, satellite AIS shows its entire Pacific EEZ almost hourly from data from eight satellites as compared with traditional land-based AIS that only has a 30–40 nautical mile view offshore. Depending on the time of day, there may be four or five satellites passing overhead hourly, and more are planned to be launched in 2014. Turning to satellite imaging radar, Mr Hurley noted that radar simply picks up metal on water but it has broad coverage and can penetrate clouds and operate under any weather conditions. Satellite imaging radar also has the advantage of being able to identify both cooperative and non-cooperative vessels, even "dark targets" that are neither emitting signals nor using electricity. The primary satellite of MDA, RADARSAT-2, is a well-used Canadian asset in many parts of the world. The company is currently building another that will be launched four years from now.

95. The company offers a subscription service via an easy-to-use Internet portal called Bluehawk, which permits subscribers to obtain space-based information as needed based on Maritime Mobile Service Identity or IMO number. Mr Hurley provided an example of a series of searches he had made over time for a specific vessel that was in the news. His queries showed it was located off the coast of Dakar twice in between going dark for a period. Bluehawk also contains historical tracks of vessels and predicted routes. It can help locate non-reporting targets that might be engaged in illegal activities, and it can reveal incorrect self-reporting by ships.

96. Finally, Mr Hurley demonstrated how the fusion of satellite AIS and satellite radar imaging can be used to identify potential transshipment operations. In his example, the AIS signal of one vessel showed it moving then stopping and drifting for about 12 hours, broadcasting AIS the whole time. After this period, a radar satellite image revealed the presence of another vessel nearby that was not broadcasting AIS. This suggests that the satellite just missed capturing an image of transshipment in progress. A Bluehawk subscription, which requires no hardware, just a secure Internet connection, costs about USD100 000 per month.

Discussion, comments, questions and answers

97. The presenters answered questions related to the following topics:

- The citations for some of the figures cited, including the dollar value estimate of MCS and the estimate of financial costs of IUU fishing worldwide.

- How the AIS could be more useful to small-scale fisheries, and how the AIS might be partially incorporated.
- The definition of “real time” coverage.
- Using real-time and non-real-time MCS data and satellite imagery as evidence in court.

SESSION 4: NEW MCS TECHNOLOGIES AND METHODOLOGIES

Facilitator: Jacques Verborgh, Acting Head of Unit, Fisheries Conservation and Control, Atlantic and Outermost Regions, Directorate General for Maritime Affairs and Fisheries, European Commission

Presentations:

> **Smart and Cost-effective MCS**, Glen Salmon, National Compliance Operations Unit, Australian Fisheries Management Authority
>
> **Full Catch Documentation Based E-logbook and E-monitoring**, Søren Palle Jensen, Senior Fisheries Officer, Danish Agrifish Agency
>
> **E-monitoring**, Maria Jose Pria, EM Project Manager, Archipelago Marine Research
>
> **Use of UAVs as an MCS Tool**, Thomas Snitch, Distinguished Senior Professor, Institute for Advanced Computer Studies, University of Maryland

98. Session 4 commenced in the late morning of 18 February 2014, facilitated by Jacques Verborgh, Acting Head of Unit, Fisheries Conservation and Control, Atlantic and Outermost Regions, Directorate General for Maritime Affairs and Fisheries, European Commission. This session was the second of two sessions focused on cost-effective fisheries enforcement.

Smart and Cost-effective MCS

99. The first presentation of this session was made by Glen Salmon, National Compliance Operations Unit, Australian Fisheries Management Authority (AFMA), who discussed how Australia's "Show Cause" model for vessels fishing in closed areas encourages voluntary compliance and shifts the burden to industry.

100. Using an example of sea lion colony closures, Mr Salmon explained that AFMA traditionally identified suspected closure breaches using VMS-based monthly reports. Depending on the severity of the breach, sanctions could include official cautions, infringement notices that included monetary fines, or prosecutions. This system was inadequate for multiple reasons. First, the technology and the closure report process were driving the agenda and diverting resources from high-risk areas, as evidenced by continuing high mortality of dolphins and sea lions. Sanctioning was problematic, because, if fines were not paid, this could lead to debt recovery situations. As for prosecutions, they are time-consuming and expensive and, therefore, suitable only for extreme cases. Realizing that its catch-and-punish approach was not working, AFMA decided to develop a voluntary compliance system.

101. The Show Cause model was developed by a compliance risk management team tasked with finding effective solutions that would encourage voluntary compliance. The team was required to have cross-agency representation in order to inject fresh perspectives from outside the compliance sphere. The resulting Show Cause model has four principle aims: (i) to make operators aware that VMS analysis is performed regularly; (ii) to place the burden on the operator to explain suspect activity; (iii) to remind the operator that unsatisfactory explanations may result in enforcement action; and (iv) to demonstrate to operators that non-compliance with closures is likely to be detected. On a monthly basis, all closure incursions are reviewed and categorized as lawful, unexplained and suspect/serious. Show Cause letters are sent to concession holders whose vessels have made unexplained incursions into closures. These letters, which enclose snapshots of their entries and exits, demand explanations

and outline potential enforcement actions. The burden of explaining questionable behaviour is thereby shifted to concession holders, and the opportunity to avoid sanctions incentivizes their cooperation.

102. Although Mr Salmon spoke of the Show Cause model in the context of closure breaches, he suggested that this model could apply in other contexts, in any situation where there were persistent low-level type of offences. In Australia, the industry reaction was immediate, including queries from many lawyers. At first, AFMA was not very interested in the substance of the excuses. Rather, it was sending a shot across the bows, letting the industry know it was watching. Three years later, the number of suspected breaches has decreased by 88 percent. Feedback on the process has been positive from concession holders and important industry bodies. Some side-effects, such as clarification of boundary locations, have been helpful to both sides.

103. To conclude, Mr Salmon reviewed some of his earlier key points, including: (i) the system should not drive the agenda; (ii) improving the process, not just the technology, can produce efficiency gains; (iii) multidisciplinary teams can inspire innovative thinking; and (iv) the burden should be put where it belongs to explain actions. The Show Cause model succeeded in putting responsibility back on industry and encouraging voluntary compliance.

Full Catch Documentation Based E-logbook and E-monitoring

104. The second presentation of Session 4 focused on e-logbook and e-monitoring and was given by Søren Palle Jensen, Senior Fisheries Officer, Danish AgriFish Agency. Since 2008, the Danish AgriFish Agency and the National Institute of Aquatic Resources have conducted trials to test the reliability of electronic monitoring (EM) as a tool for fully documenting fisheries, accounting for catch, and collecting data for impact analysis. The philosophy behind implementation of e-logbook and e-monitoring tools is to put the burden of proof on the fishing industry to prove what they are actually catching, not only what they are landing (including catches discarded). Skippers should be obliged to record all catch in e-logbooks and to be able to support entries in the logbook with full documentation. Assessment of logbook data can then be done by independent observers on board or through EM tools.

105. The technical set-up and implementation of the EM equipment on the vessel will vary by type of vessel. To illustrate, Mr Jensen showed footage from a vessel on which camera placement had been designed specifically to capture the working deck and the gear storage area. The skipper is responsible for maintaining a clear view daily or as necessary, but this does not always happen. Thus, emphasizing this maintenance obligation to the skipper is important.

106. Graphically, data from e-logs render only straight lines between start and end positions recorded in the logbooks, but, by overlaying VMS data, the route between these positions becomes more visible, which can be compared with the positions recorded in the logbook. Adding sensor data gives an even clearer picture of where and when fishing is occurring. For estimates of discards of cod, both fishers and independent EM video were confirming large amounts of discards in the North Sea and Skagerrak. In Denmark, discarding cod is allowed after weighing, a practice that will cease all together when legislation imposing a discard ban is passed. On a voluntary basis, some of the fishers in the region entered into the trial for remote EM in 2010–12. From the day they entered, the agency found that trial vessels were landing much higher numbers of cod size 5 (the smallest size category), indicating that non-trial vessels were catching more cod size 5 than they actually landed and evidently discarding the less valuable size. Other insights gained from the trial included that discards from Skagerrak trawlers were higher than other types of vessels.

107. Mr Jensen listed the following as lessons learned from the Danish e-monitoring trials:

- Remote EM system data (sensor data and video footage) can be used to verify skipper logbook recordings.
- They can also ensure reliable management of the fisheries and provide high quality data for the scientific advisory work.
- In a landing obligation management system (discard ban), a remote EM system can be used to document whether discarding takes place or not.
- Remote EM can ensure reliability of the discard ban.
- EM can also be used to manage special marine habitat areas and NATURE2000 sites.
- A large number of rules can be repealed and processes simplified as a result of shifting the burden of proof with respect to the management system back to the industry.
- A sanction system for not complying with the rules has to be in place.
- The cost for using a remote EM is cheap compared with the use of observers on board fishing vessels.

108. Mr Jensen also displayed depictions of the sensor system used by the mussel dredgers in the agency's latest trial, and of the software used to analyse fishing inside marine protected areas. As a final remark, he said that while fishers were not happy with EM at first, they adjusted over time, even acknowledging certain benefits.

E-monitoring

109. As the third presenter in the fourth session, Maria Jose Pria, Electronic Monitoring Project Manager, Archipelago Marine Research, focused primarily on EM but noted that it is often implemented together with other tools. She noted also that EM programme elements are not technology-specific and can apply in different contexts.

110. The three basic steps of an EM programme are collection, analysis and use of data. To ensure reliability of data, the EM system should be independent and set to work automatically, requiring nothing more than a power source once installed. If there is a power interruption, the reason why should by recorded. Data can be encrypted and hardware itself can be equipped with a tamper-proof device to ensure it has not been removed. Finally, there is an option for a "heartbeat" satellite signal that can be sent to shore, which shows that a system has been functioning in the last hour and other information. Onboard technology in a system such as this works best when the onus is placed on fishers to ensure it is working correctly and to address any issues. After EM data are collected at sea, they are uploaded to a hard drive and taken to a laboratory for analysis using land-based software. When carrying data to an office or laboratory, the chain of custody needs to be considered.

111. Ms Pria displayed a photograph taken on a mid-water trawler, which was an older example of EM. While the camera set-up provided a view for verification of retention of catch versus discard, measurements and weighing would have had to be done at landings. To be able to see if discard is a legal size requires more angles and also more interaction with the skipper, whose protocols are important to adequate analysis of these data. Thus, there must be a clear understanding of the operator's obligation, because different software has different requirements, and different vessels have different nuances. She then showed some more-recent footage containing sharper imagery and providing a close-up view of what was happening on board the vessel.

112. As the complexity of EM increases, Archipelago's software has allowed it to analyse data in an efficient manner by first quickly assessing whether data seem complete and then looking into

precise locations and timing. Archipelago has been able to provide effort location and time as well as gear deployment. One of its projects is a monitoring programme at a fishery in British Columbia where only 200 trips per year are allowed. As to information about catch, Archipelago's analyses can provide a range of information from the basic presence or absence of discard to discard size, catch handling, harm to catch that is returned, and protected species interactions. All of this information can be reviewed against information provided by the captain. With respect to use of data, two prevalent themes highlighted by Ms Pria were behaviour modification, which often follows high levels of coverage, and focusing effort. To focus effort on high-risk areas, the heartbeat signal is useful as it allows for location sensing and prompt response actions by compliance agencies.

113. Based on Archipelago's EM since 1999, some clients in Canada, Australia and five other countries, as well as high seas tuna fisheries, have been able to implement administrative penalties or incorporate deterrents and incentives into processes. They have thereby been able to effectively alter behaviour using non-judicial means. Formal cautions and infraction notices have also been issued, as well as fines and bonds based on EM data.

114. To close, Ms Pria shared what she called the "EM Iceberg", the outline of an iceberg with only the tip breaking the surface of the water. Inscribed on the tip was "equipment" to reflect the high visibility of equipment as a component of EM. Below the waterline, the other about 95 percent of the iceberg contained issues such as field support, onboard methods, stakeholder engagement and data analysis systems. The EM iceberg serves as a reminder that there are layers of aspects to EM. The costs lie in both the technology and also the services, the people who operate systems and analyse data.

The Use of UAVs as an MCS Tool

115. Thomas Snitch, Distinguished Senior Professor, Institute for Advanced Computer Studies, University of Maryland (UMD), the United States of America, delivered the final presentation of the fourth session, which concerned a project at UMD on the possibility of utilizing unmanned aerial vehicles (UAVs) for fisheries monitoring. This work is in the developmental phase. Thus far, only a limited amount of monitoring has been performed in marine environments, with much of it focused on piracy. However, UAV monitoring has a proven track record for revealing improvised explosive devices in war zones, rhino and elephant poaching in Africa and Southeast Asia, and other activities such as illegal logging and drug and human trafficking. Underlying the choice of flight path and deployment location of UAVs are complex mathematical processes incorporating many factors. As UAV projects progress, behavioural patterns of targets emerge and improve these calculations. Maritime uses of UAVs could include monitoring of vessels for illegal activity, search and rescue, coastal monitoring, accident investigation, tracking of oil spills, and a range of other imaginable applications.

116. Mr Snitch identified the following advantages of UAVs:

- precise geotagging of vessels and boundaries;
- live high-definition video of area under surveillance;
- video that can be used as evidence in criminal prosecutions;
- both day and night infrared capabilities with very high resolution;
- flights with capability to loiter over a vessel for up to six hours depending on launch site;
- powered by batteries that charge in vehicle, which is silent;
- capability to launch and land on vessel or land by hand launch, small catapult or bungee.

117. Mr Snitch explained that the model being developed by UMD has greatly increased predictive capabilities of UAVs by re-creating how certain actors moved (for example, animals, poachers and rangers) and designing algorithms to predict where those actors would be at given times. In essence, the models mathematically re-create how everything moves in space and time. The model's effectiveness was demonstrated at Olifants West, which is located due west of Kruger National Reserve, where UAVs were flown in May and June 2013. For their first night-time trial in Africa, the model determined the flight path for the UAV to the northeast sector where rhinos were likely to be. Finding a rhino mother and calf there, they decided to keep the UAV loitering. During this time, four individuals drove up and feigned car trouble, and they were quickly apprehended on suspicion of poaching. This result showed clear proof of concept.

118. The UMD team is seeking to develop appropriate UAV technologies to combat illegal fishing. This entails always ensuring that the technologies are exportable and importable and compliant with host-country regulations. In addition, technology should always be affordable, easy to maintain and simple to use, i.e. not requiring extensive training.

119. The Talon 120 and 240 are two UAVs being tested. They will be programmed based on algorithms for possible infractions and then will be sent out to rangers. Flights of these UAVs are almost fully autonomous, removing decision-making from the field. The same approach would be applied to maritime MCS. To help with reviewing feeds from UAVs, software has been developed to identify objects on the monitoring screen, as it can be difficult to review infrared activity for six hours.

120. Mr Snitch concluded with a review of lessons learned and reasons why UAVs could be a useful MCS tool. Oceanic territory is too great to cover in its entirety, and the mathematical model can help narrow down the territory to be monitored. Behaviours can be anticipated, and, once people know this, behaviour will be modified. It could change for the better, but often it will adapt or shift. To predict how behaviour will shift, and to stay one step ahead of the illegal activity, input from locals on the most effective uses of UAVs is valuable. The model itself also learns from each flight. The team at UMD plans to start field trials soon, and Mr Snitch invited representatives of any governments or agencies interested in participating to contact him.

Discussion, comments, questions and answers

121. Questions posed to the presenters included the following topics:

- Expenses of EM systems, including costs of the processes under the tip of the "EM iceberg".
- The capabilities of EM devices to automatically identify species and gear types and amount of time it takes to review EM footage.
- Types of information that would need to be collected and assessed to commence building a fishing UAV model.
- Applicability of the models and programmes discussed to small-scale fisheries.
- Distances and weather conditions under which UAVs can fly.
- Guiding electronic monitoring and other technology with well-designed laws and policies.

SESSION 5: TACKLING TRANSNATIONAL FISHING CRIME

Facilitator: Todd Dubois, Assistant Director, NOAA Office of Law Enforcement

Presentations:

> **Using Open-source Intelligence to Counter IUU Fishing: Exploration of Open-source Resources and Networks of MCS Practitioners**, David Pearl, Foreign Affairs Specialist, NOAA Fisheries Office of International Affairs
>
> **Container Control Programme**, Ian Munro, Law Enforcement Advisor, Anti-organised crime and illicit drug trafficking, Implementation and Support Section, UNODC
>
> **Assessing Organized Crime in Fisheries**, Theodore Leggett, Studies and Threat Analysis Section, United Nations Office on Drugs and Crime
>
> **Understanding the U.S. Executive Order on Wildlife Trafficking**, Stuart Cory, Special Agent, NOAA Office of Law Enforcement
>
> **Intelligence Work – Needs in Light of Capacity Building**, Tor Glistrup, INTERPOL Fisheries Crime Working Group and Norwegian Ministry of Fisheries
>
> **INTERPOL Efforts to Combat Fisheries Crime**, Bradley Soule, INTERPOL Environmental Crime Programme

122. The Tuesday afternoon session comprised six presentations on the theme of tackling transnational fishing crime and was facilitated by Todd Dubois, Assistant Director, Office of Law Enforcement, NOAA, the United States of America.

Using Open-source Intelligence to Counter IUU Fishing: Exploration of Open-source Resources and Networks of MCS Practitioners

123. David Pearl, Foreign Affairs Specialist, Office of International Affairs, NOAA, the United States of America, made the first presentation of the fifth session of the 4th GFETW on the topic open-source intelligence (OSINT) that can be used by MCS practitioners to counter IUU fishing. His presentation, which included many website addresses and other resources, is available on the website of the International MCS Network (www.imcsnet.org/4th-gfetw-presentations/).

124. In the light of the large volume of pertinent OSINT available, it can be difficult to select useful information in the most efficient manner. OSINT includes a wide variety of information and sources ranging from media, academia and web-based communities to public reports and other government data to geospatial tools and analyses. Thus, Mr Pearl suggested an approach to targeted data collection in the context of countering IUU, referencing some of the sources he tends to frequent. His approach entails dividing the topic of countering IUU into four categories or spheres of influence: vessel-specific, supply chain, resource management and market-related. OSINT can inform all four spheres and is particularly helpful with respect to vessel movements, owners and operators, and supply chain links.

125. With respect to tracking vessel movements via the AIS, Mr Pearl observed that vessels engaged in illegal activities would keep their transponders on. Fishing vessels are increasingly using the AIS. Some small canoes and similar vessels have even been equipped with experimental

transponders for safety reasons. Key types of AIS data include vessel name, IMO number, Maritime Mobile Service Identity number, and vessel call sign, among others.

126. Mr Pearl commented that many of the 4th GFETW participants were probably familiar with www.MarineTraffic.com, a free service that has evolved significantly. It is highly transparent; if you give information, you receive information. MarineTraffic is beginning to offer some advanced services for a fee. Mr Pearl has found the mobile application to be useful. It is important to bear in mind that there are multiple sources of AIS, including land-based. If something cannot be found on MarineTraffic, other public sources such as www.VesselFinder.com can be consulted.

127. Another source is the website of the Maritime Safety and Security Information System (available at https://mssis.volpe.dot.gov/), under which 73 countries are sharing multiple layers of AIS and other data. For participants that are unsure whether their countries are involved, participation may be occurring through their countries' transport authorities or militaries. They can consult the website or write to Henry.Wychorski@dot.gov.

128. Subscription services provide information such as live and satellite-based AIS sources, but these can be expensive. However, they may be worth it in some cases, and some may offer free accounts in exchange for provision of AIS data, for example, Lloyd's List Intelligence and IHS Fairplay AISLive.

129. In researching a vessel, key pieces of information can be entered into free searches on ITU Particulars of Ships stations, Inmarsat Ships Directory, Equasis, FAO, RFMO records, and even Google. However, beneficial ownership of vessels can be difficult to discern, even from paid services. At NOAA, Sea-web and Lloyd's subscription services are used, and both provide some basic information about registered owners or operators, but it is sometimes old or out of date. Vessel ownership arrangements are designed with liability prevention in mind and typically contain multiple layers of ownership to shield the beneficial owner.

130. Flag States may control documents that can reveal useful details about a vessel's ownership and other issues. For example, Panamanian vessel registration requires provision of an owner's name and address as well as fee collection and tax information. Therefore, obtaining cooperation from a flag State can be valuable for an investigative agency. Mr Pearl also provided a list of examples of maritime documentation, included in his presentation materials, accessible at www.imcsnet.org/4th-gfetw-presentations/.

131. Persons or companies to whom vessel information can be linked are best searched in Google or other comprehensive search engines. Software such as i2 Analyst's Notebook can aid in configuration of information in easily digestible frameworks. Linking people to the supply chain requires searching on the commercial side, including researching companies and pulling codes and other information from bills of lading. These codes can provide ideas of which containers and vessels should be further scrutinized.

132. Networking platforms can also be advantageous for intelligence officers. The International MCS Network is one such platform. On LinkedIn, there is a "combating IUU" group created by Mr Pearl, which he encouraged participants to join and publicize. The United States Department of Defense has also created a network on LinkedIn, which people who do not usually have access to its resources can join. Joining that network could lead to an offer of help, for example, with a training exercise or similar assistance.

133. Countering IUU fishing through OSINT is dependent on a functioning intelligence cycle with information flowing through human planners to electronic processors to decision-makers and law enforcement in a loop, with networking between all levels with continuous feedback into the cycle.

Container Control Programme

134. The second presentation was given by Ian Munro, Law Enforcement Advisor, Anti-organised Crime and Illicit Drug Trafficking, Implementation and Support Section, UNODC.

135. The UNODC–World Customs Organization (WCO) initiative is focused on identifying illicit activities in the global container trade, and it is potentially another tool for combating IUU fishing. In 2012, there were 500 million container movements, less than 2 percent of which were inspected. On the whole, about 95 percent of container trade is legitimate, while 2–3 percent is attempting to avoid a regulation or tax, and 1.5–2 percent is completely illicit. In order to find this 1.5–2 percent, the UNODC programme employs an integrated border management strategy. Illegal container companies are sophisticated and usually have new technology, whereas government workers are under-resourced, technology-starved and often working in stovepipes. Some illegal behaviour is easier to detect when government offices break out of silos and share information. For example, companies sometimes lie to one type of regulator but provide accurate information to another.

136. Under this initiative, there is a Port Control Unit, comprising customs, national police, specialized law enforcement and other agencies. The challenge in this environment is not to create an obstruction to flow of trade, so customs leads the unit, because this agency best understands international trade. However, customs agents' roles might be confined, so law enforcement agencies with broader powers and access to different information are also brought in. Other special enforcement agencies may also have interests in the illicit containers, so they are also added to the unit.

137. The UNODC–WCO programme is located in 17 countries, all of which host more than one port, including one dry port (in Pakistan). Funding for 32 other countries has been secured. The very first site in Ecuador is still going strong, seizing significant amounts of drugs, work that is instilling confidence in donors.

138. The key to inspecting bills of lading is to know what anomalies to look for. The people with whom the UNODC works all have at least five years of experience. Sometimes, software is used to compute risk assessments, but results improve when the expertise of people from different agencies is harnessed. On its face, a bill of lading might not reveal illegal activities, but it can provide experts with an idea of when to delve deeper, and then the case can be made for further inspection.

139. Results for the period from March 2006 to December 2012 have been impressive. Illicit cargo that was discovered consisted primarily of illegal drugs, but mislabelled fish and other wildlife have also been seized. Other types of illegal cargo and contraband have also been found, such as stolen cars, counterfeit medicines, toxic waste and weapons.

140. The UNODC has been able to provide increasingly sophisticated training, including a border risk-targeting initiative run by experts from a number of participating intergovernmental organizations. The International MCS Network may be able to assist with training opportunities. The WCO provides a platform for communication that is secure and encrypted called Container-Comm. INTERPOL also provides its members with a similar platform, if they request it. The Cargo Targeting System aims to obtain manifest and commercial information that the teams can use for targeting. The programme also

possesses some high-tech technical equipment, but, fundamentally, success depends on the expertise of the team members.

Assessing Organized Crime in Fisheries

141. Theodore Leggett, Lead Researcher for Transnational Organized Crime, Studies and Threat Analysis Section, UNODC, joined the Workshop remotely via Skype from UNODC headquarters in Vienna to make a presentation about organized crime.

142. The UNODC is conducting a global study of the illicit side of many licit markets, one of which is fish (and three others including antiquities) with the hope that lessons learned from each of these can inform the others. Many aspects of MCS are universal. Mr Leggett's research has recently focused on stolen fish from national waters, which can hurt some of the poorest most-vulnerable communities that lack capacity to fight this. The UNODC is focusing on the "I" in IUU, and it is seeking all available data regarding who is taking fish and how, which fish are being taken and their values. Three actions being undertaken are remote sensing, building an incident database, and reconciliation of data. In addition, the UNODC hopes to be able to extract useful data from licences and uncover information about vessel owners. As all these pixels are assembled, the resolution of the bigger picture should improve. The last strategic action is reconciling amounts of fish taken with amounts exported and consumed locally.

143. The UNODC team is undertaking case studies, with the first in the West Africa region, which has been singled out by experts as a hot spot. Regions for the additional case studies have not yet been identified. The UNODC may be able to look into problems in other areas where sufficient amounts of data are available for analysis.

Understanding the United States Executive Order on Combating Wildlife Trafficking

144. Next, Stuart Cory, Special Agent, Office of Law Enforcement, NOAA, the United States of America, made a presentation explaining the United States Executive Order on Combating Wildlife Trafficking and the associated presidential task force and working groups.

145. Mr Cory first provided background related to the executive order. Soon after discussing skyrocketing deaths of rhinos and elephants with African governments, the then United States Secretary of State, Hillary Clinton, attended an event about wildlife tracking and conservation at the World Bank. This was the first time the issue of wildlife trafficking had received such high-level attention. The task force coalesced a few months later. United States President Barack Obama pledged USD10 million, part of which was allocated to combating poaching in Africa. An advisory council was also formed, and, in February 2014, President Obama signed a National Strategy for Combating Wildlife Trafficking. As the genesis of the order was terrestrial in base, NOAA worked to ensure that trafficking of marine species was included.

146. The presidential task force, which derives from the original executive order, pulls together more than a dozen agencies and offices, many of which had scant experience with wildlife trafficking before this. The task force was given only 180 days – concurrent with a government shutdown – to prepare the national strategy. In the end, three working groups were established on the themes of investigation and interdiction, enforcement and prosecution, and international coordination and diplomacy.

147. Of the three working groups, the investigation working group is intended to support antipoaching activities, to provide strategic advice and technical assistance for foreign governments,

and to support and participate in regional law enforcement networks. The enforcement working group will aim to develop effective legal enforcement mechanisms, to provide technical assistance to foreign nations supporting prosecutions, and to expand the use of transnational organized crime prosecution techniques and related legal and investigative tools. Prosecutors and counsels from various agencies will cooperate with this working group.

148. The third working group is the international coordination and diplomacy working group. Its responsibilities include consulting with other nations that aid enforcement, identifying priorities for prevention and conservation funding, and developing strategies to reduce consumer demand for protective species, including by raising public awareness. With respect to reducing demand for fish, the fact that the United States of America is a major importer of fish as food must be taken into account. Strategies for fish would be different from those used for elephant or rhinoceros products, which are not eaten.

149. Based on this rapid progress and the continued high-level support for combating wildlife trafficking, Mr Cory saw positive implications for the work of the International MCS Network and other international groups. Advantages for MCS practitioners may include better access to United States government resources and better coordination on global operational projects, as well opportunities to connect on global training issues and bringing those to bear on training and capacity building.

Intelligence Work – Needs in Light of Capacity Building

150. Tor Glistrup, INTERPOL Fisheries Crime Working Group and Directorate of Fisheries, Norway, made the third presentation of the session, which focused on intelligence needs in light of capacity building. Mr Glistrup bookended his presentation with the observation: “it’s all about the money”, which would tend to describe the root cause of much IUU fishing. However, for Mr Glistrup’s purposes, the reference to money was meant to serve as a reminder that all fisheries enforcement and intelligence efforts should include tax and customs services.

151. Mr Glistrup shared an example of success achieved by Norway to stop cod fraud in the Barents Sea. In this regard, what was praised as a “business idea” was in fact the result of ordinary intelligence work. The long-running Norwegian intelligence operation was based on standard MCS activities, such as document collection by the coast guard on vessels, registration and analysis at the Directorate of Fisheries, and obtaining information from the European Union (Member Organization) on landings. The outcomes included detection and partial seizure of value of 20 000 tonnes of cod in 53 cases en route to the Russian Federation, deactivation of 26 vessels, and the bankruptcy of several companies.

152. As the world population approaches 9 billion at mid-century, fisheries management and fighting fisheries crime will be increasingly important as matters of global food security. Those responsible for managing and protecting strategic fisheries resources for the future face a number of issues. The first issue is surveillance capacity. For Norway, AIS capacity is ample, yet it is still a challenge to monitor the many vessels in its waters, especially reefers. A starting point for surveillance is to understand and recognize normal activity, which can bring the IUU fishing into relief. Fisheries agencies must decide how and whether to expend the effort to monitor large cooperating fleets, some of which are huge catch machines assisted by production and reefer vessels. The second issue is ability with respect to AIS sensors, in particular ability to analyse and identify vessels sending deceptive reports. Another issue is vessel activity detection, which necessitates skilled operators and dedicated

analysts. There are also the issues of technology, streaming of VMS and AIS data, and employing systems to run analyses and produce reports automatically.

153. Essential to any intelligence plan are the key components of collection, registration and analysis. The relative roles of different agencies, organizations, businesses and INTERPOL's Fisheries Crimes Working Group – the new tool in the toolbox – must be defined. INTERPOL should focus its operations on hardcore criminals. More personnel need to be moved to intelligence, and efforts on analyses must be coordinated, especially with tax and customs agencies.

154. Mr Glistrup recommended that each agency should have one full-time intelligence operator to focus on the international aspects and give these issues priority. These operators could constitute an international task force and could exchange information at meetings. This would increase capacity and spur development in this area. Norway has taken some steps in this direction, as has Canada, which plans to have 10 percent of its staff working on intelligence by 2017. More capacity to do analysis is the key to increasing knowledge and intelligence about vessels, including ownership. Analysis is crucial with respect to reefers and other support vessels, about which there are often very few data.

155. Another piece of advice Mr Glistrup imparted is that agencies need to make allies of businesses and develop a network of informants, which is the cheapest way to gather information. The better the agencies come to know the informants, the better they can evaluate information from those sources to produce intelligence. To attract businesses to cooperate, participation in the network must be regarded as appropriate and important work. Honest business people should be natural allies for the agencies, as they are probably facing their own challenges and impacts from criminal activity.

156. A suggestion for the next step for the International MCS Network could be to move from sharing information to creating intelligence together. Mr Glistrup said that he saw the potential for progress in that direction. In sum, intelligence work is the basic method and foundation for combating crime in fisheries. The key is gathering the operatives together and assigning them specific tasks. If these operatives were given the proper frames for intelligence work, it would surely produce results. It is important to know who is doing the intelligence work on IUU among the agencies, RFMOs and NGOs worldwide. This raises the question of how these actors can be coordinated and whether an international analysis team should be created. Such a team could respond to specific needs and requests and could be made up of personnel from agencies. Finally, Mr Glistrup reiterated the need to bring tax and customs agencies on board, as the bottom line for companies is the money, not fish – the money drives the fish production.

INTERPOL Efforts to Combat Fisheries Crime

157. Mr Bradley Soule, Criminal Intelligence Officer, INTERPOL Environmental Security Sub-directorate, spoke about Project Scale, which is related to fisheries crime. The INTERPOL Fisheries Crime Working Group deals with many of the same issues as the International MCS Network, which poses opportunities for collaboration, including at the GFETWs. Mr Soule therefore expressed his pleasure in participating in the 4th GFETW and also mentioned the attendance of International MCS Network Chair Cephas Ralph at the second meeting of the INTERPOL Fisheries Crime Working Group in Nairobi in November 2013. He observed that all countries had the same problem of "bad actors" using their borders against them.

158. Mr Soule provided an overview of INTERPOL, explaining that the General Secretariat has no jurisdictional powers inside countries. Instead, all INTERPOL countries have their own national central bureaus (NCBs) of varying sizes. For example, at the NCB in Washington, DC, there are about

150 people working in 24-hour shifts; in Costa Rica, the NCB is much smaller. The common trait of all NCBs is that they are considered trustworthy contact points for the General Secretariat. They may not be experts on every topic but they can always connect to the appropriate authority. INTERPOL was founded on the idea of tracking people across borders and will celebrate its one hundredth anniversary in late 2014.

159. Project Scale and INTERPOL's Fisheries Crime Working Group are extensions of work it has been doing on other international crime, including database maintenance, data exchange and its notice system, under which it releases colour-coded notices. These are not international arrest warrants, but, rather, red notices are published at the requests of member countries seeking information or extradition. Headquartered in Lyon, France, INTERPOL has four official languages: English, Spanish, French and Arabic.

160. Through Project Scale, INTERPOL is trying to make detecting, suppressing and combating fisheries crime a global effort. It has four objectives, the first of which is to raise awareness of fisheries crimes and their consequences. Its second objective is to establish national environmental security task forces (NESTs) to ensure institutionalized cooperation between national law enforcement agencies and international partners. The theory underlying NESTs is that countries will bring together stakeholders so that they can have open and frank discussions about available resources. Having face-to-face meetings helps to establish trust and confidence to share information and intelligence. The third objective of Project Scale is to assess the needs of vulnerable countries, and the fourth is to conduct regional and international operations to suppress criminal activity, disrupt trafficking routes, and ensure the enforcement of national legislation. INTERPOL does not create rules or require participation. The fact that countries define fisheries crime in different ways is immaterial to INTERPOL missions, which are intended to help facilitate and assist countries in their own investigations of violations. However, there are also a number of activities that are considered crimes in almost any jurisdiction, such as using false government documents and intentionally falsifying customs forms. These are two examples of excellent opportunities for multilateral collaboration. INTERPOL can also conduct data analysis and assist countries that are just launching enforcement by providing advice on where to start and how to set priorities.

161. One of Project Scale's current activities is creating a strategic plan, a template for how INTERPOL activities can best address fisheries issues and related criminalities. It is also supporting and helping to further develop the Fisheries Crime Working Group and its respective projects, as well as creating a case study on fisheries crime in West Africa. Another of its activities is providing expert recommendations on effective laws and methods for compliance and enforcement.

162. Mr Soule presented a few examples of purple notices of modus operandi. More information is available at: www.interpol.int/INTERPOL-expertise/Notices/Purple-notices-public-versions. There have been five purple notices released by INTERPOL related to fisheries so far. At Norway's request, a purple notice was released concerning the vessel the *Snake*, which is also known as the *Octopus* and many other names. In fact, the *Snake* is infamous for having the most names and flags of any vessel many experts have ever seen. INTERPOL also released a purple notice about the *Thunder*, also known as the *Thor* and other names, in response to requests from more than one country. Many of these ships have quick-remove nameplates. The challenge is what to do when these ships come into port, as the action of docking in itself is not illegal. Resources are needed to prove illegal behaviour behind the legal actions.

163. Another modus operandi highlighted by a purple notice was a practice employed by shark fishers to circumvent Costa Rica's naturally attached fin requirement. As discovered by the Costa Rican coast guard, fishers were landing sharks' dorsal, pectoral and tail fins attached only to spinal columns. Exploitation of this loophole negated the law's purpose. As a final example, Mr Soule described two purple notices released when two vessels escaped harbour in South Africa. The notices were requested both to alert other countries and to elicit further information about the vessels.

Discussion, comments, questions and answers

164. The presenters responded to questions and comments about the following:

- Accessing INTERPOL tools at the small-scale or artisanal levels.
- Coordination of agencies with respect to container control efforts, so that specialized agencies know when relevant illegal cargo or activity is discovered.
- INTERPOL's protocol with respect to operations involving activities on the high seas.
- The tendency for government to operate in silos while commercial and criminal enterprises seem to cooperate relatively well.

FIELD TRIP

165. On Wednesday, GFETW participants were invited to join a field trip, consisting of a visit to CoopeTarcoles, an artisanal fishing cooperative located on the Central Pacific coast of Costa Rica, followed by a tour of the Tarcoles River and a guided walk through Carara National Park.

166. At CoopeTarcoles, participants were given a first-hand account of the artisanal fishing communities in Costa Rica and Central America. Upon arrival, participants were divided into small groups, each of which was guided on a tour of the facility by a local fisher. The guides showed the groups fishing lines, boats and other equipment and explained the roles within the working community. At CoopeTarcoles, a marine area of responsible fishing is maintained, which has helped marine life to recover from past overexploitation. For example, in the 1990s, shrimp had been so overharvested by large trawlers that stocks disappeared for 12 years. The shrimp fishery has since rebounded and was able to reopen in 2011. About 15 years ago, the cooperative merged with CoopeSolidar, and, today, the organization resembles a well-managed small business as much as a community cooperative. More information is available at: www.coopetarcoles.org.

167. Afterwards, GFETW participants were taken to the Hacienda Nosavar to tour the Tarcoles River in small boats. The Tarcoles River is a mangrove swamp area with high biodiversity, aquatic birds and one of the largest populations of American crocodiles. While enjoying the view and the boat ride, participants had the opportunity to network with one another. The final destination during the field trip day was to Carara National Park. As climates of the Pacific dry north meet the humid south coast, Carara National Park is a unique tropical rainforest that forms a distinct biological reserve. Participants took part in a walking tour throughout the park, viewing wildlife and vegetation.

SESSION 6: INTERNATIONAL COOPERATION

Facilitator: Terje Lobach, Directorate of Fisheries, Norway

Presentations:

> **Flag State Requirements: Guidelines on Flag State Performance**, Johann Augustyn, Chief Director Fisheries Research and Development, South Africa
>
> **Port State Control**, Fabio Hazin, Universidade Federal Rural de Pernambuco, Department of Fisheries and Aquaculture, FAO-COFI First Vice-Chair, Brazil
>
> **Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels**, Ari Gudmundsson, Fishery Industry Officer, FAO

168. The first session on Thursday, which focused on international cooperation, including the Voluntary Guidelines for Flag State Performance (VG-FSP), the Port State Measures Agreement (PSMA) of 2009, and the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, was facilitated by Terje Lobach, Directorate of Fisheries, Norway.

Flag State Requirements: Guidelines on Flag State Performance

169. The first presenter of the fifth session was Johann Augustyn, Chief Director of Fisheries Research and Development, South Africa, who spoke about flag State performance, explaining the need for guidelines, the negotiation process, content of the guidelines, and potential impacts.

170. Flag States do not control vessels fishing beyond their jurisdictions. Therefore, the burden has shifted to coastal States, port States and members of RFMOs, and this has caused them to expend considerable resources. The need for examining performances of flag States led to the proposal for a Technical Consultation at the Twenty-seventh Session of COFI, which was agreed at the Twenty-eighth Session. During this time, an expert meeting was also held in Vancouver, Canada, which made recommendations and produced a guidance document. The Technical Consultation considered this and other papers on the topics of criteria for assessing flag State performance, possible actions against flag States, roles of governments and other entities, and assistance for developing countries.

171. As Mr Augustyn explained, the Technical Consultation is a political process. The opinions of the experts are not always shared by governments, and final negotiated texts must reconcile technical advice with legal issues, alliances, histories and sensitivities. For flag State performance, some countries supported tough prescriptive guidelines, while others preferred more national control and the assurance of sovereignty. The question of who would apply sanctions was especially controversial, as was the question of application across boundaries from high seas into national waters. After consensus had been reached on these issues and other aspects such as a framework for legal support, the VG-FSP document was released.

172. The contents of the voluntary guidelines include a statement of purpose and principles and provisions on scope of application and performance assessment criteria with respect to both measures and actions of flag States. Other paragraphs pertain to: cooperation between flag and coastal States; the procedure for carrying out an assessment; encouraging compliance and deterring non-compliance; capacity development for developing States; and the role of FAO. As to geographical scope, the

compromise reached in negotiations was that the guidelines might apply to fishing activities within a flag or coastal State's areas with its permission. The scope of coverage with respect to vessels and activities is broad, including any operation in support of or preparation for fishing, even supplying of gear and supplies, but it excludes subsistence fishing.

173. Mr Augustyn referred to the assessment criteria for measures and actions of flag States as the "meat" of the guidelines. Measures considered include acceptance of relevant international law, active prevention of IUU, registration procedures, and control and enforcement regimes, among other criteria. Actions assessed include contribution to RFMOs, joint control and enforcement efforts, information exchange with other States, prevention of flag hopping (including refusal to register vessels registered with other States), and implementation of sanctions. The guidelines set forth a procedure for self-assessment and another for external assessment. Cooperation with and assistance to developing countries are important and require the following: recognizing the special requirements of States, supporting participation in high seas fisheries, and establishing a funding mechanism.

174. With respect to possible impacts and implications, Mr Augustyn said that underlying the broad and challenging agenda was the main task of identifying strong ways forward to address IUU in a concrete way. The real challenge will be encouraging countries to implement the guidelines, as they are not mandatory. If rigorously implemented, the guidelines have the potential to hinder IUU fishing, despite their voluntary nature. In the future, they may be taken up as binding obligations.

Port State Control

175. The second presentation of the sixth session was made by Fabio Hazin, Universidade Federal Rural de Pernambuco and Department of Fisheries and Aquaculture, Brazil. Mr Hazin, who currently serves as FAO-COFI First Vice-Chair, provided a detailed discussion of the Port State Measures Agreement to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA), elaborating on its key provisions.

176. The issue of port State control was originally raised in 1982 in Article 218 of the United Nations Convention on the Law of the Sea (UNCLOS), but this provision was related exclusively to pollution. A decade later, an international conference on fishing produced the Declaration of Cancun. Its paragraphs on protection of oceans mention using port State controls for sustainable use of marine resources and as part of international cooperation. This helped influence UN General Assembly Resolution 47/192, which is the basis of the 1995 UN Fish Stocks Agreement (UNFSA) relating to the conservation and management of straddling fish stocks and highly migratory fish stocks. The UNFSA contains an article on port States ("Measures taken by a port State") as does the FAO Code of Conduct for Responsible Fisheries ("Port State duties"), which was finalized that same year. The UNFSA requires port States to immediately notify flag States whenever there are reasonable grounds to suspect IUU fishing. Eighty parties, including the European Union (Member Organization), have ratified the UNFSA, which entered into force in December 2001.

177. In 2001, FAO released an International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), which contained 13 articles dealing specifically with port State measures. Subsequent consultations led to a model scheme. The community felt there was need for a stronger document, so FAO convened a meeting to produce a binding agreement in 2007, which was followed by expert and technical consultations. This process culminated in approval of the PSMA in 2009 under Article 14 of the FAO Constitution. Ensuring that the PSMA was adopted as an Article 14 agreement was difficult.

178. Mr Hazin next explained the structure of the PSMA provision by provision, beginning with the Preamble, which makes control the primary responsibility of flag States but acknowledges that port State measures are more cost-effective and safer. Article 1 defines fishing and fishing-related activities in a broad manner. Article 3 limits application of the agreement to foreign vessels, and Article 4 defines the relationship of the PSMA with other international law and instruments. An important aspect of Article 4 is that it reinforces the port State's sovereign authority to deny a vessel entry into port. Article 5 covers cooperation and exchange of information, which is an important tool.

179. Part 2 of the PSMA (Articles 7–10) pertains to entry into port, including rules about designating which ports are participating and publicizing designations. Article 8 requires vessels to obtain permission from port States "sufficiently in advance" for entry. Article 9 provides that port States must notify flag States and any relevant RFMOs of denials. If a vessel has been found to have engaged in IUU fishing, the port State cannot allow it to use the port but may let it enter in order to inspect it. The major exception to the freedom and/or obligation to deny entry is cases of distress or force majeure, which is covered by Article 10. Part 3, consisting of Article 11, pertains to conditions for denying use of ports for different activities.

180. Part 4 (Articles 12–19) encompasses inspections and follow-up actions, including the level of inspection required to ensure proper implementation of the agreement, conduct of inspections, and transmittal. A method for electronic exchange is described in Article 16, which corresponds to Annex D of the agreement, which describes a mechanism that could potentially communicate with the Global Record of Fishing Vessels. Article 17 defines training, in conjunction with Annex E, which contains minimum standards. Article 18 prescribes actions to follow inspections, particularly in cases of IUU, and Article 19 covers information on recourses that port States must make available to vessels and flag States.

181. Part 5 of the PSMA contains Article 20 concerning the role of flag States, and Part 6, which consists of Article 21, recognizes the special requirements of developing States and including needs for assistance to implement the PSMA. It sets forth the goals of such assistance and also establishes a funding mechanism for developing States that will become active when the PSMA comes into effect. Entry into force is governed by Article 29 and requires 25 ratifications. Nine States had ratified the PSMA as the time of the Workshop, which is only one-third of the necessary number. However, Mr Hazin remarked that many RFMOs had adopted port State measures, including all tuna RFMOs and the Western and Central Pacific Fisheries Commission (WCPFC).

182. Since 2012, FAO has conducted regional workshops aiming to increase awareness and encourage States to ratify the PSMA as well as to facilitate information exchange and support other national and regional efforts to combat IUU fishing.

Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels

183. Ari Gudmundsson, Fishery Industry Officer, Fishing Operations and Technology Branch, FAO made the third presentation of the morning, to present the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels (Global Record), including the role played by the Unique Vessel Identifier (UVI).

184. The Global Record is one of the latest tools that that has been developed by the international community to combat IUU fishing. It complements other international initiatives, instruments and tools, such as the IPOA-IUU, PSMA, VG-FSP and the IUU Regulation of the European Union (Member Organization). In particular, it creates strong synergies with the PSMA and the VG-FSP. The major strength of the Global Record is the ability to provide information on the identification of

fishing vessels and fishing-related activities. It serves as a central repository of vessel-related information that can be used to identify the vessel, describe its capacity and capability, identify its owners and associated interest, identify its fishing authorizations, provide a history of non-compliance, etc.

185. The Global Record Programme is composed of three major programme components: promotion, capacity development and system development. Mr Gudmundsson focused on the system development aspect and implementation of the Global Record, noting that his colleague from FAO, Alicia Mosteiro, would make a presentation on the capacity development component later in the week, in a specific session.

186. The Global Record is not only about fishing vessels. Refrigerated transport vessels and supply vessels can also carry out IUU activities, and therefore the Global Record also includes data on these, to enhance transparency in transshipment and refuelling operations. However, owing to the large number of vessels, FAO will take a phased approach starting with the largest vessels.

187. The UVI is the key component of the Global Record and is applied as a first step to vessels of 100 gross tonnage and above. It will be used to identify and track vessels as well as for enhanced traceability of fishing products. The UVI is associated with the vessel for its entire life regardless of changes of name, flag or ownership. The IMO has recently adopted IMO Resolution A.1078(28) to amend the IMO Ship Identification Number Scheme to include fishing vessels. Therefore, the preconditions for using the IMO number as the Global Record UVI have now been met.

188. On the topic of synergies between the PSMA and Global Record, Mr Gudmundsson expounded that the Global Record was a major tool in assisting port States to apply the provisions of the Agreement. He highlighted Annexes A (request of port entry) and C (results of the inspection) of the PSMA, which request the IMO number, where available. This information can be verified and validated by the port inspector through the Global Record system.

189. The current priority of the Global Record Programme is with the system development. At the Thirty-first Session of COFI, the prototype system for Phase 1 will be demonstrated, incorporating UVI number and other vessel-related information. The Global Record team has coordinated actions with internal and external systems to achieve a cost-effective solution. In addition, the team has also prepared a strategy document detailing the way forward for COFI. Once the prototype system is finished, FAO will start phase 1 implementation, provided that funds can be secured. All countries with a fleet that qualifies for phase 1 will be encouraged to make sure that all vessels have IMO numbers and provide this information to the Global Record. Once the system is operational, the focus will shift to maintenance, ensuring sustainability and expansion to Phase 2.

190. Mr Gudmundsson stressed that consistent financial support was needed for operationalization of the system. While FAO is grateful for all the funds dedicated to capacity building and other resources that have been provided for this programme, it notes that without a long-term funding mechanism, it will not be possible for the Global Record to become operational. Costs could be shared by a group of contributors, as is the case for EQUASIS. Mr Gudmundsson concluded with the assurance that all the technical issues he raised were being addressed and that a large portion of the work had already been completed.

191. The RFMOs have been coordinating records, and several other selected data providers have also provided information to the Global Record. By COFI 31, the prototype system is expected to contain certified information for about 23 000 fishing vessels, which is about half-way through for Phase 1.

Discussion, comments, questions and answers

192. The presenters answered questions and responded to comments on the following:

- Reasons why countries have not ratified the PSMA, including capacity and resources, and how to overcome these.
- The rules applied between member countries of the European Union (Member Organization) and what constitutes a foreign vessel in the context of the European Union (Member Organization).
- Capacity building for ports of developing nations, specifically West African nations.
- Clarification that exceptions to fishing-related activities covered by the PSMA include only subsistence and container vessels carrying fish that had been previously landed, with no exception for recreational fishing.

SESSION 7: STOP IUU FISHING AWARD

Facilitator: Michele Kuruc, Acting Senior Vice-President, Marine, World Wildlife Fund

Presentations of Award Winners:

> **Community Based IUU Reporting System for Timor-Leste**, Pedro Rodrigues, Chief of Fishing Port and Focal Point of Regional Plan of Action on Monitoring Control and Surveillance (RPOA-MCS), Timor-Leste
>
> **EJF Community Surveillance**, Mariah Boyle, Traceability and IUU Fishing Project Director, Fishwise
>
> **Stop Illegal Fishing**, Per Erik Bergh, Project Coordinator, Stop Illegal Fishing

193. This special session was opened by Cephas Ralph, Chair, International MCS Network, who explained that the Stop IUU Fishing Award contest was a new activity of the Network, which was conceived by Michelle Kuruc, Acting Senior Vice-President, Marine, World Wildlife Fund. Ms Kuruc served as Chair of the Network Committee of Judges for the evaluation of the Stop IUU awards entries and selection of the prizewinners. At the Workshop, she announced the three best entries, highlighting the merits of each project, after which the recipients or their representatives made presentations about their innovative projects.

194. Before naming the winners, Ms Kuruc described the conception of the Stop IUU Fishing Award contest. The idea arose from simple conversation among various network members and was presented as an agenda item at the International MCS Network's business meeting in 2012 in Valparaiso, Chile. Not only did the members approve the competition, they elaborated on it, inserting assistance for developing countries and an additional youth component, in which young people could submit artwork and drawings expressing why protecting fisheries is critical to the world. As Ms Kuruc spoke, artwork from the youth competition was displayed on the screen behind her.

195. The Stop IUU competition is another innovative way the International MCS Network is fighting IUU fishing by recognizing solutions used in both small- and large-scale fisheries to deter IUU. A wide range of entries was received from around the world from students, intergovernmental organizations, RFMOs, information technology experts and entrepreneurs. Some examples of entries were: fishery trade data analysis for incorporation into MCS; DNA analysis translating to traceability; co-management in a small-scale fishery; digital labels for fish; SMS networks to stop dynamite fishing; data mining looking for patterns; electronic fishing permits; and software to identify choke points for IUU vessels in the ocean and at ports. Recurring themes were teamwork, cooperation, community-based participation and co-management. Entries were judged on innovation, success, feasibility and cost.

196. Ms Kuruc displayed the Stop IUU Fishing Award logo designed by a team at FAO and explained its symbolism. On one side, the logo features an adult and a juvenile fish in a circle, representing how nature protects itself. On the other side is a fishing net, which is not an inherently negative symbol but here represents those in the community who do not respect the marine environment. This motivates the work of the International MCS Network, which is represented by the green squiggle in the middle of the logo.

197. Ms Kuruc then proceeded to the prize ceremony where the Network Chair presented a plaque with the Stop IUU Fishing Award logo to each prizewinner. She invited the winners to the stage one by one, starting with third prize, noting that all of these projects deserve support for further development and that they should serve as examples and inspiration to other countries and organizations.

198. Third place was won by Stop Illegal Fishing. Ms Kuruc invited representatives of Stop Illegal Fishing, Per Erik Bergh and Geofrey Nanyaro, to come on the stage to receive the prize from the Network Chair. Ms Kuruc described Stop Illegal Fishing as an organization that had been persistent where others sometimes gave up. It started small but expanded to encompass the whole continent of Africa. By transmitting data quickly to relevant international authorities, it has assisted with the apprehension of many illegal vessels, leading to fines totalling millions of dollars. Stop Illegal Fishing has shown many in Africa that they can make a difference if they cooperate.

199. Second place was awarded to Environmental Justice Foundation (EJF) for its community surveillance project in Sierra Leone. The award was accepted by Mariah Boyle on behalf of Steve Trent of the EJF and Victor Kargbo of Sierra Leone's Joint Maritime Commission. Their project enabled fishing communities to transmit information directly to international authorities using basic tools: a laptop and a simple spreadsheet developed for IUU alerts for each international agency. Designed to ensure that IUU would not simply be displaced to other States, their project exemplified a simple cost-effective solution, qualities emphasized throughout the competition.

200. Placing first was the IUU Reporting System of Timor-Leste, the award for which was accepted by Pedro Rodrigues. Based on the principle of cooperation between artisanal fisheries and government authorities, the IUU Reporting System employs a tracking device called "SPOT© tracker" often used by hikers. Authorities provided these locators to fishers under an innovative loan programme. The user-friendly device has two buttons: an alert button, which can instantly transmit a message to authorities in charge of search and rescue, and a button that allows fishers to report IUU activity anonymously. Ms Kuruc observed that this simple cost-effective system is supported by fishers and fully utilized for data collection on fishing effort, and it can save human lives.

Community Based IUU Reporting System for Timor-Leste

201. After accepting the first place Stop IUU Fishing Award prize, Pedro Rodrigues presented the Timor-Leste Community-Based IUU Reporting System. He first thanked the International MCS Network for the award and also thanked the Government of Spain for its financial support for the project. He clarified that he was also accepting the award on behalf of co-authors of the winning entry Lourenco Amaral, Crispen Wilson, Enrique Alonso and Mario Pereira, as well as other national staff and international consultants who supported the long-term work of the team.

202. Against a history of bad enforcement and a recent natural disaster, Timor-Leste began discussing how to build a fisheries management plan with Spain. In these meetings, it was decided to employ some type of mobile system and to establish a website, which required development of a new data management system. The steps they took included mapping to find when illegal activity happened and where it was affecting people, purchasing equipment and conducting trainings, marking the boats as part of the mobile licensing system, and launching national fisheries statistical systems. This progression led to the current data system and the launch of the website www.peskador.org. Using the website, authorities can monitor who and how many users are inputting data and track movement of fishing vessels and reports of illegal activities, whereas, under the previous data management, fishers had to travel great distances to transmit data to national authorities. Through training, fishers have

learned how to send data to the national database from their districts. As to boat markings, the team identified 4 773 individual fishers, 162 fishing centres and 3 020 boats, which they categorized by engine type. The authorities use Global Positioning System (GPS) data to measure against the data provided and boat markings. They also compare against information about illegal fishing and attacks received from the community.

203. The co-management strategy devised by the Regional Fisheries Livelihoods Programme for South and Southeast Asia focused heavily on building partnerships and involving communities, local leaders, and religious leaders. All the parties needed to be involved in data collection, so the task was to train the fishers to do this in an efficient way using GPS and other tools.

204. The MCS innovation in this IUU reporting system is the working relationships established between artisanal fishers and government agencies. Under the programme, the government loans personal GPS locator beacons (SPOT© trackers) to artisanal fishers to improve their safety at sea, and, in exchange, fishers use the devices to report anonymously any illegal fishing activities in their areas. The tracker devices are easily obtainable, cheap, and can be purchased online. They automatically report positions every 15 minutes. A private secure interface protects the data transmitted. One of the buttons on the SPOT© tracker has been repurposed to report illegal fishing. The other button is an emergency button.

205. Before the devices and trainings were delivered, the National Directorate of Fisheries and Aquaculture, district fisheries offices, and local leaders were all involved in selecting fishers. Criteria were developed about data needed, and a rule was established that participating fishers had to report incidences of illegal fishing. The new approach was tested in April 2012, when two devices were loaned to industrial vessels. As it worked well, 14 more devices were purchased and distributed to local fishers.

206. The community-based reporting system has produced benefits for all the different parties involved. The benefits to fisher participants include stopping harmful illegal fishing and increasing safety. If they are in danger of sinking, they can press the emergency button, or if a boat is overdue, the family can report this and have it tracked. The additional data on fish stocks benefits natural resource managers, as does having relationships with fishers. For the government, the multiple advantages include saving time, fuel and money and increasing surveillance at little cost. The relationships and trust built with fishers are also valuable to the government.

207. All of these efforts have produced tangible impacts, one of which is the first database of reports of IUU. Maps of hot spots have been drafted and are updated regularly. They have more data from highly exploited areas, including fishing patterns, which is helpful not only for tracking IUU fishing but also anticipating it. Communication between fishers and states is enormously improved, and coordination and communication among agencies has improved too. There has been a direct impact at the policy level, where a national MCS system is being finalized and a new procedure for emergencies has been agreed. In addition, relevant ministries have created a joint body to deal with maritime security. The President of Timor-Leste is also supporting establishment of a centre for maritime security, and Norway has agreed to fund one of the activities necessary to establish this centre.

EJF Community Surveillance

208. Mariah Boyle accepted the award for second place on behalf of Environmental Justice Foundation (EJF) for its close work with the Joint Maritime Commission (JMC), Ministry of Fisheries

and Marine Resources, Sierra Leone. She delivered a presentation drafted by Victor Kargbo, Leader, JMC Management/Boarding Team. The EJF works at the intersection of people and the planet. Its mission with respect to oceans is to protect the marine environment, its biodiversity, and the livelihoods and food security dependent on it. The EJF's work under the community surveillance programme in West Africa has three parts: awareness raising on IUU, surveillance using the EJF's patrol vessel, and use of satellite AIS for remote monitoring.

209. Referring to a map of coastal Sierra Leone with areas around Sherbro Island highlighted in red, Ms Boyle said there were dozens of communities in this area suffering impacts from trawling activity. These distant-water trawlers are not being controlled by their flag States. Counter efforts are limited by weak MCS capacity and corruption in the system. Where there is any monitoring, trawlers evade it by covering their names, and it is difficult to discern identifying features. On the other hand, installation of VMS was begun in 2010 in Sierra Leone, and the Ministry of Marine Resources and Fisheries has been supportive of the work of the JMC to conduct surveillance operations and board ships. The existing efforts and political will in Sierra Leone have provided a foundation for EJF to establish an influential MCS programme.

210. The EJF works with the artisanal fleet. With competition from trawlers, the artisanal fleet and other legal fisheries in coastal States find it hard to abide by their own laws and policies. These trawlers enter into the inshore exclusion zones (IEZs), where there should not be motorized fishing. This forces artisanal fishers into estuaries, because they do not want to interact with industrial trawlers offshore.

211. Persistent work on the ground by the EJF and JMC has led to a system of community surveillance and some progress towards stopping the trawlers. A critical component of the project has been the EJF's patrol boat, which can approach other vessels. The way the system works is that fishers call reports into a local office, and the EJF boat and staff are then deployed to observe and approach vessels. They take photographs, record position data and also assess any damage to local gear. This evidence is transmitted to offices in both Freetown and London. If there is an IUU violation, the information is disseminated widely. The EJF's IUU alerts contain detailed information such as photographic identifications of vessels with many different names based on their unique characteristics. One alert influenced a yellow card from the European Union (Member Organization) to the Republic of Korea.

212. Data collected from the Sherbro River area between 2010 and 2012 showed high numbers of trawler reports, declining at the end of 2011, and illegal fishing by vessels of the Republic of Korea ceased after late 2011. However, there has been an increase in such activity in recent months, because the new fisheries minister has decided to grant licences to fishing vessels of the Republic of Korea again. This shows that EJF-supported community surveillance is a powerful tool, but it is only as good as local legislation and governance.

213. The programme continues to expand, including adding use of satellite AIS in 2013. All of this has helped fishers to manage fisheries more sustainably and promoted stewardship of the marine environment. The EJF has gained the trust of the community, which is an important step towards sustainable fisheries. Following the success of the project, the EJF is working with the community to develop a co-managed marine protected area for protection of nurseries.

214. The community-based surveillance in West Africa is one aspect of the EJF's larger effort to achieve global fisheries transparency, which will depend on key factors including the Global Record of

Fishing Vessels, a ban on FOCs, implementation of the IUU Regulation of the European Union (Member Organization), publicly available licence and fisheries information, and IUU due diligence by retailers and seafood companies.

Stop Illegal Fishing

215. Per Erik Bergh represented the third-place winner, and explained that Stop Illegal Fishing worked to combine African voices to influence policy, improve fisheries governance and facilitate change. This includes regional collaboration as well as helping coordinate the African Group at COFI meetings. At COFI 30 in 2012, it produced position papers and helped with a statement delivered by the African Group about IUU fishing. Stop Illegal Fishing also helps facilitate communication, awareness and advocacy. Its website is known as the place to go for IUU news, information and examples of best practices. It also promotes exchange of intelligence through FISH-i Africa (discussed further in Session 9).

216. Communications have improved considerably since 2009, and work has become much more proactive, moving from investigations to actions and facilitating prosecutions. Governments have asked Stop Illegal Fishing for help in placing information into the public domain. Thus, the website has been a useful tool for transparency. Making information public also fosters competition and has pressured countries to improve national efforts. The webpage had 88 000 visits in 2013, including many from the United States of America, the United Kingdom of Great Britain and Northern Ireland, Australia, Taiwan Province of China and the Republic of Korea.

217. Other significant actions of Stop Illegal Fishing have included developing testing tools to combat illegal fishing, notably the Capacity Need Assessment for countries to implement port State measures. It also enhances capacity through training workshops for MCS practitioners. Currently, it is consolidating IUU lists with support from Norway as well as convening expert groups to lead the African campaign against illegal fishing. As a testament to the effectiveness of these efforts, sanctions totalling USD7 million have been imposed on more than 50 vessels in Africa.

218. Stop Illegal Fishing provides evidence-based advice created by Africa to be used in Africa. By using this home-based evidence, it can influence policy, especially at the Conference of African Ministers for Fisheries and Aquaculture.

219. Mr Bergh concluded with a note about the organization's history and its future. Stop Illegal Fishing began by helping the Southern African Development Community to develop a statement on IUU in 2007. It was originally a five-year project supported by the Government of the United Kingdom of Great Britain and Northern Ireland. It expanded to become a pan-African group to combat illegal fishing in 2009, and, in 2013, it gained status as a non-profit organization in Botswana. For 2014, it is proposed to become an integrated part of the African Union reform mechanism for fisheries, an issue scheduled for consideration at the Ministers' conference in March.

SESSION 8: MULTILATERAL INITIATIVES

Facilitator: Bjarne Schultz, Directorate of Fisheries, Norway

Presentations:

Cooperation in Central America, Otto Wantland, MCS Specialist

European Union Action towards the International Fight against IUU Fishing, Adela Rey Aneiros, Policy Officer – IUU, European Commission, DG Maritime Affaires and Fisheries

Pacific Coral Triangle Initiative, Todd Dubois, Office of Law Enforcement (OLE), National Oceanic and Atmospheric Administration (NOAA), United States

Seven Years of Regional Cooperation in the Indian Ocean, Mauree Daroomalingum, Director of Fisheries, Mauritius

220. Session 8, the first session on Thursday afternoon, was facilitated by Bjarne Schultz and encompassed multilateral initiatives in Central America, the Pacific Coral Triangle, the European Union (Member Organization) and the Western Indian Ocean. This was the first of two sessions under the theme of partnerships, sponsorships and technical assistance.

Cooperation in Central America

221. Otto Wantland, MCS Specialist, SICA and OSPESCA, made the first presentation of the session about the Fisheries and Aquaculture Integration Policy for Central America. This policy has guided SICA since 2005 and includes a specific MCS strategy. In Central America, the navy is in charge of maritime surveillance, except in Costa Rica and Belize, which do not have militaries but do have coast guards. The control and surveillance application strategy also considers sanctions to discourage theft and illegal trading of fisheries products, and determines appropriate uses of the money collected, which can be substantial amounts. In the case of Guatemala, the fisheries law yields 30 percent of fines. The policy also includes a strategy concerning the use of VMSs.

222. National plans of action to prevent, deter and eliminate IUU have been completed and are being implemented in each country. Every plan of action has a standardized format and covers the following: objectives and principles; State responsibility; cooperation between States; actions of flag, port and coastal States; and trading measures. In addition, national plans set forth responsibilities of flag, port and coastal States as well as some trade measures that have been agreed to internationally.

223. A prominent example of regional regulation is management of Caribbean spiny lobster fisheries. The integration policy derives tools that are developed within the governance models, and resulting regulations contain a series of elements to fight IUU. In the context of the lobster fisheries, these were seasonal four-month closures in eight countries, definitions for minimum sizes and weights, and prohibition on scuba diving owing to the health risks to divers. Another example is a SICA regulation that prohibits catching female sharks and shark finning. All shark bodies must be intact with fins naturally attached or partially cut.

224. Mr Wantland described specific regional MCS tools, including the Central American Fisheries and Aquaculture Record, an integrated record created in 2009. The main users are fisheries inspectors, and they provide supplementary information from their own projects. Industrial vessels are included, and a major effort is under way to list about 36 000 artisanal vessels as well. Another MCS tool that is

being gradually implemented is regional VMS. OSPESCA regards satellite monitoring as a potentially useful tool and is exploring it for use on small vessels via data sent to a centre in San Salvador.

225. Together with NOAA, OSPESCA is running a capacity-building project, under which a method for TEDs was developed. With the objective of greater transparency and protection of turtles, the regulation mandated use of TEDs on all Central American trawlers and provided for a high-level management committee and regional MCS training workshops for inspectors. A ten-minute educational video was created, which explains the importance of TEDs and some technical aspects of the devices.

226. In 2011, OSPESCA convened a regional conference on MCS, calling on agencies to address the problem with greater focus on interinstitutional and intersectoral cooperation. It proposed creating a regional network. It also convened a regional workshop with naval and coast guard services on maritime surveillance. The objectives for the meeting included to examine the evolution of VMS in the region and to identify equipment for integration. In Central America, a security strategy dictates a list of priorities to follow. Among the priorities, environmental crime is not yet included. However, with respect to vessels that are trafficking drugs and people, the same vessels probably engage in IUU and other maritime crime.

227. Mr Wantland briefly described some other initiatives of OSPESCA, including a memorandum of understanding it has signed with the Caribbean Regional Fisheries Mechanism and support for international initiatives. FAO held a workshop in Honduras in 2012, intended to be a step towards Central America participating in the Global Record of Fishing Vessels. FAO also sponsored a workshop to promote the PSMA and a mechanism to exchange information. Central American countries are interested in the PSMA but face some institutional challenges to ratification. Finally, OSPESCA will soon have a regional plan of action for IUU. The instrument will include actions with international MCS organizations, enhanced training for officers and fisheries inspectors, and coordination with port authorities to prevent entry of IUU vessels operating inside and outside of the region.

European Union Actions towards the International Fight Against IUU Fishing

228. The next presentation was made by Adela Rey Aneiros, Policy Officer, IUU, European Commission, Directorate General Maritime Affairs and Fisheries. Before presenting the experience of the European Union (Member Organization) in fighting IUU fishing, Ms Aneiros remarked that the GFETW forum was fundamental for exchanging experiences and strengthening systems for combating IUU fishing.

229. Ms Aneiros divided her presentation into three parts: (i) IUU as a global challenge; (ii) the policy of the European Union (Member Organization) on IUU (the EU IUU Policy); and (iii) IUU challenges in the near future and the benefits of international concerted action. With regard to IUU as a global challenge, the European Union (Member Organization) has adopted many international laws and measures and has been actively contributing to further negotiations. It has adopted a position of zero tolerance for IUU in all these fora. It has signed joint statements with the United States of America for combating IUU and will soon do the same with Canada and third-party States. It is also part of a multilateral agreement to assist with records and certification. A primary reason for its action is that it is the largest global importer of fish. Therefore, it has the responsibility to ensure traceability of fishery products “from net to plate”. However, MCS has proved difficult on many levels, which is why the European Union (Member Organization) has to focus on imports.

230. Ms Aneiros explained the EU IUU Policy and shared practical experiences in implementation. Several regulations form the legal framework, which the European Union (Member Organization) attempts to communicate to third parties and stakeholders in cooperation with FAO and other organizations. One example of this is SmartFish in the Indian Ocean and another is projects of the European Union (Member Organization) focused on the IUU hot spot in West Africa. Some of the basic principles of the EU IUU Policy are transparency and non-discrimination, with the ultimate goal of eliminating illegal products from the market. Citizens across member States the European Union (Member Organization) have a consensus that they do not want illegal products. Under the policy, there can be prosecutions of foreign vessels and nationals of the European Union (Member Organization) alike, if they are economic beneficiaries. In fact, the strictest rules apply to vessels of the European Union (Member Organization). For example, a recent measure withholds all subsidies from any person found guilty of illegal fishing. As to scope, the policy applies to any vessel under any flag for fresh fish processing.

231. In the practical experience of the European Union (Member Organization), there are three fundamental operational tools that enable application of international law and laws of States, which is the objective of the policy. The best-known tool is the catch certification system. All fishery products intended to be sold in the European Union (Member Organization) must be accompanied by a catch certificate validated by the flag State. Flag States are already obligated to verify that fishing is carried out within quotas under UNCLOS. Vessels must also verify that fishing abided by measures of coastal States. Simply put, no catch can be in contravention of any law. Before the system was adopted, there were concerns about possible administrative burdens, but after five years, this has become a fundamental tool, and the European Union (Member Organization) has helped third-party States to comply. The next step will be to develop a truly digital system and to connect with sanitary control databases. In addition, an assessment process will be launched so that external entities can audit the European Union (Member Organization) and see how well the system and regulations are working.

232. The second fundamental tool in the experience of the European Union (Member Organization) is the mutual assistance programme, which is not as well known as catch certification. Several secure mailboxes receive IUU information from NGOs, third-party States and member States, which the team evaluates. After analysis, they communicate with the coastal State, the flag State and anyone else with responsibility or competence to act. They have sent 100 alerts and investigated more than 200 cases since 2010. Fines and fees in the sum of EUR9 million were collected in 2011 and 2012, and many imports have been rejected. For example, after identifying West Africa as a hot spot and discovering the illegal products from there were coming into the port of Las Palmas, the European Union (Member Organization) and Spain worked to close this port to these vessels.

233. The last practical tool is non-cooperating countries lists. This last pillar of the EU IUU Policy is known by the publication of the results, but not as well as it should be. The objective of the European Union (Member Organization) in establishing links to third-party States is not to close its borders to those States but to cooperate with them. Confidential dialogues begin when invoices or receipts have been altered or other suspicious activity occurs or when countries export a large quantity to the European Union (Member Organization). Inspectors visit their plants and sometimes discover conditions about which the authorities were unaware, or they find gaps in the system. In 2013, eight yellow cards were issued for States to be improved, with only three of these listed for possible market closure. More than 30 other States have responded by improving their systems, and some have even thanked the European Union (Member Organization), because they had not been in the position to ask for more resources from their governments before.

234. The European Union (Member Organization) anticipates certain IUU challenges in the near future, including ensuring States implement the IPOA-IUU and their own plans of action. It is also of prime importance that the PSMA enter into force. The European Union (Member Organization) believes catch certificates are useful, and, after the previous FAO meeting, there is a requirement for catch certificates. Certificates should be standardized globally but need not be in the format proposed by the European Union (Member Organization). The European Union (Member Organization) also believes the IMO number should be used for identification of vessels. There should be an increase in exchange of information, and the European Union (Member Organization) would encourage anyone to use its platform to report IUU. Another issue that must be dealt with is chartering, which is a gap in international law. The last challenges are fostering the use of new technology and making VMSs compatible. Any 12 m vessels flying flags of member States must carry a VMS. All of these actions will contribute to increased traceability and deter IUU, consistent with the goals of the International MCS Network.

Pacific Coral Triangle Initiative

235. Todd Dubois, Assistant Director, Office of Law Enforcement (OLE), NOAA, the United States of America, made the third presentation of the afternoon, focusing on the topic of partnerships to combat IUU fishing in the context of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI). Launched in 2009, the CTI is a multinational programme funded by the United States government to protect the Coral Triangle region, an area encompassing almost 6 million km^2 in the EEZs of Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands and Timor-Leste. The Coral Triangle is a hot spot for biodiversity, containing about 500 species of corals and 100 species of fish. The health and productivity of the region is vital to the food security of 363 million people, including 120 million directly dependent on its marine resources. The marine ecosystem also supports a USD12 billion tourism industry and a multibillion dollar Pacific tuna industry by virtue of its tuna spawning grounds and nurseries. Coral reefs also help buffer coastlines, protecting from erosion and natural disasters.

236. The CTI brings together the six Coral Triangle countries to protect the marine environment including combating IUU fishing. The transboundary/global nature of IUU fishing has been of primary concern in many of the presentations at this Workshop; and the CTI views IUU fishing in the context of both industrial and artisanal fisheries. To best utilize limited resources over a large geographic scale, the CTI has identified key priority geographies and focused resources toward the highest-priority IUU fishing threats indicated by the countries themselves.

237. The work of the OLE in the Coral Triangle began with a survey of all six countries' MCS capabilities, fisheries regimes and specific IUU fishing issues. These surveys helped to identify where NOAA expertise could assist in combating IUU fishing. Another objective was to identify and address gaps in the law, so that enforcement activities would be supported by prosecutions. The last two objectives were to identify fisheries MCS training needs and ways to increase communication and collaboration to combat IUU fishing.

238. The first step was to understand regional issues and differences to determine how to help. With the assistance of the International MCS Network, the OLE conducted surveys, meeting with all types of stakeholders and people with knowledge of MCS tools. Funding was secured to bring partners from the region to the 3rd GFETW in Maputo, Mozambique. Together with the United States Department of Justice, the OLE hosted a legal workshop where participants developed legal frameworks for their own national battles against IUU fishing.

239. Mr Dubois reported on two transboundary IUU fishing workshops held in 2013, in which participants identified areas for collaboration. The first workshop was convened in Cebu, the Philippines, for participants from the Philippines, Indonesia and Malaysia along with partners from the United States of America, Australia and several NGOs. One goal of the workshop was to find ways to enhance communication and collaboration. Another was to collectively brainstorm, find commonalities in the issues being faced and explore strategies to address these. Care was taken to ensure that actions were country driven and consistent with the Regional Plan of Action of Southeast Asia and other regional agreements. The CTI strives to assist countries to move forwards with existing programmes and better utilize tools within the region.

240. Three major issues identified at the first workshop were the live reef food fish trade, poaching of sea turtles and illegal incursions of foreign vessels (including transiting through each other's waters). The participants identified these as issues on which collaboration would be useful. One primary outcome was to develop joint target teams to address key transboundary and MCS issues. Participants formed teams to collaboratively gather intelligence on sea turtle poaching and the live reef food fish trade, and agreed to come together to use those specific threat assessments to develop a joint operations plan involving assets and expertise supplied by all three countries. Eventually, the joint operations planning will inform a targeted operation within the shared maritime areas. The workshop enhanced communication by bringing regional MCS experts together to develop a common approach to shared IUU fishing issues. Often, regional experts have to go through formal channels, so collaboration takes time. Other outcomes included agreeing to explore how to streamline communications and working to develop an intelligence product.

241. The second transboundary workshop, held in Honiara, Solomon Islands, was attended by MCS experts from Papua New Guinea, Solomon Islands and Timor-Leste. Partners included Australia, the FFA, the Secretariat of the Pacific Community and the International MCS Network. The three countries concluded that the best task on which to work together was an information campaign at all levels (from fishers to high levels) as part of a coordinated communication strategy. They also identified the need for improved MCS capacity and training.

242. Looking forwards, the next steps are to develop a regional information sharing strategy for MCS organizations in all six countries and to collaborate further with regional, institutional and non-governmental partners. Any new partners or support would be welcome. INTERPOL's Fisheries Crime Working Group has been discussed as one potential new partner.

Seven Years of Regional Cooperation in the Indian Ocean

243. The next presentation was delivered by Daroomalingum Mauree, Director of Fisheries, Mauritius, focusing on the Regional Fisheries Surveillance Plan (RFSP) for the South Western Indian Ocean. The RFSP is the main tool of the regional strategy for fisheries monitoring of the Indian Ocean Commission (IOC), an organization comprising the Comoros, Réunion, Madagascar, Mauritius and Seychelles. The regional tuna fisheries are vital to the economies and food security of IOC countries, but they span a wide area of ocean, making MCS a challenge.

244. The fundamental principles underlying the RFSP are political will, regional commitment, and international support. First, in 2005, IOC Heads of State decided to strengthen efforts to combat IUU fishing. In 2007, the five IOC fisheries ministers signed a regional agreement reflecting the common wish to fight IUU in their EEZs. This was incorporated into a framework partnership with the European Union (Member Organization), under which the latter committed to provide financial and technical support for six years. For their part, the ministers made commitments to share existing

facilities to monitor and track licensed fishing vessels in EEZs. They also agreed to boarding and inspection of non-licensed fishing vessels in EEZs, by aerial and sea patrols, as appropriate. Four action plans were developed, encompassing joint patrols, data exchange, regional VMSs and extension to East Africa.

245. With the overarching goal of enhanced regional coordination to deter and fight IUU fleets, one high priority was going as far as possible with low-cost joint patrols. Other objectives included using new technologies, training inspectors, capacity building for national monitoring centres, and exchange of data, especially VMS data. The RFSP is an effective tool for implementation of regional strategies for fighting IUU fishing as well as promoting sustainable development in the sector. Although the RFSP is funded by the European Union (Member Organization), it was conceptualized by the five member States and expresses their will. It increases capacity without displacing their decision-making.

246. Although its governance is informal, the IOC constitutes a durable maritime operational network and has a permanent office in Mauritius. At the heart of the IOC is the Regional Coordination Unit, which fosters the permanent link between the five fisheries ministries for data sharing and coordination. Through the Regional Coordination Unit, the members set monitoring priorities, plan for joint patrols (both maritime and aerial), define requirements and plans to implement them, and set annual action plans. A ministerial meeting occurs annually to take stock of progress.

247. One of the new technologies that the IOC is assessing is radar satellites, which can detect vessels without their knowledge. Currently, patrol vessels consist of mostly French assets and some local assets. These and other facilities are important to regional joint patrols. Prior to 2007, most MCS activity was confined to ports, with only Seychelles and Mauritius having any ability to control their EEZs. Now the IOC covers the whole region of tuna migration patterns. Thanks to regional joint patrolling, it is possible to monitor long routes, including one route near Madagascar that takes 15–17 days to patrol.

248. Results of the RFSP as of February 2014 include 39 MCS joint patrols, deployment of 350 inspectors at sea, and more than 420 inspections at sea, mainly of fishing vessels that never come to port and are suspected of transshipment. Ten suspects have been arrested and 40 infringements detected. A 2013 report revealed a high number of inspections of vessels from Taiwan Province of China. These vessels are targeted because they are engaged in transshipment, not because of their origin; there is no discrimination among flag States. On account of these enforcement actions, authorized and licensed fleets are now taking confidence in how IOC countries are managing their EEZs and enabling economic development. Some MCS activities also contribute to the fight against piracy. These types of concrete results with respect to data exchange, capacity building, trust and efficiency were unimaginable before 2007.

249. The IOC still faces some limitations with respect to consistency and follow-through, but these issues are being addressed and new plans are moving forwards with the support of the SmartFish programme. For example, in March 2014, a VMS operation encompassing the whole region was scheduled, and the next steps after that will be incorporating AIS, developing a regional licence database, and requiring entrance and exit reports. In addition, the regional strategy to fight IUU fishing will be extended to Kenya, Mozambique and the United Republic of Tanzania.

250. To conclude, Mr Mauree stated that the IOC anticipates that this regional strategy will be visible by 2017, at which time it hopes to be able to implement the RFSP on its own. This is an enormous responsibility, entailing management of a large percentage of the world's tuna stocks. The

goal is to achieve optimal exploitation of these resources, while still preserving them for this generation and future generations.

Discussion, comments, questions and answers

251. Questions and comments to the presenters raised the following issues:

- Potential controls for chartered vessels.
- The difficulty of including vessels in the IUU list of the European Union (Member Organization) independent of RFMOs listings.
- The relationship between the IOC and the Indian Ocean Tuna Commission (IOTC).
- Applying the regional strategies to other regions or globally, potentially using a global evaluation to determine where similar conditions exist.
- Overlapping EEZs in the Indian Ocean.

SESSION 9: PARTNERSHIPS AND BILATERAL COOPERATION

Facilitator: Alejandro Covarrubias, Head of International Affair Unit, SERNAPESCA, Chile

Presentations:

> **Regional Cooperation in Control and Surveillance Fishing in the Framework of OLDEPESCA**, Angel Rivera Benavides, Executive Director, OLDEPESCA
>
> **Prosecution of Fisheries Violations in Ghana's Western Region**, Kofi Agbogah, Program Director, Coastal Resources Centre, Ghana
>
> **Brokering Cooperation between MCS Authorities**, Cephas Ralph, Chair, International MCS Network
>
> **Fish-i Indian Ocean**, Kristín Gunnarsdóttir von Kistowski, Senior Advisor, The Pew Charitable Trusts, and Per Erik Bergh, Project Coordinator, Stop Illegal Fishing

252. Alejandro Covarrubias, Head of International Affairs Unit, National Fisheries and Aquaculture Service (SERNAPESCA), Chile, acted as facilitator for the session, which was the second of two sessions on the theme of partnerships, sponsorships and technical assistance.

Regional Cooperation in Control and Surveillance of Fishing in the Framework of OLDEPESCA

253. The first presentation of the ninth session was made by Angel Rivera Benavides, Executive Director, Latin American Organization of Fisheries Development (OLDEPESCA), who joined the conference remotely via Skype. Mr Rivera first explained that OLDEPESCA had 12 members: Belize, Bolivia (Plurinational State of), Costa Rica, Cuba, Ecuador, El Salvador, Guyana, Honduras, Mexico, Nicaragua, Peru and Venezuela (Bolivarian Republic of). As brief background on the status of global fisheries, Mr Rivera displayed a graph and some charts reflecting increased overall demand for fisheries products and the associated increase in fishing worldwide. The charts showed the behaviour and participation of catch for 2011 compared with the expected amount for 2013 as the stocks that support this fishing decline. With 30 percent of stocks overexploited, the outlook for fisheries was poor, and illegal fisheries play a significant role in this.

254. A second graph demonstrated per capita consumption, which is declining in Latin America and the Caribbean, a trend that is projected to continue to 2020 and beyond. This implies one of two things, either less fish is being consumed or there is more interest in exportation. Either way, it is a troubling piece of data. In China, on the other hand, per capita consumption is predicted to increase by about 40 percent between 2000 and 2030. This is one factor that will have the immediate consequence of greater pressure on fisheries resources.

255. Consequences of IUU fishing include loss of public income from taxes, loss of value of extracted fish, and loss of value from processing fish. The development of these fisheries cannot follow traditional paths and results in less employment. Loss of production in some fisheries and lack of order can trigger a chain reaction in the fisheries sector. Another consequence is poor reporting of catch data. Conflicts arise between fishers that are regulated and those that are not, and those who have been following the rules might become illegal fishers in order to compete.

256. OLDEPESCA has developed an international plan of action (IPOA) to prevent, deter and eliminate IUU fishing, which targets activities carried out by foreign vessels without State permission in contravention of rules and regulations. Results so far have been insufficient. This has led some experts to ask if there is a lack of political will to act more effectively to prevent IUU fishing. In the region, many would say that that it is not political will that is lacking, but rather sufficient resources.

257. Work on the IPOA commenced with a survey by FAO of Latin American and Caribbean countries that were concerned about IUU fishing. From the survey, it was concluded that 84 percent perceived IUU fishing as a problem, and, of those, 62.5 percent had undertaken some form of regional or bilateral cooperation, and 87.5 percent were working on legislation. However, 18.8 percent had not implemented any measures, only 31.5 percent had implemented port State controls, and only 25 percent had flag State controls. OLDEPESCA does not have the capability to patrol EEZs, so it is considering satellite resources. Lack of universality of international instruments for port State measures means that non-participating ports undermine the efforts of others. It is almost impossible to discern legality/illegality once fish reach commercial markets. The IUU activities can be linked to other illegal activities such as smuggling. OLDEPESCA has also investigated other aspects of IUU fishing since 1999 and has approved various measures, including some binding ones.

258. When dealing with IUU, regional ministers decided that they needed more regulations and further development of OLDEPESCA. There was a general agreement to improve technical capacity and regional information systems and to support the formulation of plans for regional enforcement and MCS. It was also agreed to solicit multilateral support, including from the European Union (Member Organization), as the regional plan has not had the impact OLDEPESCA had anticipated. As a final note, Mr Rivera informed participants that OLDEPESCA was requesting scientific studies of fisheries resources in markets. It has done some preliminary work on this, which can be viewed on its website. It is also seeking recommendations for national plans of action and other strategies to mitigate the impacts of IUU fishing, including discussions with vessels engaged in IUU activities.

Prosecution of Fisheries Violations in Ghana's Western Region

259. Next, Kofi Agbogah, Program Director, Coastal Resources Centre, Ghana, explained the fresh approach that coastal western Ghana is taking to prosecutions of IUU offences in the context of the Hen Mpoana (Our Coast) Initiative. The purpose of the Hen Mpoana Initiative is to support the Government of Ghana's goals with respect to food security (including fisheries management), poverty reduction and biodiversity conservation in coastal areas. The initiative was launched in 2009 and is funded by the Government of the United States of America.

260. Mr Agbogah's presentation focused specifically on a subnational approach to combating IUU fishing in the western corner of Ghana, an area that is under the control of western command of the Ghana Navy. For reference, he displayed a map delineating the six nautical mile area reserved for artisanal fisheries. The region was experiencing a number of challenges with respect to IUU fishing, including: low levels of awareness of impacts of illegal fishing on food security; poor enforcement of fisheries laws; and an insufficient legal system to curb illegal fishing. For example, a judge once asked Mr Agbogah the following question: If people eat anchovies, how can it be illegal to fish them? This necessitated an explanation of the negative impacts of illegal fishing on the community, especially on poor children who live on the coast.

261. In western Ghana, strategies to address IUU fishing were put forth, including a massive communications effort towards stakeholders related to illegal fishing issues and the fisheries laws. With the endorsement of the Ministry of Fisheries, a fisheries working group was also created to

facilitate open discussions between State actors, civil society and other stakeholders. Participants in the working group suggested the need to tighten fisheries prosecutions.

262. Mr Agbogah recounted some of the efforts made to improve fisheries prosecution. First, there was a meeting with the Chief Justice to ask her to create special environmental courts to deal with illegal fishing and other environmental crimes. In addition, training on fisheries laws was provided, stressing the social and economic justifications for these laws. The training was targeted at individuals throughout the prosecution chain from judges to agency officials to civil society. Another strategy was to research the judicial rules and review case histories and cases from other jurisdictions. The research revealed that the State was losing cases because prosecutors were not being thorough and learning about fisheries issues, whereas solicitors for offenders were well informed and could outmanoeuvre the prosecution and the court. Another gap in prosecution was lack of adequate preparation of witnesses, including officers of the navy, who have to be summoned a week in advance per navy rules. Gaps also existed in evidence gathering, presentation of evidence, selecting prosecution, and proper observation of the rights of the accused.

263. One useful visual for prosecutors shared by Mr Agbogah was a chart entitled "Roadmap … from arrest to conviction". It depicted all of the steps at which gaps had been observed. For example, both the navy and land-based law enforcement must inform all arrestees of their offences and their rights. In addition, the police must document everything they do with the offenders when they process them, so that this can be presented in court. The arresting authority (navy or police) is responsible for keeping all exhibits under security, and, on account of this and other reasons, ongoing communications between prosecutors and those authorities are essential.

264. Once western Ghana closed some of these loopholes at the subnational level, the Fisheries Commission attempted to initiate a process to evaluate prosecutions at the national level. However, motivation at the national level was low, and the Ministry only held one meeting. Thus, the national rates of unsuccessful prosecutions and easily corrupted out-of-court settlements have not decreased, and the defence teams are still better prepared and more knowledgeable about fisheries issues than prosecutors and judges at that level.

265. In contrast, three reviews of Western Region confirmed that many gaps in the prosecution chain have been closed, which the reviews themselves helped to reinforce. Prosecutors, judges and witnesses are better trained and prepared for trial. Communication has improved among the Attorney General's Office, the Fisheries Commission, the police and the navy. Hen Mpoano has acted as an effective bonding agent. As a result, there have been 38 arrests, all of Ghanaian-flagged vessels, which raises the question of where the foreign vessels are. The charges have ranged from transshipment to fishing without a valid licence to use of unapproved gear. Thirty-five prosecutions have been successful, one is pending, and two have resulted in settlements.

266. To close, Mr Agbogah provided the details of an out-of-court settlement with two vessels the *Meng Xin* and the *Aka Awie*, which were owned by Ghanaian interests and had mixed Chinese and Ghanaian crews. They were arrested by the navy on 24 December on charges of transshipment, incorrect logbook-keeping and using nets that entrap undersized fish. Accepting liability, the defendants opted for settlement and appeared before a settlement panel consisting of the Head of Fisheries for Western Region and four others. Fines were assessed against one vessel, a canoe, in the amount of USD7 550, which was paid into the Fisheries Development Fund. Fines against the other vessel totalled USD191 304, which had not yet been paid by the vessel owners as of 14 February 2014.

Brokering Cooperation between MCS Authorities

267. The next presentation was given by Cephas Ralph, Chair, International MCS Network and Head of Compliance, Marine Scotland. Mr Ralph spoke in detail about the International MCS Network, its history, its current status as of this year and ideas for the future.

268. As a courtesy to new members, Mr Ralph gave a brief history of the Network. At the time of the 2000 Responsible Fisheries Declaration, countries came together (including the United States of America, European Union (Member Organization), Chile, Peru and Australia) and recognized the need for cooperative law enforcement across national borders as a key requirement for combating IUU fishing. In this context, the Network was formed the next year with a global reach, welcoming every country to join. Today, the Network still remains an organization open to all national MCS authorities, not bound by any treaty. The Network is not an organization for policy development or political activity, but rather the sole global organization in which MCS professionals from all over the world can come together.

269. Recently, the Network was reinvigorated after a Business Meeting in Chile, hosted by SERNAPESCA. A new Work Plan, a new Executive Committee, and, for the first time ever, a full-time Secretariat were established. At the meeting, it was agreed to further the Network's mission through broader cooperation with other active organizations. One of the most promising potential collaborations is with INTERPOL's Project Scale. Thus, the Network was invited to attend INTERPOL's most recent Fisheries Crime Working Group meeting in Nairobi to explain the activities and functions of the Network as well as the ways in which the two organizations can join forces.

270. The Network is beginning to instil new initiatives, with a particular focus in harnessing the power of the Web. It is important for members to actively access the website and keep their contact details up to date. Another recent large-scale initiative has been the Stop IUU Fishing Award, the presentation of which was made in an earlier session at the 4th GFETW.

271. The Network plays three key roles:

- to exchange of information, not just in conference settings but among members through informal links, which are formed at events such as the GFETW;
- to raise awareness of the problems caused by IUU fishing in areas all over the world through participation at regional and international events;
- to strengthen capacity, which the Network has the capability to do through various activities it promotes and which is the core strength of the Network, in the view of Mr Ralph.

272. What does the Network do in practice? In the past year, the Network has made a large effort to establish the Register of Vetted MCS Experts. The idea behind the Register is to harness the capabilities and expertise of the Network's member countries that are willing to engage in training activities. The Network makes a point of ensuring that these experts have capabilities in operational, organizational or high strategic levels, all of which can be useful in building capacity. Testimonials are sought from countries and agencies in order to monitor the quality of those listed on the Register. A recent activity run by experts from the Register was the African Winds project, in which the Network supplied vetted experts and coordinated training and capacity development in Ghana and Benin.

273. The Network has also published a number of newsletters on relevant MCS updates, events and technology. More recently, the Network has been working to become a clearing house for coordinating the exchange of surplus MCS equipment that could be issued to countries in need of tools.

274. The Network is funded solely by financial support from member countries. With just two paid staff, a website to maintain and a small office space shared with the Institute for Governance and Sustainable Development, the costs are not huge. However, as the Network charges no membership fee, there is no long-term security other than that provided by the good will of core membership. At this time, the Network hopes to secure base-level funding for the next three years in the near future. Mr Ralph invited any participants who felt that their governments could contribute to the Network's efforts to let this be known to any of the Executive Committee members.

275. As for the future, Mr Ralph told the participants that it was their Network and either it would go forward with their ideas or it would not go forward at all. He encouraged all input with respect to ideas about how the Network should progress, how it conducts its work, communications, and expressions of interest to join the Network's Executive Committee.

FISH-i Africa – Experiences from the Indian Ocean

276. The last presentation in Session 9 was made jointly by Kristín Gunnarsdóttir von Kistowski, Senior Advisor, The Pew Charitable Trusts, and Per Erik Bergh, Project Coordinator, Stop Illegal Fishing, about the evolution and accomplishments of FISH-i Africa, a regional task force taking action against illegal fishing.

277. Ms von Kistowski began with the reason why FISH-i Africa was created, which was out of concerns that enforcement against IUU was not occurring, especially in hot spots, where the ocean is vast and capacity to enforce is low. In Africa, there was capacity and political will, but what was missing was often the real-time information and intelligence to track down IUU vessels. Thus, many African waters remained low-risk, high-reward areas for illegal fishers. In this context, FISH-i Africa's vision was to concentrate on a number of countries and to assist with enforcement activities. In order to make illegal fishing more difficult and less profitable, it would need regional cooperation, routine intelligence sharing, and effective, low cost solutions.

278. FISH-i Africa started in the Western Indian Ocean, a hot spot for IUU fishing, but also a region where countries had made environmental commitments to stop the destruction caused by illegal fishing. A task force was set up with a technical team and representatives of the IOTC and other organizations, including the IOC's SmartFish Programme. The objective of the one-year pilot project in 2013 was to see if a team made from the region could spur action against illegal fishing operators through the sharing of intelligence and information and regional cooperation. The goal was national action, as enforcement must ultimately occur at the national level; the role of the FISH-i technical team and other organizations is only to provide support.

279. The task force is composed of enforcement officers from seven countries, supported by technical and analytical experts, including the analytical unit of the Trygg Mat Foundation. The Pew Charitable Trusts also supports FISH-i. One of the core elements that makes FISH-i successful is information sharing, including about registered vessels and vessels active in ports and zones of countries. Information is shared face to face and through an online communication platform that is simple and cost-effective yet facilitates timely exchange of information. Members can also ask questions about risk assessment, strategy or other issues.

280. Immediate results have included port inspections of vessels suspected of IUU, denial of licences and port access to IUU vessels, detection of corruption and document fraud, and contribution toward cases that resulted in fines. FISH-i participants have also participated in the IOTC process and cooperated with INTERPOL's Project Scale. Now, at the end of the pilot phase (and the start of the

FISH-i task force as an official entity), they have learned that certain factors are important, such as having regional champions, regular communication and experts who are accessible and trustworthy. Intelligence collection is key, as is harnessing the power of the media. It is also helpful to always think of the issue as a global phenomenon, to remember oceans are not isolated. Broadly speaking, the two most important factors in Fish-i's experience have been engagement from all countries at the outset and confidence that was built through cases and seeing that a difference can be made.

281. Ms von Kistowski concluded her portion of the presentation by describing FISH-i's next steps. With proof of concept after the pilot phase and with the continued support of The Pew Charitable Trusts, the task force mechanism will now be made more permanent and will focus on: routine information sharing; support through strategic analysis and investigation; tools; interagency cooperation; and political support for the task force. FISH-i will also soon have its own website containing all the information currently residing on the Stop Illegal Fishing website.

282. Mr Bergh delivered the second half of the FISH-i Africa presentation, moving directly to a case study of an IUU vessel that FISH-i impeded through cooperation, investigation and national actions, including port closures. The case spanned oceans, starting in the Eastern Atlantic Ocean where the tuna purse seiner *Premier* of the Republic of Korea was caught illegally fishing in Liberian waters. This vessel was owned by Dongwon Industries, a company that is also in trouble in the United States of America. Mr Bergh recounted that Liberian waters had been closed, but vessels were detected moving in clear fishing patterns. One of these vessels was the *Premier*, which transferred to Indian Ocean waters, probably to escape prosecution.

283. The FISH-i task force, which had just been launched, was immediately put to the test. It initiated an investigation, which anticipated the vessel coming to Mauritius, which it did in late 2012. Authorities in Mauritius inspected it and found a fraudulent Liberian fishing licence and evidence of illegal fishing in Liberia through comparison of logbooks with other data. Next, Seychelles denied *Premier* permission to enter port in early 2013, and, subsequently, the United Republic of Tanzania refused to renew its licence and Mauritius denied offloading. By this point, the denials were starting to affect the operator Dongwon financially. Around this time, Kenya also received letters purporting to be from the Government of Liberia to the Government of the Republic of Korea indicating that there had been a misunderstanding and that the *Premier* had been cleared of all charges, but these were revealed to be forgeries. When this story broke, a flurry of press and social media activity ensued, and Dongwon decided to settle with Liberia and paid USD2 million.

284. Mr Bergh reviewed some lessons learned, including the effectiveness of providing analysis and regular information to countries within a framework such as FISH-i Africa. It was also found to be useful to engage legitimate industry and market States as well as to publicize the case in the media. Two primary outcomes were the USD2 million settlement and the demonstration of effective pan-African cooperation. It was also helpful when the European Union (Member Organization) and other countries imposed import requirements for tuna from West Africa. Now, also the Republic of Korea is strengthening its laws to increase penalties. Some of the challenges still persist, including limited MCS capacity within agencies, communications between Liberia and the FISH-i countries, and investigating transboundary fraud and corruption. Another challenge is the difficulty of detecting fisheries crime; one country would have difficulty detecting such fishery crimes by itself. In the end, the *Premier* offloaded in Sri Lanka and sold its product to Bangkok, where the price was reduced owing to nervousness of the buyers. *Adria* is the new name of the vessel, which is still operating. The hope is that the name change may reflect a change in practice as well.

285. Mr Bergh concluded the presentation with a screening of a video about the FISH-i task force. The movie focused on the work of the task force and the *Premier* case.

Discussion, comments, questions and answers

286. The presenters answered questions and addressed commenting pertaining to the following:

- Any changes that had been seen in Ghana since a yellow card was issued by the European Union (Member Organization).
- Capacity building training that could reach a broader audience, including through multimedia, as inspectors and others who receive training may rotate out of those jobs.
- The value of person-to-person contact (in partial response to the previous comment about multimedia training).
- Websites out of South Africa where distance learning is promoted (also in response to the training question).
- The reason why there are not more confiscations such as that of the *Antillas Reefer*.
- Whether FISH-i Africa will share data outside the region and whether it will begin working with other port and market States.
- The time it takes and procedures for listing IUU vessels.
- The lengths to which the *Premier* went to cover up and whether the practice is more widespread at Dongwon.

RECEPTION AND DINNER

287. On Thursday evening, participants were invited to a reception and dinner, where three speakers delivered remarks, including Vice Minister of Agriculture and Livestock, Xinia Chaves. The ceremony was facilitated by Cephas Ralph, Chair, International MCS Network, who welcomed those gathered for the reception and introduced each speaker.

288. Speaking first was Johàn Williams, Chair, COFI, FAO, and Specialist Director, Ministry of Trade, Industry and Fisheries, Government of Norway, who touched on some prevalent themes of the week such as international effort, technology, and equipment exchange. His remarks were lighter in tone than his earlier keynote address. However, on a more serious note, he said that the Rio +20 Earth Summit indicated that the main challenge for the future would be to provide food for a growing population. Almost one billion people are underfed or suffer from low nutrition. Fish cannot feed the whole world, but they add a unique value. This is why good management and sustainable development are so important and why IUU fishing is so insidious, because it undermines the ability for sustainable development. Mr Williams closed with praise for the 4th GFETW as a good exchange that can help find more partners and sponsors for the International MCS Network.

289. Next, remarks were given by José Emilio Suadi, Costa Rica Representative, FAO, who thanked the Costa Rican Ministry of Agriculture and INCOPESCA, and expressed FAO's pleasure to support the 4th GFETW in Costa Rica. He noted that IUU fishing was a considerable threat to the maintenance of marine ecosystems as well as the socio-economic development of small-scale fisheries and nutrition for local communities. Despite some successes of MCS practitioners, IUU fishing still has devastating impacts. Therefore, FAO has seven initiatives supporting MCS at the global level, including the PSMA, the recently agreed VG-FSP, and the Global Record. He reiterated that FAO was pleased to support the 4th GFETW, which gathers MCS practitioners from around the world to exchange best practices and information on illegal activity.

290. Vice Minister Xinia Chaves offered thanks to all participants on behalf of the Ministry and INCOPESCA for the high level of presentations and quality of information exchanged at the 4th GFETW. She also extended thanks to all sponsors, in particular FAO, and other governments and the local committee for their hard work during the previous year. Vice Minister Chaves concluded her brief remarks by expressing hope that the conference had been fruitful and that all participants had enjoyed their time in Costa Rica.

SESSION 10: CAPACITY BUILDING IN PRACTICE

Facilitator: Carlos Domínguez, Secretary-General for Fisheries, Ministry of Agriculture, Food and Environment, Spain

Presentations:

> **Cooperation in SE Asia (RPOA)**, Glen Salmon, National Compliance Operations Unit, Australian Fisheries Management Authority (prepared and partially presented remotely by Ida Kusuma Wardhaningsih)
>
> **Capacity Development and Awareness Raising of Global Initiatives**, Alicia Mosteiro, MCS Operations Specialist/Global Record Technical Manager, FAO
>
> **MCS Needs of Developing Countries**, Kofi Agbogah, Program Director, Coastal Resources Centre, Ghana
>
> **Overview on WWF's Efforts to Curb IUU in CEA/SWIO/NIO Region**, Manuel Castiano, Policy Officer, WWF Smart Fishing Initiative
>
> **MCS Cooperation in Eastern Pacific**, Marco Quesada, Costa Rica Program Director, Conservation International
>
> **The Fight against Illegal Fishing: The Spanish Experience**, Carlos Domínguez, Secretary-General for Fisheries, Ministry of Agriculture, Food and Environment, Spain

291. The tenth and final session of the 4th GFETW occurred on the morning of 21 February 2014 and was facilitated by Carlos Domínguez, Secretary-General for Fisheries, Ministry of Agriculture, Food and Environment, Spain.

Cooperation in Southeast Asia RPOA

292. The first presentation of the tenth session was prepared by Ida Kusuma Wardhaningsih, Executive Secretary, Directorate General of Surveillance for Marine and Fisheries Resources, Indonesia, who joined the conference via Skype and attempted to deliver the presentation. However, as the connection was poor, Glen Salmon, National Compliance Operations Unit, Australian Fisheries Management Authority, who was familiar with the Southeast Asia Regional Plan of Action (RPOA), stepped in and made a presentation based on her materials.

293. As Mr Salmon related, the RPOA is an example of successful MCS in action. It is a voluntary instrument, the objective of which is to enhance and strengthen the overall level of fisheries management in the region. Three main actions are: managing fishing capacity, combating IUU fishing, and conservation of fisheries resources. Ministers from 11 countries endorsed a number of core elements, including, *inter alia*, looking at the current resource and management situation in the region, coastal State responsibilities, flag State responsibilities, port State measures, regional capacity building, and strengthening MCS systems. Mr Salmon displayed a chart of the organizational structure of the RPOA, noting that the Secretariat played a vital role.

294. The participating countries are Australia, Brunei Darussalam, Cambodia, Indonesia, Malaysia, Papua New Guinea, the Philippines, Singapore, Thailand, Timor-Leste and Viet Nam. All the countries bring different things to the table. Some have more (or less) IUU activity. Some, such as Australia, can contribute aerial surveillance or other tools. The parties work closely and have trusting

relationships. There is a significant overlap in membership with the CTI, so that may be a good opportunity for collaboration. The RPOA also has subregional groups for MCS, each of which meets regularly and is making steady progress.

295. The programme and activities of the RPOA are tailored to the national plans of action of the countries and are designed to meet their needs, including follow-up on assessments and actions related to international and regional instruments. Other activities include strengthening fisheries legislation and developing a guidance to strengthen fisheries management at all levels. Trainings on capacity building and port State measures have had many participants. Countries requested help with regulations on port State measures in particular, as they were concerned that they would not meet the standards. Mr Salmon said he had observed some signs that these activities had helped, including countries paying greater attention to suspicious behaviour in ports.

296. With respect to coastal and flag State responsibilities, activities have included information exchange, maintenance of an IUU list, and development of procedures for listing and delisting IUU vessels. Building and maintaining the IUU list is a challenge. Boats with new names sometimes slip through the cracks. However, there are also examples of vessels that have been detained for long periods, to the detriment of IUU companies. Another positive sign is the curtailment of illegal offloading of Patagonian toothfish.

297. To strengthen MCS, the RPOA Secretariat has developed and adopted the MCS Training Curriculum and developed a matrix of MCS issues to guide the work of the networks. A funding strategy to support regional MCS courses is also being developed. The RPOA Secretariat also facilitates regular subregional MCS meetings and monitors their progress.

298. The presentation prepared by Ms Kusuma also highlighted a few programmes under the RPOA including the RPOA MCS Network, which was agreed in 2008. Mr Salmon did not have time to fully explain all of these, but he summarized some important aspects of the RPOA. The fact that the RPOA is voluntary is an important aspect. Moreover, it does not matter whether participants are members of RFMOs or CCAMLR. By reaching more vessels for inspections, the chances for good outcomes increase significantly. The MCS practitioners are now seeing more fraudulent paperwork and bogus flags, which inspections might detect. Regarding requests for information from the Secretariat, the rule is that any country detecting an IUU vessel should describe the situation and report back about follow-up; if an IUU vessel has moved on, other countries need to be notified. Finally, Mr Salmon emphasized the importance of information exchange, stating that all of the other activities of the RPOA depended on it.

Capacity Development and Awareness Raising of Global Initiatives

299. The second presentation of the final session was made by Alicia Mosteiro, MCS Operations Specialist and Global Record Technical Manager, FAO, who spoke about general principles of capacity development, a capacity development framework, and international initiatives including the PSMA and the Global Record.

300. Ms Mosteiro began by defining the terms capacity and capacity development, both of which have three dimensions. Capacity refers to the ability of people, organizations and society as a whole to manage their affairs successfully, and the definition of capacity development is the process of unleashing, strengthening and maintaining such capacity. FAO seeks to create an enabling environment, including for building functional capacity and technical capacity in the broad area of fisheries. Local partnerships are crucial to drive capacity assessments and create a sense of ownership thus leading to sustainability.

301. There are numerous capacity development intervention modalities, as no single modality can fully address any given need. Ms Mosteiro did not review all of these, but noted that specific workshops and information campaigns were often implemented. Global capacity development initiatives must be phased in, involve national and regional stakeholders, and follow regions for a number of years in order to ensure that actions become sustainable. There is an opportunity for combined capacity development for global initiatives as several instruments and tools developed by FAO show strong synergies among them. The PSMA, Global Record, and other international regulations and policies that focus on different aspects of fishing and markets are some examples. In this regard, it is worth noting that the UVI, or the IMO number, can act as a link throughout all these initiatives.

302. With regard to the PSMA and the Global Record, FAO has developed a regional capacity development framework based in three main interventions. These are: awareness raising (for example, through promotional materials and questionnaires); assessment, which can be done through gap analyses to find strengths and weaknesses where work plans for priority actions can be drawn from; and implementation of activities, for which there are many modalities, including workshops, pilot programmes and technical assistance. The promotion component of the Global Record is one example of awareness raising on the detrimental effects of IUU fishing and how the Global Record and UVI can help counteract them.

303. The specific objectives of a PSMA capacity development intervention include: (i) facilitating the accession to the PSMA so as to bring it into force as soon as possible and as widely as possible; (ii) contributing to the development of national capacity and maximizing the benefits available through effective use of the PSMA; and (iii) promoting bilateral, subregional and regional coordination for effective PSMA implementation. Under the FAO PSMA capacity development programme, two workshops have already taken place in Bangkok (2012) and Fiji (2013). The next series of workshops (funded by Norway) are focusing on the Caribbean (Trinidad and Tobago, March 2014), Latin America (Uruguay, September 2014) and Western Africa (to be decided, possibly early 2015).

304. With respect to the Global Record, FAO's capacity development goals are: (i) to consolidate understanding of the Global Record and UVI; (ii) to analyse national registries to identify any changes that may be required for integration with Global Record and to analyse institutional organization of fisheries administrations with regard to vessel registering; and (iii) to understand synergies with other international instruments to fight IUU fishing, and collaboration with other organizations (to support the implementation stage). With respect to national registries and institutions, Ms Mosteiro emphasized that FAO supported preparedness assessment, i.e. whether countries are ready to cooperate with the Global Record and share information internationally and upgrade for implementation. To date, FAO has conducted two Global Record capacity development workshops in Central America (Puntarenas, Costa Rica, in 2010, and San Pedro Sula, Honduras, in 2012), in cooperation with the regional organization OSPESCA and financed by the United States of America (a follow-up is planned as funds become available). Subsequently, another workshop was conducted in the Southeast Asian region (Manila, the Philippines, in 2013) in cooperation with the RPOA and financed by the Republic of Korea. The Global Record Programme has also developed a solid communication and collaboration with the General Fisheries Commission for the Mediterranean, as both are based in Rome, making coordinated actions in this region straightforward. In order to avoid conducting too many separate workshops and be more cost-effective, whenever possible, FAO intends to establish synergies with other initiatives with the same objective of fighting IUU fishing. In this regard, the Global Record Programme planned to participate in the PSMA workshop scheduled for the Caribbean Region in Trinidad and Tobago, March 2014, and possibly the subsequent PSMA workshops.

305. The Global Record capacity development interventions support the development of a work plan containing actions needed at the national and regional level, and on the short and long term as part

of an implementation strategy for the Global Record in the region. Moreover, a complete gap analysis of the institutional, human resources and infrastructures, register, and data processing components has been prepared to help guide the process by identifying areas that need further work. Specifically, some needs identified in previous capacity development interventions include: (i) at national the level: adjustments to registers, especially where there are still paper registers, automation of processes, enhanced collaboration among national agencies (maritime, fisheries, etc.), legal reforms, etc.; and (ii) at the regional level: enhance communications, harmonization and cooperation with other regional bodies, further guidance on the application of the UVI, a regional diagnosis, etc.

306. Although many good examples of regional cooperation were presented at the 4th GFETW, Ms Mosteiro observed that many times these regions do not collaborate with one another. As the next step, FAO would like to see transregional and global cooperation to really close the gap on IUU fishing.

MCS Needs of Developing Countries

307. The third presentation of the tenth session was delivered by Kofi Agbogah, Program Director, Coastal Resource Centre, Ghana, concerning the MCS needs of developing countries, particularly West African nations, and a plan of action to address these.

308. In Ghana, as in many West African countries, power and authority to manage the fisheries are centralized and rest in the hands of the government. The Ghana Fisheries Commission was initially set up to increase fish production and profitability, so a lot was allowed to happen in order to bring in more fish. Open access and poor controls allowed many foreign fishers to come in and harvest fish from West African territories. The EEZs of these countries are too large to be effectively monitored by the fisheries institutions and other state security agencies such as the navy. In Ghana, until recently, the navy has looked for security threats, not fishing violations. The west coast has become notorious for IUU fishing and drug and human trafficking. Low probability of detection and minimal penalties provide no disincentive to fish illegally. Instead, illegal gains reinforce the behaviour. All of this boils down to inadequate governance in the fisheries sector.

309. Governance of fisheries is lacking in many respects, including inadequate structures for fisheries management, low political commitment, interference in law enforcement, and a status quo benefiting the elite. Further to political commitment, the government has played political football with fisheries; the department keeps changing from department to ministry and back to department. One example of interference in law enforcement is that some offenders have benefactors in high places, and one phone call can result in the release of an arrested person or vessel. Other inadequacies with respect to governance are weak legal and regulatory frameworks and a lack of clarity of legal provisions in the fisheries law. Finally, MCS efforts are new and lack sufficient financing and staff. Meanwhile, illegal fishers are taking advantage of the situation amid the confusion.

310. Mr Agbogah identified cooperation and networking as two key strategies to strengthen MCS across West Africa. National consciousness of the impact of IUU on communities needs to be increased. The Government cannot do this alone, so many in civil society have taken up the task. In Ghana, the latest vessel registry published pointed to many inaccuracies, suggesting information was outdated.

311. Mr Agbogah highlighted the following as key issues:

- Port State measures need to be improved.
- Civil society organizations and other non-traditional fisheries management institutions need to support governments in fisheries management.

- Licensing regimes for vessel construction and registration need to be streamlined. In Ghana, boats are being constructed for semi-industrial uses without prior knowledge of the Fisheries Ministry. It is only when they are to be registered and ready for use that the Ministry becomes aware of them. The law mandates that the Ghana Maritime Authority controls vessel construction.
- Regional cooperation must be enhanced, including overcoming obstacles. Within the West Africa subregion, language barriers do not allow for effective communication, and regional meetings to discuss MCS and IUU are non-existent. While some West African countries have the will to fight IUU fishing, others do not. This allows vessels to commit offences in one country and escape to another with impunity. These issues can be so politically sensitive that they are not discussed.

312. The choice of technology for MCS operations is abundant, which is one positive factor. However, the first step is to secure the basic equipment. A recent training for MCS operatives in Ghana through the African Winds project revealed that simple mesh gauges were not available to MCS staff there. Following the training delivered by MCS experts from the International MCS Network in the framework of the African Winds operation, the Network coordinated the delivery of 20 mesh gauges from the fisheries enforcement agency of the Netherlands to Ghana. Mr Agbogah called for support, the use of low-cost technologies and the involvement of citizens in the monitoring and reporting of IUU activities at sea.

313. Mr Agbogah also called on West African countries to develop a strategic plan of action for landings at port with different approaches for artisanal fishers, trawlers and other industrial vessels, with deterrence and strict law enforcement as key strategies. For trawlers, a very good register and enforcement of the rules are needed. Observers and inspectors must go on board, and they should be compensated by States, not industry. Both VMSs and AISs are also useful tools. Mr Agbogah noted there was an AIS training course occurring at that moment. To monitor other industrial vessels, due diligence is very important as is working together with the International MCS Network and other organizations. The plan of action should emphasize incremental low-cost solutions and strengthening of capacity to apply internationally agreed measures.

314. In conclusion, effective MCS requires strong communication and capacity building of practitioners. Practitioners need to work together at the national and regional levels. West Africa is far behind other regions that have already adopted treaties, such as the Caribbean, Pacific and Indian Ocean. Mr Agbogah encouraged participants to push West African Governments on these issues.

Overview on WWF's Efforts to Curb IUU in CEA/SWIO/NIO Region

315. Manuel Castiano, Policy Officer, World Wildlife Fund (WWF) Smart Fishing Initiative, gave a brief overview of regional efforts to curb IUU fishing in Mozambique and the Southwest Indian Ocean (SWIO) region.

316. As the former Head of Ministry of Fisheries in Mozambique, Mr Castiano attested to the significant work on regional cooperation that has been occurring since 2000. In 2006, Mozambique conducted a regional MCS project with the Southern Africa Development Community, with financial support from the European Union (Member Organization), which had good results in several areas on MCS. However, without further financial support, after the project concluded, the countries went back to working separately. That case was disappointing, but, in 2008, the Ministers in the region sent a strong positive signal by means of a declaration against IUU fishing. At about the same time, the IOTC ministers also signed a declaration to combat IUU fishing. The most important aspect of these

ministerial actions was the commitment to establish a regional MCS centre, which will be located in Mozambique. Now, the sustainability studies have been drafted, and the region is searching for funds to kick off regional activities. The SmartFish Programme and the WWF are also doing important work in the region on traceability and transparency.

317. As background, Mr Castiano explained that IUU fishing was an old problem that occurred in all regions. While IUU activity is concentrated in developing countries, the markets are in Europe, the United States of America, China and Japan. New technologies and information-sharing mechanisms are now available, which open the door for further regional and international cooperation on MCS.

318. Many in the region are advocating for ratification of the PSMA, which is considered a cost-effective tool to combat IUU. Mr Castiano listed the nine parties that had at that time ratified the PSMA, calling them the "big nine", and noted that other countries had promised rapid ratification, including Mozambique and other African nations. It was expected that more than nine countries would have ratified by now, in light of a technical meeting where there was much enthusiasm and near consensus. Thus, the slow response is frustrating. Some RFMOs are concerned about this and are trying to make the PSMA mandatory.

319. To facilitate regional cooperation on MCS, Mr Castiano recommended promoting sharing of information, VMS cooperation, and enhancing the legal mandates of RFMOs. Some governments are resistant to sharing information, so the question is how to overcome this resistance and move to a sharing platform.

320. TRAFFIC, a wildlife trade monitoring network of which WWF is a member, is working with the IOTC to allow for trade data to be checked. Trade data analysis can be a cost-effective tool to find linkages to IUU activities. TRAFFIC is developing a website to compare catch data and import/export records. This will allow governments, NGOs and others to peruse the data from different countries, comparing the export record of one against the import record of another.

MCS Cooperation in the Eastern Tropical Pacific

321. The fourth presentation of the session was made by Marco Quesada, Costa Rica Program Director, Conservation International. Mr Quesada began with the observation that the natural capital of most of the ocean was owned by all nations and considered the common heritage of humankind. The seas were not always regarded as common property, but were thought of as resources that could not be depleted. Now the world is very connected, and the view is different. Currently, IUU fishing threatens global, regional, and national natural capital, and, in doing so, endangers long-term human livelihoods. OSPESCA wants to emphasize at the GFETW the importance of MCS for small-scale artisanal fisheries and the different grades of IUU fishing.

322. Mr Quesada identified five major driving forces for how the oceans are used, one of which is human population growth. New technology for fishing is another driver, and criminals use these technologies as well. Two other drivers are depletion of resources and growing conflict among users. In Central America, they have noticed that overexploitation of resources leads to conflicts. Some of these arise between countries, and sometimes conflicts occur between multiuse areas, such as fisheries and tourism. The last factor affecting ocean use is advances in human understanding of natural systems and the impacts of human activities.

323. Mr Quesada displayed a series of maps in his presentation. One map showed concentration of IUU vessels between 1980 and 2003. Even with advanced knowledge and technology to track vessels,

the authorities have no idea where many of them go and what fish they are taking. He showed another map outlining the EEZs in the Eastern Tropical Pacific, and two other maps focused on marine life, one of which showed sea turtle tracking. Data collected have helped fill gaps in knowledge about species such as sharks, and there is now a better understanding of how they move in mass convergence zones. This facilitates both legitimate and illegitimate fishing efforts. Last, he showed a map of Costa Rica's EEZ, which is 11 times the size of its terrestrial land mass, due in large part to the area around Cocos Island. Although it is sometimes difficult to scientifically assess changes in marine life from the past, some historical sources provide anecdotal "baselines" for Cocos Island. In 1793, explorer James Colnett reported a prodigious quantity of fish, but he said it was hard to catch them owing to the ravenous sharks, including one that was 18–20 feet (about 5.8 m) in length. Similarly, George Vancouver reported sharks of three distinct types, including numerous beautifully streaked tiger sharks.

324. Relative to other reefs in the Pacific Ocean, Indian Ocean and Caribbean, Cocos Island has the most reef fish. In 2009, President Laura Chinchilla created a marine protected area around the national park that already existed at Cocos Island. From 2004 to 2009, the country spent a lot of money trying to prevent illegal activities and support lawful and responsible activities. Traditionally, the environment authority would only make limited requests, such as for new radar. Thus, Conservation International had to work with government authorities and bring them on board with more ambitious undertakings. There is typically not any one obvious technical solution for MCS, so there needs to be a dialogue and negotiation process.

325. The question of the best way to control the Cocos Island area still remains. Conservation International is working with the Government of Costa Rica, which favours MCS efforts. The fishers in this area are mostly the larger tuna purse seiners and longline vessels. Sometimes, Costa Rican fishers now must go farther out in international waters, and fishers from other regions are doing the same. There are also many vessels coming from other jurisdictions for other activities, such as drug trafficking. Costa Rica is part of the marine corridor for trafficking, and much money is being invested to fight this too.

326. As to the PSMA, Costa Rica is working on this through local institutions. It is trying to harmonize regulations of different ports and endow authorities with tools and measures for control, because this is ultimately the responsibility of governments, not NGOs. Conservation International accompanied the Costa Rican delegation to the most recent COFI meeting, which was constructive. However, translating these lessons to the local level is a huge challenge. Costa Rica's Secretary of Security also hosted an INTERPOL meeting, which led to the creation of the fourth NEST in the world, which is about to be signed. This NEST will be able to assist in issuing purple notices for problems occurring locally, such as attempts to circumvent the shark finning ban.

327. Some regional efforts have included working with Ecuador. Many vessels are literally fishing on the line around the Galapagos protected area. INCOPESCA, OSPESCA and others also met together to try to work out an agreement on IUU. This shows significant progress. Many colleagues are working hard on this subject matter. The authorities are also about to set up radar in Cocos Islands. For fishers, having their boats equipped with radar can also be useful if they run into trouble or become lost at sea. In Costa Rica, there is also a lot of illegal small-scale fishing, for example, animals caught for bait without permission.

328. Mr Quesada reviewed a few key points, including the need for effective involvement of government. He said that at all times there should be leadership by government institutions, although

NGOs can play important roles. Multiple layers of information and integration are needed. The problem of IUU cannot be solved from the perspective of one industry; rather, it must be considered on a large scale, and all resources brought to bear. Going forwards, questions to consider include: "What scale?", "Which mechanisms?", and "What do IUU and PSM mean at different scales?" To conclude, Mr Quesada paraphrased Edward Wilson who said that forests can be depleted by bulldozer or one tree at a time. This principle applies to fishing too, so it is necessary to address both types of depletion.

The Fight against Illegal Fishing: the Spanish Experience

329. The final presentation of the session and of the Workshop was made by Carlos Domínguez, Secretary General for Fisheries, Ministry of Agriculture, Food and Environment, Spain, who shared Spain's experiences in implementing international standards to combat illegal fishing over the last two years. Based on these, he offered strategies for overcoming difficulties and made a few recommendations for changes to current models and paradigms.

330. The Government of Spain believes no effort to fight IUU fishing should be carried out in isolation, that cooperation and integration are essential to reach its goals. However, Spain is unique as it integrates different roles of flag, coastal, port and market State. Spain monitors all its vessels, about 95–96 percent of which operate only in Spanish waters. Mr Domínguez acknowledged that discussions related to some of these themes were incendiary, which is why he wanted to present constructive solutions. Although there is illegal fishing at artisanal levels, what is needed fundamentally is international cooperation to prevent IUU fishing with impunity. This entails fighting against FOCs that do not control vessels. INTERPOL's initiatives can be useful for sharing information in this regard, although Spain does not believe that all fisheries infractions should be considered crimes. All States are working to define what constitutes crime in their own jurisdictions, including their EEZs.

331. Two objectives driving the fight against IUU fishing are to avoid unfair activities by operators pursuing unregulated activities in violation of rules and to conserve resources that all people use so as to guarantee sustainable fishing. Spain's first initiatives against IUU date back about 15 years when it first started developing regulations and rules to prosecute vessels. Other unilateral measures Spain took included subjecting landings and other imports to an authorization process and investigating beneficial ownership of fishing vessels. Spain also maintains a register, which is why it recognizes the importance of the Global Record, to know more about the vessels coming into its ports. In addition, species identification through DNA analysis is being used to avoid fraud.

332. The key to fighting IUU fishing is transparency. In 2012, when the current fisheries administration began, it worked to increase transparency with respect to Spain's role as a flag State. Elements of trying to control flagged vessels include satellite tracking, licensing and authorization, and real-time control of catches. With respect to VMSs, Spain has about 2 000 vessels larger than 15 m with VMS active at all times, which allows it to see when they are fishing. The Spanish Fisheries Monitoring Centre operates 24 hours a day and issues automatic warnings to any vessels approaching areas they are not supposed to. Spain issues private licences for fishing in other countries, the authenticity of which must be verified by Spanish embassies. The embassies must also verify payments to treasuries of other countries. This is not a legal requirement in the European Union (Member Organization), but Spain hopes it will become standard, which could perhaps be facilitated through networks such as the International MCS Network and among flag States.

333. Through the Spanish Fisheries Reform Act, set to come into force in 2014, legal entities related to Spain and Spanish-citizen crew members can be prosecuted or fined. In this regard, Mr

Domínguez was pleased to announce that Spanish crew members of the *Thunder*, also known as the *Cougar*, who were caught engaged in IUU fishing, would be fined and would lose their permit as a result of cooperation between Spain, Australia and Chile.

334. Spain has also worked to increase transparency as a port State. Twenty percent of fishery product imports into the European Union (Member Organization) enter through Spanish ports. Spain follows this organization's regulations, and it also undertakes a risk analysis that places burden of proof on operator that wants to enter the European Union (Member Organization). The existence of a catch certificate does not mean that the product can enter; it may also be subject to investigation and analysis. A mere document is not enough evidence, as Spain has detected forged certificates. The EU IUU Regulation could be improved, but it is the best system available at this time and it must be applied universally. Under this, Spain has denied shipments that do not meet international regulations, and these increased between 2010 and 2013. In fact, Spain has rejected more than 50 percent of total rejected shipments of the European Union (Member Organization). Thus, there is work to be done here for equal participation by other ports in the European Union (Member Organization), an issue of which the European Commission is aware. Spain's policy is not to allow IUU products under any circumstances, so it does not worry about losing business from Las Palmas and other ports.

335. Issues to be resolved include that all borders of the European Union (Member Organization) must exercise the same level of control, and there cannot be ports of convenience. For this, intelligence teams from different States must work in close contact. Coastal nations could contribute to transparency by advertising all the licences they issue. This will help market States such as Spain to identify and reject fish from vessels that are fishing illegally.

336. With respect to the actions of RFMOs, Spain believes they should maintain lists of authorized vessels, that these "whitelists" are more effective than blacklists. As mentioned in an earlier discussion at the GFETW, the blacklist of European Union (Member Organization) is not very long and only contains those vessels already listed by RFMOs. Using a whitelist would mean that if a vessel cannot prove it has fished legally, then it cannot import into the European Union (Member Organization). Spain also wants to see improvement in the Global Record by FAO and will contribute to this.

337. With respect to NGOs, there was much mistrust in the past, but Spain has made an effort to change this. For IUU fishing, it has been working with the EJF in Las Palmas, as well as The Pew Charitable Trusts, WWF and others. Spain wants to collaborate to identify problems, create joint ideas and raise public awareness.

338. Finally, a few actions need to be advanced in the European Union (Member Organization), including greater coordination and greater transparency, especially in developing the annual report for member nations and those authorized to export. The European Union (Member Organization) can also take a greater role in real-time monitoring. Port States should not fear being firm and strict in rejecting imports that do not meet international standards.

Discussion, comments, questions and answers

339. Questions and comments were made regarding the following:

- Whether the Southeast Asia RPOA cooperates with other bodies and organizations.
- Cooperation between fisheries enforcement authorities and antimoney-laundering efforts.
- The idea of a global catch certification scheme.
- Potential, in this regard, for action by the member States of the UN or members of FAO at the COFI meeting.

APPENDIX 1

Workshop Agenda

4th Global Fisheries Enforcement Training Workshop
17–21 February 2014

Protecting Artisanal and Regional Fisheries Communities through the Promotion of Legal, Reported and Regulated Fisheries

Sunday, 16 February

16:00-20:00 Registration

17:00-18:00 Facilitator Meeting

Monday, 17 February

Monday Morning: Opening

Opening Facilitator: Cephas Ralph, Chair, International MCS Network

8:00-9:45 Registration

10:00-10:05 Costa Rican National Anthem

10:05-11:05 Opening Ceremony

10:05-10:15 Chair Cephas Ralph, International MCS Network

10:15-10:25 Secretary General Hugo Martinez, SICA

10:30-10:40 Cultural Act: Buenaventura Corrales School

10:45-10:55 Minister of Agriculture and Livestock Costa Rica, Gloria Abraham

10:55 -11:05 Signing of the decree "Tuna fishing licenses banning the use of FADs in the waters of Costa Rica"

11:05-11:15 President of Costa Rica Laura Chinchilla

11:15-11:40 Group Photo

11:40-13:10 Lunch

Monday Afternoon: Keynote Speech

13:10-14:00 **Keynote Speaker**, Johàn Williams, Chair, FAO-COFI, Norwegian Ministry of Trade, Industry & Fisheries

Monday Afternoon: Regional MCS Cooperation

Session 1: "Regional Cooperation between Coastal States"
Facilitator: Guillermo Compeán, Director, IATTC

14:00-14:15 **The Tanzania Experience with MCS**
Geofrey Nanyaro, Chairperson, Stop Illegal Fishing

14:15-14:30 **Artisanal and Small Scale Fisheries Experiences in Central America**
Mario González, Regional Coordinator of SICA/OSPESCA

14:30-14:45 **Monitoring Fisheries Activities in EEZs of Pacific Island States**
Mike Pounder, Surveillance Operations Officer, FFA

14:45-15:15 **Discussion, comments, questions and answers**

15:15-16:00 Coffee Break

Session 2: "Regional Cooperation on the High Seas - RFMOs"
Facilitator: Luis Dobles, Executive President, INCOPESCA- Costa Rica

16:00-16:15 **A New Approach to Understanding Trends & Capacity in IUU Fishing in the Southern Ocean**
Sarah Lenel, Fishery Monitoring and Compliance Manager, CCAMLR

16:15-16:30 **Compliance and Regional Cooperation in the EPO**
Guillermo Compeán, Director, IATTC

16:30-16:45 **Regional Cooperation - ICCAT**
Chris Rogers, NOAA Fisheries Service, Office of International Affairs

16:45-17:15 **Discussion, comments, questions and answers**

Monday Evening: Dinner – 19:00

Tuesday, 18 February

Tuesday Morning: Cost Effective Fisheries Enforcement

Session 1: "Cost Effectiveness of MCS"
Facilitator: Dean Baigent, Director Compliance, Ministry for Primary Industries New Zealand

8:45-9:00 **Cost of IUU and Cost Effective MCS**
Randy Jenkins, Director, National Fisheries Intelligence Service Canada

9:00-9:15 **Low-Cost Fisheries MCS Tools**
Kim I. Mallalieu, Senior Lecturer, University of the West Indies

9:15-9:30 **Cost Effective Maritime Monitoring using Space Based Technology**
Jeff Hurley, Business Development Manager, MDA, Canada

9:30-10:00 **Discussion, comments, questions and answers**

10:00-10:15 Coffee Break

Session 2: "New MCS Technologies and Methodologies"
Facilitator: Jacques Verborgh, Acting Head of Unit, Fisheries Conservation and Control, Atlantic and Outermost Regions, Directorate General for Maritime Affairs and Fisheries, European Commission

10:15-10:30 **Smart and Cost Effective MCS**
Glen Salmon, National Compliance Operations Unit, Australian Fisheries Management Authority

10:30-10:45 **Full Catch Documentation Based E-logbook and E-monitoring**
Søren Palle Jensen, Senior Fisheries Officer, Danish Agrifish Agency

10:45-11:00 **E-Monitoring**
Maria Jose Pria, EM Project Manager, Archipelago Marine Research

11: 00-11:15 **Use of UAVs as an MCS Tool**
Thomas Snitch, Distinguished Senior Professor, Institute for Advanced Computer, Studies University of Maryland

11:15-11:45 **Discussion, comments, questions and answers**

11:45-13:00 Lunch

<u>Tuesday Afternoon: Tackling Trans-National Fishing Crime</u>

Facilitator: Todd Dubois, Assistant Director, NOAA Office of Law Enforcement

13:00-13:15 **Using Open Source Intelligence to Counter IUU Fishing: Exploration of Open Source Resources and Networks of MCS Practitioners**
David Pearl, Foreign Affairs Specialist, NOAA Fisheries Office of International Affairs

13:15-13:30 **Container Control Programme**
Ian Munro, Law Enforcement Advisor, Anti-organised crime and illicit drug trafficking, Implementation and Support Section, UNODC

13:30-13:45 **Assessing Organized Crime in Fisheries**
Theodore Leggett, Studies and Threat Analysis Section, UNODC

13:45- 14:15 Coffee Break

14:15-14:30 Understanding the U.S. Executive Order on Wildlife Trafficking
Stuart Cory, Special Agent, NOAA Office of Law Enforcement

14:30 -14:45 Intelligence Work – Needs in Light of Capacity Building
Tor Glistrup, INTERPOL Fisheries Crime Working Group and Norwegian Ministry of Fisheries

14:45-15:00 INTERPOL Efforts to Combat Fisheries Crime
Bradley Soule, INTERPOL Environmental Crime Programme

15:00-15:30 Discussion, comments, questions and answers

Tuesday Evening:

17:00-19:00 Workshop on Regional Cooperation against IUU Fishing
Hosted by Pew Charitable Trusts, in partnership with Costa Rica Ministry of Agriculture and Costa Rican Fishery and Aquaculture Institute

19:00-20:30 International MCS Network Business Meeting
Business Meeting is open to all official members of the Network

Wednesday, 19 February

Field Trip *The Field Trip cost is covered by registration fees. All attendees must pre-register with the IMCS Network in order to attend the field trip.*

7:00 Departure from Wyndham Herradura Hotel to Central Pacific
9:00 Talk by CoopeTarcoles
10:15 Departure from CoopeTarcoles
10:30 Arrival at Hacienda Nosavar
11:00 Departure to Tarcoles River Tour and "Carreta" Tour
13:00 Lunch at Hacienda Nosavar
14:00 Departure to Carara National Park
14:30 Tour at Carara National Park
16:00 Departure from Carara National Park
18:00 Arrival at Wyndham Herradura

Thursday, 20 February

Thursday Morning: International Initiatives

Session 1: "International Cooperation"
Facilitator: Terje Lobach, Directorate of Fisheries, Norway

9:00-9:15 **Flag State Requirements: Guidelines on Flag State Performance**
Johann Augustyn, Chief Director Fisheries Research and Development, South Africa

9:15-9:30 **Port State Control**
Fabio Hazin, Universidade Federal Rural de Pernambuco, Department of Fisheries and Aquaculture, FAO-COFI First Vice-Chair, Brazil

9:30-9:45 **Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels**
Ari Gudmundsson, Fishery Industry Officer, FAO

9:45-10:15 **Discussion, comments, questions and answers**

10:00 -10:30 Press Conference

10:15-10:30 Coffee Break

Session 2: "Stop IUU Fishing Award"
Facilitator: Michele Kuruc, Acting Senior Vice-President, Marine, World Wildlife Fund

10:30-10:55 **2014 Stop IUU Fishing Award Celebration**

Stop IUU Fishing Award Introduction

Award Ceremony

10:55-11:40 **Presentation of Winning Entries**

Third Place Winner

Second Place Winner

First Place Winner

11:40-12:10 **Discussion, comments, questions and answers**

12:10-13:00 Lunch

Thursday Afternoon: Partnerships, Sponsorships and Technical Assistance

Session 1: "Multilateral Initiatives"
Facilitator: Bjarne Schultz, Directorate of Fisheries, Norway

13:00-13:15 **Cooperation in Central America**
Otto Wantland, MCS Specialist

13:15-13:30 **European Union Action towards the International Fight against IUU Fishing**
Adela Rey Aneiros, Policy Officer – IUU, European Commission, DG Maritime Affaires and Fisheries

13:30-13:45 **Pacific Coral Triangle Initiative**,
Todd Dubois, Office of Law Enforcement (OLE), National Oceanic and Atmospheric Administration (NOAA), United States

13:45-14:00 **Seven Years of Regional Cooperation in the Indian Ocean**
Mauree Daroomalingum, Director of Fisheries, Mauritius

14:00-14:30 **Discussion, comments, questions and answers**

14:30-14:45 Coffee Break

Session 2: "Partnerships and Bilateral Cooperation"
Facilitator: Alejandro Covarrubias, Head of International Affair Unit, SERNAPESCA, Chile

14:45-15:00 **Regional Cooperation in Control and Surveillance Fishing in the Framework of OLDEPESCA**
Angel Rivera Benavides, Executive Director, OLDEPESCA

15:00-15:15 **Prosecution of Fisheries Violations in Ghana's Western Region**
Kofi Agbogah, Program Director, Coastal Resources Centre, Ghana

15:15-15:30 **Brokering Cooperation between MCS Authorities**
Cephas Ralph, Chairman, International MCS Network

15:30-16:00 **Fish-i Indian Ocean**
Kristín Gunnarsdóttir von Kistowski, Senior Advisor, The Pew Charitable Trusts
Per Erik Bergh, Project Coordinator, Stop Illegal Fishing

16:00-16:30 **Discussion, comments, questions and answers**

Thursday Evening: Reception and Dinner

19:00-21:00
Ceremony facilitated by Cephas Ralph, Chair, International MCS Network

Chair FAO-COFI Johan Williams

FAO Representative for Costa Rica José Emilio Suadi

Costa Rica Vice Minister of Agriculture and Livestock Xinia Chaves

Friday, 21 February

Friday Morning: Promotion and Funding Capacity Building

Session 1: "Capacity Building in Practice"
Facilitator: Carlos Domínguez, Secretary General for Fisheries, Ministry of Agriculture, Food and Environment, Spain

9:00-9:15 **Cooperation in SE Asia (RPOA)**
Ida Kusuma Wardhaningsih, Executive Secretary, Directorate General of Surveillance for Marine and Fisheries Resources

9:15-9:30 **Capacity Development and Awareness Raising of Global Initiatives**
Alicia Mosteiro, MCS Operations Specialist/Global Record Technical Manager, FAO

9:30-9:45 **MCS Needs of Developing Countries**
Kofi Agbogah, Program Director, Coastal Resources Centre, Ghana

9:45 – 10:00 **Overview on WWF's Efforts to Curb IUU in CEA/SWIO/NIO Region**
Manuel Castiano, Policy Officer, WWF Smart Fishing Initiative

10:00-10:15 Coffee Break

10:15-10:30 **MCS Cooperation in Eastern Pacific**
Marco Quesada, Costa Rica Program Director, Conservation International

10:30-10:35 **Combatting Illegal Fishing: The Spanish Experience**
Carlos Domínguez, Secretary General for Fisheries, Ministry of Agriculture, Food and Environment, Spain

10:35-11:05 **Discussion, comments, questions and answers**

11:05-12:00 Closing

APPENDIX 2

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APPENDIX 3

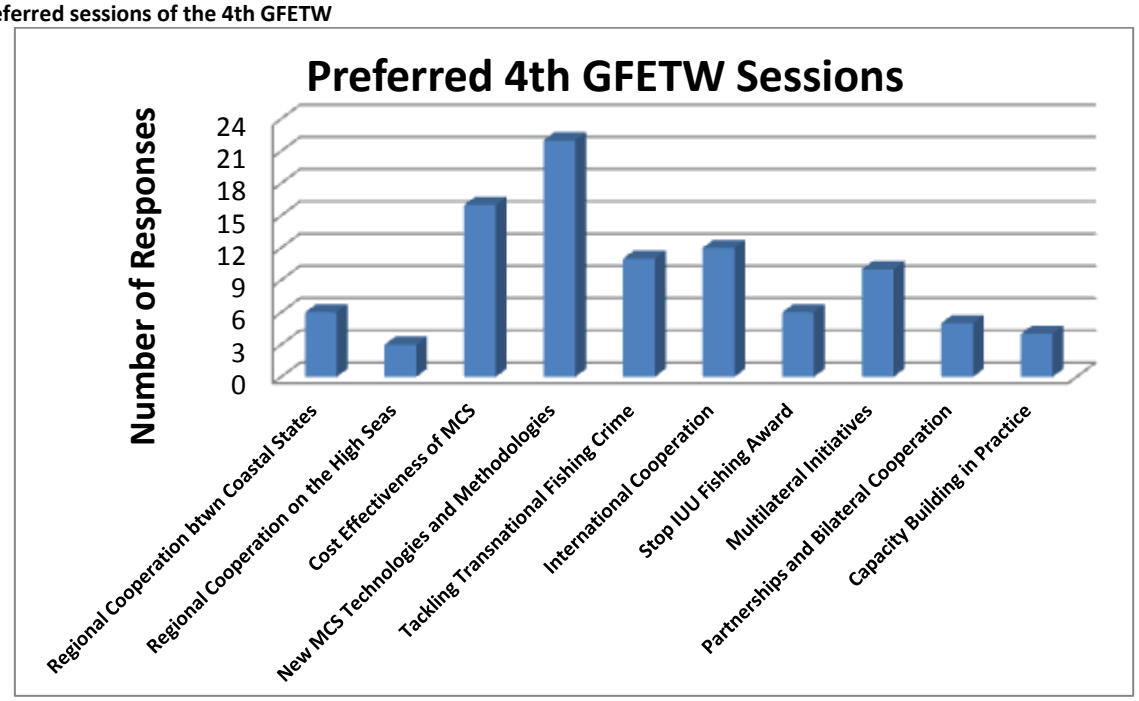
Summary of evaluations

The 4th GFETW participants were asked to complete an evaluation of the usefulness and applicability of the ten sessions within the Workshop to their work. A total of 36 evaluations were filled out anonymously and returned to the International MCS Network Secretariat, representing a response rate of 26 percent. A copy of the questionnaire appears at the end of this summary.

CONTENT (THEMES)

The first question was: "What three sessions were the most useful to your country or organization?" As each session was composed of 3–6 presentations, some participants identified the individual presentations they found the most useful instead of sessions. Figure A3.1 was extrapolated from both types of responses. It shows that every session was identified as among the most valuable by at least a few participants. This reflects the wide spectrum of interests and perspectives represented at the Workshop.

Figure A3.1
Preferred sessions of the 4th GFETW



Note: **The ten Workshop sessions listed in the order they were convened.**

The two sessions that were ranked highly by the most participants were "New MCS Technologies and Methodologies" and "Cost-effectiveness of MCS". These were the fourth and the third sessions, respectively. Both occurred on Tuesday morning, and both fell under the theme of cost-effective fisheries enforcement.

Within the most-preferred session, "New MCS Technologies and Methodologies", the presentation singled out as the most interesting by many was "The Use of Unmanned Aerial Vehicles (UAVs) as an MCS Tool", delivered by Thomas Snitch. This presentation focused on the work of Mr Snitch's team in developing algorithms to determine aerial routes for UAVs targeting activities such as land-based animal poaching. They plan to extend their work to marine environments, and pilot projects are on the horizon, possibly in collaboration with other 4th GFETW participants. The session also encompassed the topics of e-monitoring, e-logbooks and strategies to encourage vessels to come into compliance.

The session preferred by the second-largest number of participants, "Cost-effectiveness of MCS", emphasized practical MCS solutions, including both low-cost community-based strategies and approaches incorporating space-based technology. As one participant noted, the sessions he/she favoured were those that provided tangible options to implement tools to better control and monitor fisheries. On a similar rationale, some participants singled out presentations from other sessions as helpful, including those made by the winners of the Stop IUU Fishing Award contest and the presentation on "Open Source Intelligence to Counter IUU Fishing", in which the speaker drew the audience's attention to multiple web-based tools and services, most of which are freely available.

The third-most preferred session "International Cooperation" included topics on flag State requirements, port State control, and the Global Record of Fishing Vessels. In contrast to the other two popular sessions, this one focused on global initiatives being undertaken to enable and enhance MCS activities at all levels. Emphases were placed on the need for more countries to ratify the Port State Measures Agreement so it can enter into force and developments with respect to Unique Vessel Identifier numbers.

The questionnaire also asked participants to identify the three sessions of least value to their countries or organizations. Twelve respondents declined to identify sessions of least value or replied that all sessions were useful. Of those who did list sessions, some said that they already possessed certain knowledge. However, some of the sessions they critiqued were ranked highly by other 4th GFETW participants.

The questionnaire did not specifically ask what additional themes or topics would be useful, but a few participants made suggestions, including:

- incentive-based compliance approaches, to which many nations are switching;
- in-depth discussion or session on market forces driving illegal fishing as well as market flows and which countries are connected by flag, coast, port and/or market;
- additional content on technical assistance for inshore fisheries;
- MCS considered on a wide range of what is regarded as artisanal fishing in different regions or nations (too much focus on only large-scale vessels this time);
- the link between developed versus developing States, and the realities of capabilities and budgets of developing countries.

STRUCTURE AND DELIVERY OF CONTENT

While participants on the whole rated the themes and the quality of presentations and speakers highly, many had suggestions for the overall structure of the Workshop. One common recommendation was to vary the format of sessions between the lecture-style prevalent at the 4th GFETW and interactive break-out sessions, or to punctuate each lecture with a small group discussion of a particular question or scenario. Participants explained that this would support the networking aspect of the conference and result in developing solutions at the regional and national levels. However, even if interaction could have been enhanced, many still praised the 4th GFETW as an outstanding and unique networking opportunity for MCS professionals.

Regardless of specific topic or theme, participants also expressed interest in seeing more case studies highlighting lessons learned. In this regard, the short film about the fishing vessel the *Premier* screened by Per Erik Bergh of FISH-i was cited as a good tool. Participants also expressed interest in seeing short films that demonstrated technology or enforcement methods in action. Some participants also noted that inclusion of case examples or a greater level of detail could have enhanced some of the presentations that they found to be less engrossing.

The following were some specific comments regarding the structure and organization of the Workshop and sessions therein and suggestions to make the sessions more dynamic and to improve networking:

- Have additional sessions for more face-to-face meetings.
- A break-out session focused on specific problems with tangible outcomes would greatly improve the networking and effectiveness of the conference.
- Break-out sessions or subworking groups could make the conference more dynamic and interactive.
- Include an interactive session in which experienced persons could impart ideas to other countries or give advice on specific issues.
- more open discussion of what is not working well and practical measures that can be taken to do something about it.
- More live demonstrations such as films of technology in action, rather than only presentations.
- Include working groups or workshops at each table after each session.
- More discussion and exchange of views among both between speakers in panel discussions and participants in conference at large.
- More case studies, including additional videos on case studies.
- More breaks should be added to allow for specific follow-up and group questions.
- The GFETW should produce conclusions, recommendations, or a declaration, compiling all of the discussion from the Workshop
- The conference should conclude with a declaration of intent, perhaps with some specific undertakings going forward.
- More critical analysis on moving the international forum forwards.
- The sessions should be better organized according to region, theme, etc.
- With respect to themes, deal with global issues first, then regional, then focus on specific issues.
- Facilitators or the chair should have questions prepared that highlight important issues or would better facilitate audience participation.
- Towards the end of the week, some of the presentations were becoming redundant.

In addition, participants indicated that many of the 15-minute presentations packed in too much information, but they disagreed as to whether speakers should be more concise or presentation times should be longer.

TECHNICAL/FACILITIES

Many respondents wrote that the Workshop was well organized and praised the efforts of Katie Fletcher, who oversaw GFETW logistics and assisted many individual participants. However, some areas where technical improvements could be made were noted, including:

- Better functions for displaying the presentations on screen.
- One screen showing the speaker could be helpful.
- Skype presentations need improvement, if necessary at all.
- Presenters should be instructed to speak more slowly in order to allow for better translation.
- Better time-keeping should be emphasized to presenters and enforced by organizers.
- Translation service should be knowledgeable of fisheries terminology and/or provided a list or brief instruction beforehand.
- Translation into Arabic could be helpful and encourage greater participation.
- Better food, although mealtime set-up was nicely done and the vegetarian option was appreciated.
- Evaluations should ask participants about the individual presentations, not just the sessions.

With respect to the field trip, many participants said they enjoyed the visit to the CoopeTarcoles artisanal fishing cooperative, but they were less enthusiastic about the Tarcoles River cruise and Carrara Park visit. One participant recommended an excursion to an industrial fishing port or facility as a future field trip. Another noted that it was good to have the field trip in the middle of the week.

Box A3.1

Questionnaire distributed to participants at the 4th GFETW

Global Fisheries Enforcement Training Workshop
Costa Rica 17 February through 21 February 2014
Workshop Evaluation

Information gathered by this evaluation of the Fourth Global Fisheries Enforcement Training Workshop will enable the International MCS Network to improve and develop future quality capacity building experiences that meet the needs of all current members and MCS practitioners in the wider MCS community. Please take a few minutes to respond to the questions (either on paper) or by email. Return hard copies of the questionnaire to IMCS Secretariat staff upon conclusion of the workshop on Friday 21 February 2014. Email surveys will be available on the website and should be returned to kfletcher@imcsnet.org. Note all responses will be kept confidential.

Evaluation Questions

1. What three sessions of the workshop were most useful to your country or organization? Please add a comment or remarks.

2. What three sessions of the workshop were of least value to your country or organization? Please add a comment or remarks.

3. Were the panel discussions informative? Please add a comment or remarks.

4. Was the workshop format effective? What improvements could be made?

5. Do you have any other comments or remarks?

APPENDIX 4

Opening Speech by Mr Cephas Ralph, Chair, International MCS Network

Distinguished guests, Ladies and Gentlemen, Dear Friends and colleagues,

I would like to welcome all of you to the 4th Global Fisheries Enforcement Training Workshop in San José Costa Rica. This Workshop builds on the success of the previous Workshops in Mozambique in 2011, Norway 2008 and Malaysia 2005. It is becoming a tradition to convene a Workshop every two years and we hope to maintain that momentum in the future.

We have a busy week ahead of us, full of interesting sessions and opportunities for discussion and networking. We will celebrate the first–ever STOP IUU FISHING AWARD, showcasing innovative efforts that inspire other countries and organizations to combat IUU fishing. The session entitled "Tackling trans-national fishing crime" reflects the increasing cooperation between the International MCS Network and the INTERPOL Fisheries Crime Working Group. The FAO has also helped shape the program to focus on enhancing the capacities of developing countries so that internationally agreed measures already in place - such as port state control - can be globally effective.

I am confident that the 4th Workshop will continue to successfully contribute to the fight against Illegal, Unreported and Unregulated fishing activities which is in the interests of all of us. I am convinced that to be effective combating IUU fishing activities must be a global, regional and national priority.

IUU activities undermine the sustainable exploitation of marine living resources which are the livelihood of many artisanal and regional fisheries communities. This is the principle underlying the theme of the Workshop, "Protecting Artisanal and regional Communities through the promotion of Legal, Reported and Regulated Fisheries." It is critical to protect those who derive their living with legal fishing against the greed of some selfish operators who only care about their own financial benefits in the short term.

On behalf of the Network, I would like to thank the Government of Costa Rica for kindly agreeing to host the Workshop. What a privilege it is for us to be working here in such a beautiful country. For many of you it will be your first visit to Costa Rica, but I suspect it may not your last. It is indeed a beautiful country, and my family still talks fondly about the special taste of the coffee which I took home from *my* first visit.

On Wednesday, the participants of the Workshop are invited to visit a fishing cooperative on the Pacific coast to learn about the community's concerns for the future of fishing. As fisheries enforcement practitioners, we have to play our part in ensuring compliance. The international community, regional fisheries management organizations and States can only ensure a sustainable future for fishing communities when fishing is properly regulated and fishing activities are compliant with the legislation and I hope that this conference will a long way to achieving that aim.

Muchísimas gracias a todos por su atención.

APPENDIX 5

Opening Speech by Mr Hugo Martinez, Secretary General of SICA

Ladies and Gentlemen:

From the sister Republic of Costa Rica, as a member of the Central American Integration System (SICA), I would like to greet all of the delegates from various parts of the world that are participating in this 4th Global Fisheries Enforcement Training Workshop of fisheries activities, which, in its various panels, will give particular emphasis to the protection of small scale fisheries communities.

Eight countries: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and the Dominican Republic form this region of the world, in which we have decided to integrate efforts and resources in order to construct a region of peace, democracy, liberty and development. In this way, we also face regional challenges together to ensure the well-being of the population.

In 2010, during the re-launch of the integration process, the Presidents of the Republics of the countries mentioned above defined the thematic priorities for regional action, those being the Democratic Security, the complete management of the risk and climate change, social development, the fight against poverty, economic integration and institutional strengthening.

The Democratic Security of Central America, which is highly related to the concepts of this 4th workshop, is a suitable regional instrument that serves to create an environment of better security among others, to combat crime, and is applicable in all of Central America and thus applicable to the oceans, lakes, lagoons, rivers and reservoirs.

In the aquatic ecosystems of Central America the majority of fisheries resources are of migratory behavior, meaning there are species that live and move within Central American territory and others that inhabit both our waters and international waters. Four-hundred thousand people partake in industrial, artisanal and sport fishing and aquaculture, extracting and cultivating five hundred fifty thousand metric tons annually, which generates revenue of around two-thousand two hundred million dollars per year. According to the last annual regional survey, artisanal fishing is showing significant growth, reporting the amount of one hundred and fifty thousand marine and inland fishermen.

From 2005, an integration Policy has been started, dedicated specifically to fisheries and aquaculture, that contains strategies of planning and development in the management of fisheries resources; one of the strategies dealing with monitoring, control and surveillance, related closely to the rationality of the Democratic Security of the System, developing joint efforts to ensure the enforcement of rules and regulations for responsible fishing both nationally and regionally.

Central America is conscious that the illegal, unreported and unregulated fishing is present worldwide, and is an unjust practice that we should all discourage and eliminate to guard the health of our oceans and our their fisheries resources, especially to protect the future of our artisanal fishers.

Thus, as part of the policy of integration, we have developed various regional events about monitoring, control and surveillance; in particular a model of governance is being promoted with binding agreements expressed through regional regulations, the principles of which relate to this 4th meeting of the International Monitoring, Control and Surveillance Network. Today, regulations in force are: to establish the Regional Registry of Vessels; for the joint management of Caribbean lobster fishing; and to progressively establish the satellite vessel tracking system. Accompanying these regulations is the Code of Ethics for Responsible Fisheries and Aquaculture, and soon the proposal for the Regulations for Illegal, Unreported and Unregulated Fishing will be presented for consideration to the Ministers and will [thereby/thus] be consistent with countries around the world that are fighting illegal fishing.

It was in this context in 2007 that for first time our organization OSPESCA participated in the 2nd Workshop of the International Monitoring, Control and Surveillance Network that took place in Norway. Then in 2011, we participated as co-organizers of the 3rd Workshop carried out in Mozambique. As the result of this participation, it was agreed with FAO and the Network, the 4th Workshop was to be held in Central America, where our Costa Rican brothers and sisters would act as the worthy hosts representing the countries of the Central American Integration System (SICA).

This regional gesture is evidence of our clear intention to be active participants, learning, defining and implementing good practices for the sustainable use and development of our fisheries potential, and thus, in accordance with the security strategy of Central America and the Regional Policy for Fisheries, strengthening the global linkages to ensure that responsible fishing remains the style and attitude of mankind's use of fisheries resources.

Madam President, I would like finish by reiterating our appreciation to you and all of Costa Rica for hosting this historic event, taking place in a country in America for the first time, and this extends to all those who collaborated in organizing and development [for the meeting] to achieve its goals. Without a doubt, this is a great opportunity to coordinate and propose measures that will ensure good use of the fisheries resources of Costa Rica, Central America and the entire world, for the benefit and current and future generations.

Thank you.

APPENDIX 6

Opening Speech by Ms Gloria Abraham, Minister of Agriculture and Livestock, Costa Rica

To begin this morning, I would like to cordially welcome to the government authorities, the representatives of international organizations, and the non-governmental organizations, from countries around the world that are participating in this Workshop and contributing their part in getting the nations of the world to work together increasingly to improve the monitoring, control and surveillance of fishing in our water.

Welcome to Costa Rica everyone. Our country, in 2005, adopted the Code of Conduct for Responsible Fishing; and part of the actions of implementation of this Code relates to combatting illegal, unreported and unregulated fishing.

In Central America, Costa Rica has led the fight against this scourge, conscious of the importance for all mankind to practice responsible use of fisheries resources, for both current and future generations, and taking into particular account the major role that fisheries plays in food security.

The work that Costa Rica has been doing, along with the rest of the Central American countries and the Dominican Republic, in the framework of The Fisheries and Aquaculture Sector Organization of the Central American Isthmus (OSPESCA), was recognized by the United Nations, Food and Agriculture Organization (FAO), in December 2012, awarding us the Margarita Lizárraga Medal.

For Costa Rica, for our neighboring countries and for OSPESCA this award gives us pride, but, at the same time, it obligates us to continue making efforts so that fisheries management and the implementation of the Code are components of securing sustainability of local, regional and global fisheries.

Fishing to our countries represents employment and income, especially in the most socially and economically depressed areas. Because of this, our commitment is to strengthen the management for better monitoring, control and surveillance of fishing activities.

We have banned shark finning, established a register of regional fisheries, implemented satellite tracking of industrial vessels and managed closures of the of Caribbean lobster fishing.
We have also enacted the Central American Fishing Code of Ethics, with the participation and the production associated with industrial and artisanal fishermen.

On a global level, the trade of fisheries products coming from IUU fishing represents close to 23 billion dollars annually, which significantly impacts both the fisheries management measures that nations promote in national and international spheres, as well as the sustainability of the resource, and thus the socioeconomic conditions of fishermen, especially small-scale fishermen.

It is known that illegal fishing is carried out by international groups, having economic resources enables them to circumvent the systems of monitoring and control in countries such as ours, where we have limited means to combat illegal fishing.

This is why we affirm that the strategic alliances and synergies between governments and other actors in the fisheries communities should be the common ground that leads us to reducing, and if possible, eliminating the impacts of illegal fishing on our economies.

The cooperation between countries and international organizations has equal relevance in establishing networks and agreed protocols that help to maximize the results of the fight against illegal fishing, in a manner similar to that used in the fight against drug trafficking.

An example of this type of productive relationship is the International Monitoring, Control and Surveillance Network, which has convened this important workshop.

My call to the participants of this Network, as the leader of the Costa Rican fishing sector, is to pay close attention to the impact that illegal fishing has on the small scale fisheries, since, although the problem affects various types of fisheries, the effects are more severe on this sector, which is the most vulnerable from the social and economic perspectives of our countries. Furthermore, this workshop is an opportunity to obtain various inputs to be analyzed during the next meeting of the Committee on Fisheries of FAO.

In conclusion, I would like to reiterate the commitment made by Costa Rica to the ratification of the Port State Measures Agreement, which is currently under discussion in our First Power of the Republic and which will undoubtedly be an important tool in the fight against illegal fishing.

I wish success to all of the participants and my congratulations to the organizers of this important event.

Thank you.

APPENDIX 7

Group photograph

This document contains the report of the Fourth Global Fisheries Enforcement Training Workshop, which was held in San José, Costa Rica, from 17 to 21 February 2014. The workshop was organized by the International Monitoring, Control and Surveillance Network with the collaboration of the Food and Agriculture Organization of the United Nations (FAO), and hosted by the Ministry of Agriculture and Livestock, Government of Costa Rica.

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