Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/021
Agenda Item: Special Session Day 3

Building Regional Ocean and Land Observation Systems to Safeguard APEC Resources and Communities

Purpose: Information
Submitted by: Australia

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Australian Government
Department of Industry and Science

Asia-Pacific Economic Cooperation

APEC

Building regional ocean and land observation systems to safeguard APEC resources and communities

Ms Emma Luke
Assistant Manager
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Department of Industry and Science

Mr Jonathon Ross
Director, Earth Observation Strategy
Environmental Geoscience Division
GEOSCIENCE AUSTRALIA

APEC Senior Officials Meeting 2: 10-21 May 2015
Boracay, The Philippines

Presentation overview

- How science can support APEC priorities
- Earth observation systems
- Building a regional system: opportunities for APEC
- Australian Earth observation infrastructure/activities
- Feedback and invitation to Australia November 2015

APEC priorities

- **The APEC area:**
  - disaster prone
  - reliant on blue economy
  - diverse S&T capabilities
  - Pacific Ocean connections
- **APEC priorities:**
  - ocean-related issues
  - an open economy featuring innovative development
  - interconnected growth and shared interests
  - building sustainable and resilient communities
  - food safety and security
  - emergency preparedness and disaster management
  - human capital development including education and capacity building

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Earth observation systems

- Earth observation:
  - the collection of information about planet Earth's physical, chemical and biological systems
  - monitoring and assessing the status of, and changes in, the natural and man-made environment.
  - covers space, air, cryosphere, land, ocean
    - range of remote and in-situ instruments
    - supported by data management systems

- Observe: Data collection
- Analyse: Data storage, analysis
- Use: Information for end users/ decision makers
- Expand & enhance: More data+advancing technology=more information=better decisions

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Building a regional system: opportunities for APEC

- Increased technological advancement=increased options for use
- Benefits:
  - forecasting weather
  - tracking biodiversity
  - measuring land-use change
  - monitoring and responding to natural disasters, including fires, floods, earthquakes and tsunamis
  - managing natural resources
  - addressing emerging diseases and other health risks
  - predicting, adapting to and mitigating climate change
  - SME innovation
- Collaboration at a regional level delivers national and regional level benefits

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However....

CEOS

GEO GROUP ON EARTH OBSERVATIONS

The Global Ocean Observing System

IOOS

IMOS Integrated Marine Observing System

TERN

Copernicus

"The world is moving so fast the person who says it can't be done is interrupted by someone doing it"

-Elbert Hubbard

Many systems and initiatives exist already; operating at national, regional and global scales

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Challenges of linking systems

The challenges we face are many…
...getting organisations to recognise that no single country or organisation can do everything…

…that we are stronger working together than individually

…understanding that the whole is so much more than the sum of the parts…

…..recognising that working together to leverage each other's resources is critical to our success is key.

Barbara J. Ryan
Secretariat Director of the intergovernmental Group on Earth Observations 2013

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The project:
Building regional ocean and land observation systems to safeguard APEC resources & communities

Asia-Pacific Economic Cooperation

Develop the framework for a Pan-Pacific integrated observation system, building the science and research capacity of the region

- Focus south-east Asia and the Pacific by:
  - regionalising land and marine observation systems and information to build regional capacity,
  - economic prosperity/development, in particular for blue economy industries (e.g. fisheries, agriculture)
  - improving regional disaster resilience
  - monitoring Indo-Pacific reef health

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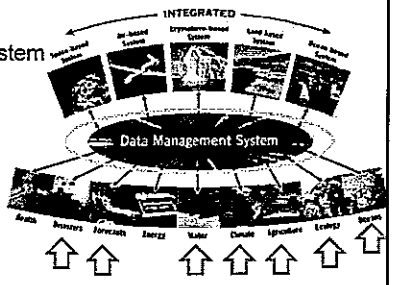
The project:
Building regional ocean and land observation systems to safeguard APEC resources & communities

- Workshops in Australia, late 2015
  - stocktake of current land and marine observation systems
  - develop an Action Plan for a regional system
  - establish an APEC Marine and Land Observation Community
  - consider future needs and opportunities
  - demonstrate Australian capabilities
- End-user focus, 3 components
  - marine/coastal observation
  - disasters/land observation
  - Common issues/opportunities
- Involvement by all warmly welcomed!
  - speaker roles
  - technical/advisory roles
  - mentoring



Original image modified from NOAA

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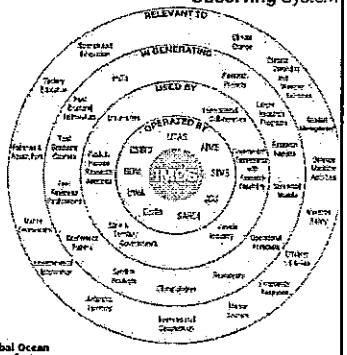
Australian infrastructure: IMOS

- 9 institutions deploy and deliver data streams
- Used by the entire Australian marine and climate science community and international collaborators
- 5 major research themes:
  - Multi-decadal ocean change
  - Climate variability and weather extremes
  - Major boundary currents and interbasin flows
  - Continental shelf and coastal processes
  - Ecosystem responses
- 10 technology platforms (Facilities)
- IMOS Ocean Portal http://imos.aodn.org.au
  - Range of data end users
- IMOS is a Regional Alliance of the Global Ocean Observing System

IMOS
Integrated Marine Observing System



The Global Ocean Observing System

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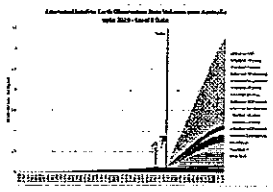
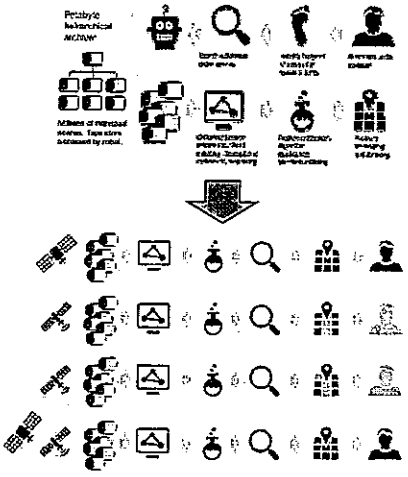
The challenge of big space data

- The potential value of Earth observations from space data is enormous.
- Over 130 satellites operated by CEOS Agencies today.
- Billions of dollars invested.
- But it is 'Big Data'.



- And traditional approaches to use are holding us back.



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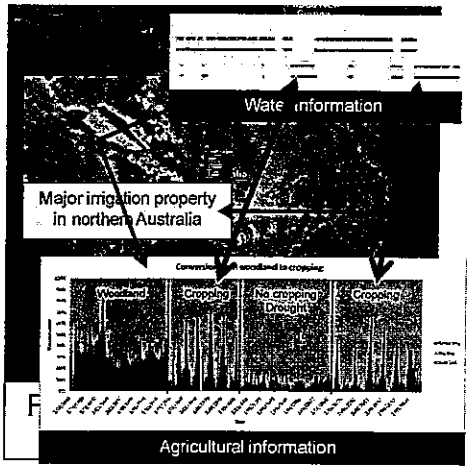
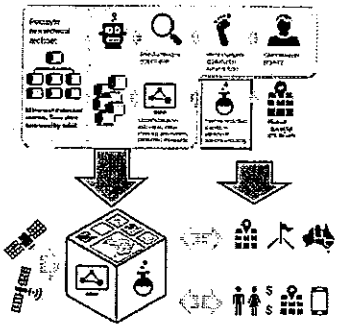
Australian infrastructure: *The Australian Geoscience Data Cube*



- A new approach, based on establishing continent and regional scale 'data infrastructure', helps address these challenges.



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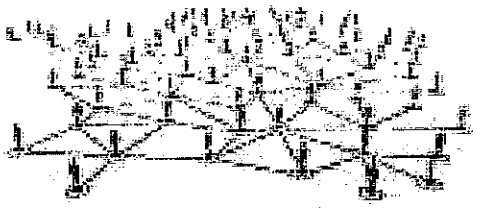
This is the start of a conversation....

- Register your interest:

  International.strategy@industry.gov.au

  Subject: AMLOC
  (APEC Marine and Land Observation Community)

- Very much value feedback on design, focus, opportunities.....



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Australian Government
Department of Industry and Science

In collaboration with:

- AIMS
- GA
- IMOS
- CSIRO
- BOM

International co-sponsors:

- China
- Philippines

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Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/022
Agenda Item: III A

Information Sharing: Malaysia Economy Report

Purpose: Information
Submitted by: Malaysia

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Information Sharing
5th APEC OFWG, Barocay, Philippines
By MALAYSIA

Following up from our last information sharing during the 4th OFWG held at Clark, last January, I hereby have the utmost pleasure to inform that Malaysia has launched her Second NPOA- Fishing Capacity on 24th March 2015. The launching ceremony was officiated by the Deputy Director General of Fisheries Malaysia, Mr. Johari Ramli during the Regional Technical Consultation (RTC) on Development of Regional Plan of Action (RPOA) for Management of Fishing Capacity in Southeast Asian Countries which was convened in Malaysia.

Marine and coastal biodiversity consist of coastal hill dipterocarp forests, mangrove forests, mud flats, coral reefs and sea grass areas.

Malaysia has a coastline of some 4,800 km, and sits on the geologically stable Sunda Shelf. About half the coastline is beaches and slightly less than half is fringed with mangrove forest. There is relatively little rocky coastline. Both the beach and mangrove ecosystems boast distinct, unique and spectacular biodiversity, and provide a broad range of ecological services ranging from tourism and recreation to providing critical habitat for reptilian, crustacean, mollusc and fish species. Environmentally Sensitive Areas (ESAs) on the coasts of Malaysia have been identified and mapped in the National Physical Plan. These ESAs include mangrove forests, marine parks, critical coastal erosion areas and turtle landing sites.

Coral reefs in Malaysia are estimated to cover close to 4,006 km^2. Coral reefs support not less than 700 species of fish that are dependent on coral reefs as a habitat. Coral reefs are valuable economic and ecological resources. They have important ecosystem functions that provide crucial goods and services to hundreds of millions of people, mostly in developing countries. They are the foundation of a significant proportion of the global tourism industry, and are a major source of biodiversity.

It is reported that USD 5.5 billion is generated from the coral reefs of the world annually. Within Southeast Asia, the potential sustainable economic value of coral reefs is substantial, as is the potential economic loss if these resources are degraded. One estimate puts the value of coral reefs at US$115,740 per hectare per year. This places Malaysia's reefs at a value of US$45.31 billion per year. Economically, coral reef-related businesses in Malaysia are worth approximately US$635 million annually in food, fisheries, tourism and even pharmaceuticals. Economic value of marine parks in Malaysia is estimated to range between RM 10.1 million to RM 3.4 billion base on ecosystem services they provide.

Malaysia is part of the "Coral Triangle", an area recognised by scientists to contain the world's richest marine biodiversity. Coral diversity is highest in East Malaysia, estimated at over 550 species while Peninsular Malaysia has over 480 species of coral. Coral reefs represent an economically important ecosystem and are the foundation of a significant percentage of the country's tourism industry.

Malaysia has gazetted 42 Marine Parks to date with a total area of 2,486.13 km^2. These areas are coral reef areas with patches of mangrove and seagrass beds. These islands are being managed by the Department of Marine Park Malaysia. Marine parks are established to protect and conserve various marine habitat and aquatic marine life. In Peninsular Malaysia, marine parks are created by way of gazzetment under the Fisheries Act of 1985.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/023
Agenda Item: IV C d

Promoting Small-Scale Fishers and Fisheries Industries to the Global Value Chain

Purpose: Consideration
Submitted by: Indonesia

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

APEC Concept Note

Project Title:	**Promoting Small-Scale Fishers And Fisheries Industries To The Global Value Chain**

Fund Source *(Select one)*:

☐ General Project Account (formerly Operational Account)

☐ TILF Special Account

☒ APEC Support Fund

For ASF: As per Guidebook Ch. 3, list **ASF Sub-fund** if appropriate for this project:

APEC forum:	Ocean and Fisheries Working Group (OFWG)
Proposing APEC economy:	Indonesia
Co-sponsoring APEC economies:	Viet Nam (tbc), China (tbc)
Expected start date:	May 2016
Expected completion date:	July 2016
Project summary: **Describe the project in under 150 words. Your summary should include the project topic, planned activities, timing and location:** *(Summary must be no longer than the box provided. Cover sheet must fit on one page)*	Small-scale fishers and fisheries industries contribute significantly to employment and food supply in many Economies in Asia Pacific. Approximately 90 % of the 38 million people recorded by the FAO as fishers and fish farmers, are small-scale in nature. Additionally, more than 100 million people are estimated to be employed in fisheries associated occupation. However, large potentials within the small-scale fishers sectors have not been fully explored due to a mixture of socio-institutional constraints and unfavourable policies. Capturing these potentials could support economic growth in the region, and provide conditions for more positive and equitable effects on the redistribution of wealth. To address this issue, a Policy Dialogue is proposed to be held for two days. The Policy Dialogue will cover issues related to enhancing the small-scale fishers and fisheries industries to the value chains in Asia Pacific region. It will focus on improving the supply side, mainly how to ensure the quality and the standard of the raw materials that are supplied to manufacturing as well as distribution units. The second day will explore the role of private sector and their active engagement in developing the small scale fishers and fisheries industries.
Total cost of proposal: *(APEC funding + self-funding):* ***USD*** 106,150	**Total amount being sought from APEC (USD):** 86,769 ***By category:*** *Travel:* 80,769 *Labor costs:* 6,000 *Hosting:* *Publication & distribution:* *Other:*

Project Overseer Information and Declaration:
Name: R.K. Ersan Keswara
Title: Head of Section for APEC Related Economic Cooperation / 3rd Secretary
Organization: Ministry of Foreign Affairs of the Republic of Indonesia
Postal address: Jl. Taman Pejambon No.6 Jakarta Pusat
Tel: +62 21 381 1083 ext. 4335 ***E-mail:*** ramadhani.keswara@kemlu.go.id

As Project Overseer and on behalf of the above said Organization, I declare that this submission was prepared in accordance with the **Guidebook on APEC Projects** and any ensuing project will comply with said Guidebook. Failure to do so may result in the BMC denying or revoking funding and/or project approval. I understand that any funds approved are granted on the basis of the information in the document's budget table, in the case of any inconsistencies within the document.

R.K. Ersan Keswara
Date: May 2015

Project Synopsis

1. **Relevance – Benefits to region:**

The 4th APEC Ocean-related Ministerial Meeting recognized the importance of APEC economies to support small scale fisheries in order to maintain and improve livelihoods in these sectors. With appropriate approach, APEC could promote small-scale fishers and fisheries industries across Asia Pacific to take part in the Global Value Chain.

Small-scale fishers and fisheries industries contribute significantly to employment and food supply in many Economies in Asia Pacific. Approximately 90 % of the 38 million people recorded by the FAO as fishers and fish farmers, are small-scale in nature. Additionally, more than 100 million people are estimated to be employed in fisheries associated occupation.

Raising awareness of the importance of small scale fisheries and fisheries industries are relevant not only because many livelihoods depend on sustainable use of the natural resource base, but also because fisheries provide vital nutritious food and play a role as a safety net for many poor households in coastal communities in developing economies (World Bank, 2010).

Small scale fishers' category, dispersion, and complexity are diverse within each particular economies in APEC. However, in general, small scale fishers may fish without craft, or use smaller craft (without trawler) and sometimes manually operated by using traditional/specific fishing gear (FAO, 2012). Due to their variety and social complexity, small-scale fisheries and industries in many developing economies are often poorly documented, poorly regulated, and many of the complex management issues remain largely unresolved.

While these small scale fishers are using sustainable method of fishing, many are not equipped with necessary skills, and introduced to the application of appropriate technology, such as cold storage or blast freezer. These challenges certainly become other obstacles for them to meet international standards and to integrate their roles into regional value chain.

Large potentials within the small-scale fishers sectors have also not been fully explored due to a mixture of socio-institutional constraints and unfavorable policies. Capturing these potentials could support economic growth in the region, and provide conditions for more positive and equitable effects on the redistribution of wealth.

To generate best practices and policy recommendations in promoting small-scale fishers and fisheries industries to the global value chain, Indonesia would like to propose a "Policy Dialogue on Promoting Small-Scale Fishers and Fisheries Industries to the Global Value Chain" in APEC Philippines 2015.

Relevance – Rank:

This project falls under Rank 1, since it demonstrates a direct link to promoting regional economic integration via free and open trade and investment, in particular issues related to Global Value Chain, 'Ocean-related issues for economic growth, including Blue Economy, conservation and sustainable development of marine and coastal resources, particularly fisheries', and 'SME Development, including access to regional and global markets'.

2. **Objectives:**

This activity is expected to identify ways/policies to:

- Expand their small-scale fishers and fisheries industries by ways of providing training to improve management capabilities, facilitating access to finance, developing production capacity, improving the quality of their products and understanding of marketing;
- Meet international standards, in particular through access to finance that will allow them to use appropriate technology, such as cold storage or blast freezer;
- Enter the value chain of fisheries products, by ways of facilitating access to information on exporting their products abroad and to learn from successful cases;
- Align with international standards by forming partnership with private sector or cooperatives mong small-scale fishers and fisheries industries so as to receive support by local, regional and national authorities, and be provided with significant capacity building;

3. **Alignment – APEC:**

The project is in-line with:

- In 2013, APEC Leaders agreed to promote GVC development and cooperation in the APEC region on the basis of previous work on connectivity. This agreement highlights the need for APEC economies to work strategically and take action in creating an enabling environment for GVC development and cooperation.

  In 2014, **APEC Leaders encourage the progress of APEC's ocean-related cooperation; as well as agree to assist SMEs to benefit from GVCs**, including to develop and implement initiatives to assist SMEs in the areas that matter most to GVCs: infrastructure, supply chain connectivity, innovation, skills, and adoption of international standards.

- In 2014, the Fourth APEC Ocean-related Ministerial Meeting-AOMM4 which supports sustainable small-scale fisheries and aquaculture, including by providing equitable access of small-scale and artisanal fishers to fisheries and markets.

Alignment – Forum:

The project is in line and support the

- OFWG strategic plan for 2013-2015 through agreed Priorities objectives and Key Performance Indicators.
- CTI's APEC Strategic Blueprint for Promoting Global Value Chains Development and Cooperation

4. **Methodology:**

Workplan:

To realize this initiative, Indonesia has provided some initial thoughts on the possible time frame that APEC could do:

January	:	The proposal is initially endorsed by OFWG1 members with further inputs and comments from APEC Economies during SOM1 in Clark
May	:	Full concept note is submitted via OFWG2 during SOM2 meeting in Boracay and presented to CTI2 and PPFS1 for information
June	:	Concept note to be submitted for Session 2 and presented to SMEWG1 for information
August	:	Distribution of tentative agenda to OFWG members intersessionally
September	:	Final inputs of tentative agenda are received from OFWG members
December	:	Invitations are sent to members, experts, ad other relevant stakeholders
February 2016	:	Finalization of event, including travel arrangement
March 2016	:	Final preparation for all related matters
May 2016	:	Implementation of policy dialogue in Lombok Island
June 2016	:	Finalization of report and policy recommendations, finalize project evaluation, and identification of the next steps
July 2016	:	Report the outcomes of the policy dialogue to be submitted for SOM3 2016

The Policy Dialogue will be held for two days. The Policy Dialogue will cover issues related to enhancing the small-scale fishers and fisheries industries to the value chains in Asia Pacific region. It will focus on improving the supply side, mainly how to ensure the quality and the standard of the raw materials that are supplied to manufacturing as well as distribution units. The second day will explore the role of private sector and their active engagement in developing the small scale fishers and fisheries industries. The Policy Dialogue will be structured to encourage an open discussion among participants. Each session during the plenary will feature a series of panel-based discussions, with the opportunity for participants to engage with the panellists and to each other.

Beneficiaries: (i) Officials from APEC member economies will be engaged through APEC relevant fora (Ocean and Fisheries Working Group, Small Medium Enterprise Working Group, Policy Partnership on Food Security, and other relevant APEC fora/subfora); (ii) Business operator in the fisheries industries as well as other relevant private sector will be engaged through APEC Business Advisory Council (ABAC); and Other relevant multilateral organizations (Food and Agriculture Organization, International Fund for Agricultural Development, (etc).

Evaluation:

The project will be determined by the participation of APEC members and the number of recommendations adopted. If it is relevant, a subsequent seminar or workshop will be organized to share best practices and recommendations of the policy dialogue.

Linkages:

- The outcomes of Workshop on Fisheries and their Contribution to Sustainable Development in APEC economies: Small Scale and Artisanal Fisheries to support Food Security proposed by Indonesia (2013).
- APEC Workshop on Facilitating SME Trade Through Better Understanding of Non-Tariff Measures in the Asia Pacific Region for Agriculture and Food Processing Sector in Atlanta, USA (2015)

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/024
Agenda Item: II B

Coordination of Mainstreaming Ocean Related Issues

Purpose: Information
Submitted by: MOI Coordinator

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

MINISTRY OF NATIONAL DEVELOPMENT PLANNING/
NATIONAL DEVELOPMENT PLANNING BOARD (BAPPENAS)

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www.bappenas.go.id

Jakarta, 8 May 2015

Ref. No : 2898 /SA.05.M/2015
Subject : **Coordination of Mainstreaming Ocean Related Issues**

Dear Program Director of APEC Secretariat,

First of all, I would like to confirm the receipt of your email concerning Secretariat Follow-up Actions on Mainstreaming Ocean-Related Issues Steering Council Contact List and Working Groups and Committee's Work Plans.

Secondly, following up to the 1st Meeting of the Mainstreaming Ocean-Related Issues Steering Council on 5 February 2015, in Clark, I would like to seek your assistance to deliver the summary of discussion of the meeting to all Lead Shepherds/Chairs/Co-Chairs of Working Groups and Committee under APEC Initiative on Mainstreaming Ocean-related Issues and request them to convey this summary of discussion – as attached -- in their meetings.

By having Working Groups' and Committee's awareness and acknowledgement on this initiative, I believe it can encourage them to propose concrete activities related to ocean by integrating those proposals into their Work Plan and Strategic Plans.

Thank you for your kind cooperation and looking forward to receiving your inputs on the above initiatives.

Yours Sincerely,

Dr Arifin Rudiyanto
Senior Advisor to the Minister for Spatial Planning and Maritime Affair
Ministry of National Development Planning
BAPPENAS

NOTES OF MEETING
MAINSTREAMING OCEAN-RELATED ISSUES STEERING COUNCIL
5 February 2015
Clark, Philippines

On 5 February 2015, the MOI Steering Council had conducted a first meeting Chaired by the Coordinator from Indonesia and was attended by representatives from OFWG, PPFS, TWG and HRDWG, as well as APEC Secretariate.

The meeting discussed some important issues as follows:

1. For this year MOI SC will meet twice, in the margin of SCE 1 and SCE 3, while during SCE 2 the Coordinator will present a report on:
    a. The revised scope of ToR to incorporate human resource development issues and other issues as concerned;
    b. The updated MOI work plan consisting of the selected activities stated in the work plan of respective working group (OFWG, TPTWG, PPFS, TWG, SCSC, EWG and HRDWG);

2. The Coordinator welcomes further inputs and comments to the ToR by 15 April 2015. The revised ToR will be reported during SOM 2 for endorsement.

3. By 15 April 2015, the APEC Secretariat will collect all the work plans of respective working groups and submit them to the Coordinator for selection process of MOI related activities.

4. Each working group will consider MOI issues in its future strategic plan.

5. The APEC Secretariate will establish an e-mail group consisting of working groups' Lead Shepherds/Chairs, assistants/secretariats and Program Directors, as well as the Coordinator and his team.

6. MOI work plan is a living document to accommodate new initiatives from both working groups/foras and APEC economies. All the proposed new initiatives should first obtain endorsement from respective working groups before being included in the MOI's work plan.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/025
Agenda Item: VI A

Virtual Working Group on Marine Debris: Terms of Reference

Purpose: Information
Submitted by: VWG on Marine Debris
Forum Doc. No.: 2015/SOM1/CD/017

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

CD Endorsed:February 15, 2015
OFWG Endorsed: April 1, 2015

The APEC Chemical Dialogue: Virtual Working Group on Sustainable Material Management and Innovative Solutions to the Problem of Marine Debris

Terms of Reference

Background

On July 13, 2014, the Chemical Dialogue ("Dialogue") approved the formation of a Virtual Working Group ("VWG") in collaboration with the Oceans and Fisheries Working Group ("OFWG") to promote innovative solutions to the issue of marine debris particularly through a focus on sustainable land-based waste management. On August 12, 2014, the Dialogue requested that the VWG formalize its work through the drafting of a Terms of Reference for approval by the Dialogue.

Marine debris is a complex, shared global problem that does not have simple solutions. However, in recent years, technology innovations and new approaches have been developed to improve material capture, sortation and recovery, waste-to-worth initiatives, and product innovations leading to source reduction.

The VWG takes note of the substantial international work that has already occurred to address marine debris, including by the United Nations Environment Programme ("UNEP") via their Global Partnership on Marine Litter (under the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities), and with others via the "Honolulu Strategy" and Honolulu Commitment. Plastic makers have announced nearly 200 actions through their industry's Declaration of the Global Plastics Associations for Solutions on Marine Litter ("Global Declaration").

APEC's efforts occur within this context and seek to leverage APEC's unique capacities to further these efforts. APEC cannot independently solve marine debris on a global basis, but by leveraging its unique capabilities as well as focusing in particular on land-based waste management efforts and innovative new technologies that can be applied in the region, APEC can lead the way on discrete – and achievable - solutions.

Objectives

The VWG was developed to capitalize on APEC's ability to regionalize public-private models, its convening power as a forum for the world's fastest growing and most dynamic economies, and the core role of the Pacific Ocean in APEC's existence. These efforts will include, *inter alia*, possible work in the following areas:

- Promotion of Plastics Recycling: For example, through the provision of incentives to local communities and small and medium sized enterprises for the collection and recycling of plastic waste

- Piloting of Innovative Technologies: The VWG will promote pilots of, and information sharing about, innovative technologies to address marine debris, including but not limited to technologies addressing energy recovery;

- Education and Information Sharing: For example, by increasing outreach to local communities regarding the importance of recycling and waste management and litter avoidance;

- Building on Existing Public-Private Partnerships: For example, industry's stewardship efforts on plastic pellets, associations of fishing net makers and fishers, collaborations between consumer product companies and local governments, etc.; and

- Sharing of Existing and Development of New Best Practices: For example, sharing existing best practices on land-based waste management and consideration of possible development of APEC best practices or promotion of existing best practices.

- Partnerships: With agreement from the Dialogue, the VWG could also conduct outreach to other regional Pacific groups, such as the Pacific Islands Forum ("PIF"), International organizations, and civil society groups, as appropriate.

Administration

The VWG will be composed of representatives from both governments and industry from APEC economies. Participants from the Dialogue and from the Oceans and Fisheries Working Group are invited to become members. Because the issue of marine debris crosses many agencies, economy CD/OFWG representatives are invited to nominate VWG participants from other economy agencies if desired. For ease of administration, each represented economy will have one designated point of contact who can then further distribute information. Participants from other relevant APEC fora (for example, the Policy Partnership on Science, Technology and Innovation (PPSTI), the Small and Medium Sized Enterprises Working Group (SMEWG), the Committee on Trade and Investment (CTI), the Steering Committee on Economic and Technical Cooperation (SCE), etc.) are also welcome to join subject to approval by the VWG Co-Chairs.

The VWG will be co-chaired by a Government and Industry Co-Chair. The chairs will be elected by members of the VWG and will serve a two-year term, renewable upon approval by the VWG.

The VWG's work will be guided by a long-term work plan, likely 2015-2017. The work plan will be developed by the VWG and submitted to the Dialogue for endorsement. The work plan will be a "living document" and revised regularly to reflect ongoing work and developing priorities. It will be regularly submitted to the Dialogue for review. VWG participants will contribute as they are able to the objectives of the VWG and to the execution of its work plan.

The VWG will meet virtually – by phone or video conference – on a regular basis intersessionally. The VWG will report progress to the CD and OFWG meetings and recommend additional actions for consideration.

Document Version Management

- **Originally Approved**:
  - Chemical Dialogue: February 15, 2015
  - Oceans and Fisheries Working Group: April 1, 2015

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/026
Agenda Item: VI A

Virtual Working Group on Marine Debris - 2015 Work Plan: Draft

Purpose: Information
Submitted by: VWG on Marine Debris

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Final Draft: May 5, 2015

APEC Virtual Working Group on Marine Debris
2015 Work Plan: DRAFT

The APEC Virtual Working Group ("VWG") on Marine Debris was formed in 2014 by the Chemical Dialogue ("Dialogue") in collaboration with the Oceans and Fisheries Working Group ("OFWG") to promote innovative solutions to the issue of marine debris with a particular focus on innovations in land-based solid waste management to prevent debris from ever entering the ocean.

The VWG's work to date as well as its Terms of Reference were presented to the OFWG and the Dialogue. The Dialogue approved the Terms of Reference, submitted as Document No. 2015/SOM1/CD/017, on February 15, 2015. The Terms of Reference have been submitted to the OFWG for intersessional approval on March 17, 2015. Presentations provided to the Dialogue and the OFWG provided an outline of concepts for a draft 2015 work plan, and thereafter the Dialogue and OFWG requested that a more defined 2015 workplan be drafted and circulated for comment by the end of February 2015. This Workplan is drafted to meet that request.

The VWG's Terms of Reference identify six objectives for the VWG: (1) Promote Plastics Recycling; (2) Pilot Innovative Technologies; (3) Advance education and Information Sharing; (4) Build on Existing Public-Private Partnerships; (5) Share Existing and Develop New Best Practices; and (6) Create Partnerships, including with other regional organizations as appropriate. To meet these objectives, the VWG proposes to undertake the following work in 2015, assuming the necessary personnel and financial resources are available.

- Draft a baseline report. Within APEC economies there are a variety of approaches to management of municipal solid waste, including formal and informal sector recycling and energy recovery, and a having better understanding of these approaches will help inform future action, and generate a baseline from which to measure progress. Any such report will also seek to identify the status of potential impediments to recycling and waste management as a baseline for potential future work. Separately, the Ocean Conservancy and the McKinsey Co. have begun focused research on the issue of marine debris and land-based waste management with a particular emphasis on developing an understanding of the situation in several economies bordering the Pacific rim. There may be opportunities for the APEC work to build off and contribute to this research.

- Hosting an "Awareness Raising" session. There is a need to develop a basic understanding across the APEC groups and economies regarding marine debris, and viable mechanisms for addressing it. This could be done through, for example, a demonstration of the opportunities which exist for strategic approaches to municipal solid waste management and recycling, and of new technologies that are helping to turn non-recycled materials into fuel, feedstock and other valuable end products. The event could highlight new technologies and approaches along the capital-intensity spectrum, from larger-scale investment projects, to locally organized collection, recycling, and reuse efforts. An event could be held in connection with or on the margins of SOM3 or other APEC

events and would include APEC stakeholders from the Dialogue and OFWG, and potentially the Policy Partnership on Science Technology and Innovation ("PPSTI"), the Small and Medium Sized Enterprises Working Group ("SMEWG"), and other interested parties. Energy recovery and recycling technology providers would be invited to participate and the VWG may consider inviting potential funding partners, including venture capitalists and international financial institutions such as the Asian Development Bank and the Global Environmental Facility. The VWG may also consider inviting other organizations such as the Pacific Islands Forum ("PIF"), UNEP International Environmental Technology Centre ("IETC"), non-governmental organizations focused in the area, and others as appropriate and identified by the VWG.

- Promoting a high-level pilot project of innovative technologies. There have recently been innovations in the mechanisms used to collect and sort municipal solid waste, and these innovations are helping turn more and more non-recycled plastics into valuable fuels or chemical feedstocks through pyrolysis and gasification. High level awareness of these developments will help build awareness and political support for these solutions. These technologies could be demonstrated at an Awareness Raising session hosted at SOM3 or other APEC events, or through a presentation during Leaders' week to relevant APEC fora, with a goal of promoting the further development and implementation of these technologies across APEC economies.

- Developing principles and definitions. Recyclers and energy recovery experts throughout the APEC region have identified a lack of consistency and coherence in how these sectors are addressed by governments at the local and national level. These inconsistencies serve as a barrier to the adoption and growth of these technologies. The VWG believes that a better understanding of how definitions and regulations can be used to foster and support, as well as how they can unintentionally impede, technology deployment will help APEC economies understand which technologies are available and how to develop an environment to foster their introduction. This could include development of a best practices document to identify elements of a regulatory and policy environment that would support the deployment of innovative technologies. This work would build on the information gathered in the baseline report as well as discussions and outcomes from any awareness raising session.

- Contributing to the SOM Friends of the Chair ("FoTC") Initiative on Urbanization. Building on work conducted in 2014 by Senior Officials and a report drafted by the APEC Policy Support Unit ("PSU"),[1] the FoTC on Urbanization has developed a Terms of Reference to promote integrated approaches to environmental sustainability and inclusive economic growth in the

[1] *See* 'Shaping the Future through an Asia-Pacific Partnership for Urbanization and Sustainable City Development' (Nov. 2014), *available at* http://publications.apec.org/publication-detail.php?pub_id=1567.

APEC region. The draft Terms of Reference (as of 13 April 2015) identifies APEC sub-fora including the VWG on Marine Debris as a potential stakeholder.[2] The VWG will therefore seek to actively contribute to the FoTC discussions and identify opportunities to use the urbanization initiative to promote best practices and innovative technologies to mitigate marine debris.

Because of the scope of the marine debris challenge as well as the opportunity APEC provides, it is expected that these initial initiatives will serve as the foundation for a multi-year strategy to promote solutions to marine debris. That strategy will be developed later in 2015 once these initial objectives have helped to refine an achievable vision.

[2] "Enhance synergy among APEC Committees and sub-fora and oversee the incorporation of urbanization-related topics into the work programs of the Committee on Trade and Investment (CTI), Economic Committee (EC), the SOM Steering Committee on Economic and Technical Cooperation (ECOTECH) and APEC sub-fora." P. 3.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/027
Agenda Item: VIII A

OFWG 02-2014 - Workshop on the Climate Change Impact on Oceans and Fisheries Resources: Outcome

Purpose: Information
Submitted by: Japan

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

CABINET SECRETARIAT

Press Release

9 May 2015

The Workshop on the Climate Change Impact on Oceans and Fisheries Resources (APEC Project OFWG 02 2014)

On 9 May 2015, APEC Project: "Workshop on the Climate Change Impact on Oceans and Fisheries Resources" is held at the Crown Regency Resort and Convention Center, Boracay Island, the Philippines, as one of the epoch-making events in the 2nd APEC Senior Official Meeting weeks. The Workshop is implemented by the Government of Japan, and co-sponsored by the Philippines as well as Peru and Viet-Nam.

A Remarks made by Atty. Asis G. Perez, Director of Bureau of Fisheries and Aquatic Resources, kicks-off the Workshop, on behalf of the Philippines Government. Project Overseer, Dr. Akima Umezawa, Cabinet Counsellor, Government of Japan, takes charge of Moderator, and twelve prominent scholars and experts[1] deliver their award-winning lectures in an intensive one day program (see attached the Program Agenda). The Workshop receives more than one hundred experts who vigorously participate in the Workshop, from 15 economies and four international governmental organizations.

Today, APEC economies account for 70% and 80% of global consumptions of "fishery" and "aquaculture" products, respectively, those of which are contributing vitally to the crucial food security and economic growth in this region. However, the oceans and the benefits derived from oceans are being heavily threatened through disastrous environment degradations caused by the climate change.

The Workshop first focuses on these impacts of climate change on ocean, including ocean warming, sea level rises, and even the distribution changes of living marine resources. Then, it touches upon striking features such as ocean acidification and stresses on marine biodiversity. The Workshop addresses properly the climate change which seriously affects not only on the integrity of marine ecosystem but also on the sustainable marine use.

The Workshop also draws the attention to the Arctic sea-ice melting caused by the climate change. The Arctic Sea has been impacted more quickly than the rest of oceans, having seriously the repercussions on the global earth environment.

The Workshop, then, penetrates the impact of climate change which increases uncertainty in every sustainable use of marine resources, consequently not only endangering fisheries and aquaculture industry, but also posing serious risk on human life. The Workshop concludes by vigorous panel discussions with regard to the adaptation strategy onto the climate change impact on ocean, in order to ensure the life of future generation against the climate change in the APEC region.

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[1] e.g. United Nations top fisheries senior officer, H.E. Mr. Árni Mathiesen, Assistant Director General, Food and Agriculture Organization (FAO). (He is a former Icelandic Minister of Finance as well as of Fisheries.)

Asia-Pacific
Economic Cooperation
APEC PROJECT (OFWG 02 2014)
Implemented by JAPAN, Co-sponsored by Peru, Philippines, & Viet Nam

PROGRAM

Workshop on the Climate Change Impact on Oceans and Fisheries Resources

9th May 2015, Boracay Island, Philippines

Opening[1]

- **Welcome Remarks**
  Atty Asis G. Perez, Department of Agriculture Undersecretary for Fisheries and Bureau of Fisheries and Aquatic Resources Director
- **Opening Key Remarks**
  Prof. Nobuaki Okamoto, President, Tokyo University of Marine Science and Technology, Japan

1. Impact of Climate Change on Marine Environment

- **Meteorological Views about Climate Change**
  Dr. Ruby Leung, Pacific Northwest National Laboratory, United States
- **Impact on Marine Environment**
  - The Case of the Climatically Variable Humboldt Eastern Boundary Upwelling Ecosystem -
  Prof. Victor Ariel Gallardo, Professor of the Department of Oceanography, Universidad de Concepcion, Chile
- **Impact of Climate Change on Coastal Ecosystem and Practice for Adapting**
  Dr. Shaobo Chen, Professor, Zhejiang Mariculture Research Institute, China

2. Striking Feature of Impacts

- **Ocean Acidification**
  Dr. Christopher Sabine, Director, Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration (NOAA), United States
- **Stresses on Marine Biodiversity**
  Dr. Sheila G. Vergara, Director of Biodiversity Information Management of ASEAN Centre for Biodiversity

3. Luncheon Speech

- **Implications for Marine Ecosystem**
  Dr. Yoshihisa Shirayama, Executive Director, Japan Agency for Marine Earth Science and Technology (JAMSTEC), Japan

4. Arctic, as the Most Affected Ocean

- **Sea Ice Decline**
  Dr. Koji Shimada, Associate Professor, Department of Ocean Science, Tokyo University of Marine Science and Technology, Japan
- **Implications for Global Trade and Distribution System**
  Dr. Natsuhiko Otsuka, Manager, North Japan Port Consultations Co. Ltd.

5. Vulnerability of Fisheries

- **Climate Change Effects on Fisheries**
  H.E. Mr. Árni Mathiesen, Assistant Director General, Food and Agriculture Organization of the United Nations (FAO), Fisheries and Aquaculture Department
- **Adaptations to Ecosystem Affects and Marine Environmental Shifts**
  Mr. Masanori Miyahara, President, Fisheries Research Agency, Japan
- **Blue Carbon**
  Dr. Achmad Poernomo, Director General, Ministry of Marine Affairs and Fisheries, Indonesia

6. Evening Session: Adaptation, as a Key Role in Decreasing Risks

Panel Discussions on the Adaptations to the Environmental Shifts Caused by Climate Change, by All Lecturers

Closing

[1] Moderator (APEC Project Overseer): Dr. Akima Umezawa, Cabinet Counsellor, Government of Japan

Meteorological Views about Climate Change

Dr. L. Ruby Leung,

Pacific Northwest National Laboratory, Richland, WA, USA

Human activities have significantly perturbed the climate system since the pre-industrial era. While the surface temperature response to the radiative forcing of greenhouse gases is dominated by broad meridional gradients and imprints of land-sea contrast at continental scale, the precipitation response is much more varied, both spatially and temporally. Changes in regional precipitation have serious implications for human society and ecosystems. Improving understanding and projections of changes in water cycle processes is important to inform decisions on climate mitigation and adaptation. In this presentation, I will first provide a brief overview of the evidences of climate change. I will review research findings on projected changes in precipitation and extreme events, and their association with large-scale atmospheric circulation, with the goal of understanding the robust changes projected by climate models. Specific examples related to the Asian monsoon will be highlighted.

Impact of Marine Environment -The Case of the Climatically Variable Humboldt Eastern Boundary Upwelling Ecosystem-

Prof. Víctor A. Gallardo
Department of Oceanography
University of Concepcion, Concepcion, Chile

ABSTRACT

As a result of plate tectonics present Earth exhibits four well defined Eastern Boundary Upwelling Ecosystems (EBUEs). These marine ecosystems owe most of their ecological characteristics to Earth's rotation that raise nutrient-rich deeper waters (upwelling) to the lit surface, which together with local winds, sustain a very productive *photosynthetic* system. The same dynamics that produce, both an oxygen-poor intermediate water mass (the Subsurface Sub Equatorial Water) and a sulfide-rich sea-bottom (the latter, the so-called Humboldt Sulfuretum), foster the existence of a sulfur-based, highly diversified, prokaryotic (bacteria) dominated *chemosynthetic* system. Along the geological history of Earth, ecosystems such as those of the HEBUE must have evolved in different geographic locations following plate tectonic. Later, in the geological time scale, this system was joined by the more modern eukaryotic biota.

The HEBUE, located in the most ocean-dominated Hemisphere of Earth, and facing the largest ocean, is subjected, at different space and time scales, to extreme climatic variability, v. gr., at weekly (upwelling events), intra-annual (seasons), inter-annual (ENSO cycle: El Niños and La Niñas), and inter-decadal (Pacific Interdecadal Oscillation) cycles, and probably from even larger time-space scales variability, that alter in greater or lesser degree all major ecosystem parameters.

Moreover, several major extinctions also molded the HEBUE where deoxygenation, acidification and warming have been mentioned as related causes. The end result of all these forces determines the structure and function of present-day marine communities where a very strong contrast between the number of species (species richness) and the information diversity of the prokaryotic versus de eukaryotic communities are observed. While the first exhibit extremely high numbers of species and nearly the maximum theoretical diversity, the eukaryotic communities are poor in both counts, although, instead, abundances and biomasses are high.

As a conclusion, it is posited that the HEBUE, an Eon-old ecosystem, well tested along the geological history, should withstand any "climate change" process, maintaining or perhaps even increasing its primary productivity. It should be emphasized that until now this basic ocean production has not been utilized in our countries beyond basic resource recollection and continues to offer an opportunity for the introduction and application of technologies of long history in the Asian Pacific basin economies such as artificial reef-based ocean farming.

Impact of Climate Change on Coastal Ecosystem and Practice for Adapting

Dr. Shaobo Chen

Professor, Zhejiang Mariculture Research Institute, China

Climate change has caused various negative effects on coastal ecosystems including the increase of sea surface temperature and CO_2 concentration, sea level rise, as well as the changes of precipitation and hydrologic dynamics. The coupling effects of human activities and climate change has further increased the vulnerabilities of the coastal ecosystem. Formulating scientific adapting strategies and adopting efficient adapting measures to improve the coastal ecosystem's resilience therefore become an urgent need globally. In the past few years, Zhejiang Mariculture Research Institute has been very active in studying the coastal ecosystem's adaptation to climate change, as well as in putting proper adapting strategies in practice. These studies and practices mainly include: (1) holding a climate change themed forum – "Marine Eco-civilization Forum"; (2) carrying out two major projects of "Northward Transplantation of Mangrove Adapting to Climate Change", and "Reconstruction of Macro-algal Field"; (3) construction of a "Long-term Ecological Research Site" and establishment of joint laboratories studying climate change simulation and eco-rehabilitation; (4) conducting a Sino-Italian climate change cooperation program- "Ecosystem Adaptation to Climate Change in Coastal Areas of China".

Ocean Acidification

-Potential Economic Implications of Ocean Acidification-

Dr. Christopher Sabine

NOAA's Pacific Marine Environmental Laboratory, Seattle, WA USA

Understanding of the Earth's carbon cycle is an urgent societal need as well as a challenging intellectual problem because of its intimate connection with the Earth's climate system. The ocean plays a major role in the global carbon cycle through the uptake and redistribution of atmospheric carbon dioxide (CO_2). Over the last two centuries the ocean has absorbed over 550 billion metric tons of CO_2 produced from human activities. This absorption has resulted in measurable ocean chemical changes, including a decline in seawater pH, termed ocean acidification. Increasing acidity and related changes in seawater chemistry can affect reproduction, behaviour, and general physiological functions of many marine organisms and lead to significant shifts in marine ecosystems. Impacts in some species are already being observed today.

A wide range of economically important marine species including corals, molluscs, crustaceans, echinoderms, and fish will likely be negatively affected by ocean acidification over the coming decades. Scientific understanding of the ocean chemical changes is very high. The effect of those changes on ecosystem services is less well known. Very little work has been done to assess the impact of ocean acidification on the global economy, but some initial estimates suggest it could cost over one trillion US dollars per year by the end of this century. The latest reports from the Intergovernmental Panel on Climate Change begin to assess the societal risk of climate change and ocean acidification. They conclude that the tropical and polar oceans have among the highest risk and the lowest potential for adaptation to reduce risk, but more research needs to be done in these areas.

The international research community is coordinating its efforts to understand the global impact of ocean acidification through organizations like the Global Ocean Acidification Observing Network (http://goa-on.org). In the Western Pacific we are working with groups like the IOC sub-commission for the Western Pacific (http://iocwestpac.org/) and the Secretariat for the Regional Environment Program (http://www.sprep.org/) to expand the observing system and build ocean acidification research capacity. However, more should be done to relate this work to the local and regional economies so we can better understand the economic implications of ocean acidification in the Asia Pacific region.

Stressors on marine biodiversity

Dr. Sheila C. Vergara

Director of Biodiversity Information Management of

ASEAN Centre for Biodiversity

Abstract

Marine biodiversity generally refers to the richness of species and habitats that reside in the world's oceans. In the ASEAN Region, marine and coastal ecosystems are considered as one of the most valuable natural assets. Based on the ASEAN Biodiversity Outlook (2011), nine of the ten ASEAN Member States in Southeast Asia are endowed with extensive coastlines, providing an aggregate total of some 173,000 kilometers of shoreline. The region hosts 28 percent of the world's coral reefs, 35 percent of mangroves and at least 33 percent of all seagrass environs on earth. These ecosystems support the highest biodiversity of coastal and marine fauna and flora in the planet. An estimated 600 million people depend directly on these resources for food and income, that also form the economic base for the fishing and tourism industries of the region.

In addition to providing food and livelihood, coastal and marine ecosystems provide functional services including: protection of water resources, nutrient storage and cycling, pollution breakdown and absorption, contribute to climatic stability, recovery from unpredictable events (e.g., typhoons and hurricanes), medicinal resources and recreation. Unfortunately these rich natural resources are faced with pressures that may diminish their ability to supply food, functional buffer zones for natural weather disturbances, and livelihood for communities.

The key drivers of biodiversity loss in Southeast Asia include ecosystems and habitat change, climate change, invasive alien species, over-exploitation (as a result of deforestation and land-use and water-use change, as well as wildlife hunting and trade for food), pollution and poverty. The ASEAN marine environment is particularly threatened with a) habitat change through the use of destructive fishing implements and deforestation, b) climate change through temperature increase, sea level rise and variability in precipitation, c) invasive alien species through introductions intended to improve food production and support for the aquarium industry, d) overfishing e) pollution from industrial, domestic and agriculture-associated wastes and f) a general increase in populations and consumption – related requirements.

There is thus an urgent need to develop appropriate management measures such as establishing marine protected areas (MPAs) and MPA networks, as well as promulgate policies that allow marshes, mangroves and other coastal ecosystems to persist and make these ecosystems more resilient to the impact of sea level rise, and thus protect the vital services they provide.

Implicatios for Marine Ecosystem

Dr. Yoshihisa Shirayama
Executive Director
Japan Agency for Marine-Earth Science and Technology

In the end of this century, the atmospheric concentration of carbon dioxide (CO2) may become twice as large as the level before industrial revolution. In such high CO2 world, the marine environment will change dramatically due to climate change and ocean acidification. For example, the area favorable for the growth of reef-building coral probably will disappear around 2060, because high sea-water temperature causes coral bleaching, whereas in lower temperature area, ocean acidification will be more serious. To overcome the problem, several mitigation options have been proposed, such as carbon capture and sequestration (CCS). In addition, many projects to utilize marine resources such as manganese nodules, methane hydrate, and deep-sea fishes are under planning. These human action however may damage the marine ecosystem seriously, and various sectors are arguing about implementation of these plans. For the continuous development of human society, sustainable use of marine resources and conservation of the health of the ocean are both essential, and to realize both these two issues, it is the most important that the uncertainty of the prediction regarding the future of marine environment should be minimal and well reliable based on holistic scientific knowledge.

Sea Ice Decline

- Catastrophic reduction of sea ice in the Arctic Ocean and global influences -

Dr. Koji Shimada
Tokyo University of Marine Science and Technology

The rate of recent sea ice reduction in the Arctic Ocean is beyond that of global warming. This evidence has been recognized as a polar amplification. To understand mechanisms of the recent rapid changes in the Arctic, order of sequential changes to accelerate sea ice reduction are significant. Here we introduce fundamental mechanism affecting the recent catastrophic reduction of sea ice associated ice-ocean coupled dynamics.

The first domino of the sequential changes is the strengthening of upper ocean circulation caused by the effective momentum penetration from atmosphere into the ocean via sea ice. The less sea ice condition reduced the momentum dissipation inside the sea ice as an internal stresses. Then the surface stress at the top of the ocean is increased and the upper ocean circulation is strengthened even under the same wind stresses. The activated upper ocean circulation delivered huge amount of heat within the Pacific Water into the Arctic basin. The warming of the upper ocean resulted in less sea ice formation in winter there. An imbalance between sea ice growth in winter and melt in summer caused total sea ice reduction and less ice condition. These sequential changes form a positive feedback loop with "no-rebound" reduction of sea ice in the Arctic Ocean. This is not variation, but is catastrophic change. The rapid sea ice decline promotes global warming, and leads regional extreme climate events far from the Arctic region since earth climate system is driven by energy balance between tropical region and polar region.

Implications for Global Trade and Distribution System

Dr. Natsuhiko Otsuka
Manager, North Japan Port Consultations Co. Ltd.

ABSTRACT

The Fifth Assessment Report (AR5) of Intergovernmental Panel on Climate Change (IPCC) pointed out that the Arctic is warming twice as fast as the rest of the world. In spite of scientific uncertainty involved, the current scientific consensus indicates that the Arctic Ocean may experience ice free summers in the 2030's. According to the satellite sea ice monitoring since the 1970s, the Arctic sea ice extent has shown a long-term decreasing trend especially in summer.

In recent years, commercial shipping route through the Arctic attracts attention due to the sea ice retreat in summer. In general, there are three Arctic shipping routes known as the North East Passage (NEP), the North West Passage (NWP) and the Trans Arctic Route. In 2010, under the cooperation between Norwegian shipping companies and the Russian companies, pilot commercial shipping via the NEP between Europe and East Asia by a non-Russian flag cargo ship had been carried out. Following this historical voyage, shipping across the Arctic via the NEP rapidly increased transporting cargoes such as iron ore, coal, gas-condensate, naphtha, jet fuel and LNG.

It is widely known that the NEP can shorten shipping distance between northern Europe and East Asia by about 30~40% compare to the conventional shipping route via the Suez Canal. It is gradually demonstrated not only that ship can sail through the NEP as planned, but also the NEP can reduce fuel consumption and fuel cost, shorten sailing time, and thereby reduce the total shipping cost. At the same time, it has been pointed out that it is not easy to predict sea ice conditions, search and rescue system is underdeveloped, the state of preparedness against accidents is still low , and the sailing season is limited for about 5 months.

With the background of the Arctic sea ice retreat and growing demand of natural resources, hydrocarbon development in the Arctic is becoming a reality. Russia has already producing crude oil in the eastern part of the Barents Sea. The Yamal LNG Project in the Ob Bay coast is expected to start production from 2017. All these projects heavily rely on the transportation through the NEP. The Yamal LNG shipping will become the first international regular shipping activity through the NEP. Thus, a small but brand-new card, which provides hydrocarbon to Asia and Europe from the Arctic, will be placed on the table of the world energy market. Furthermore, it is interesting that the shale-LNG will also appear into the market at the same year.

As is widely known Asia has become the center of world maritime transport in terms of both cargo origin and destination today. Asia will also become a major actor in the Arctic shipping via the NEP. The NEP will attract Asian users by reduction of shipping cost and sailing time, supplying energy resources from the Arctic, and providing new shipping lane free from pirates. At the first stage, the NEP will be regarded as a niche shipping market or an alternative shipping route. However, it could provide new relationship between Europe and East Asia, while these two have been the farthest territories each other.

The Arctic is becoming more accessible due to climate change and technological advance, and is gaining international importance. Asian countries could be important stake holders of the Arctic shipping. At the same time, close attention should be paid for sustainability in the use of the Arctic.

CLIMATE CHANGE EFFECTS ON FISHERIES

Mr. Árni M. Mathiesen
Assistant Director-General
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations

Abstract

It is often overlooked that over 800 million people depend, directly or indirectly, on fisheries and aquaculture for their livelihoods. In addition, fish provides essential nutrition for over 4 billion people and at least 50 percent of animal protein and essential minerals to 400 million people in the poorest countries. Trade is also an important characteristic of fisheries and aquaculture: fish products are among the most widely-traded foods, with more than 37 percent by volume of world production traded internationally. At the same time, climate change and ocean acidification are bringing an ocean of change to the world's fisheries and the communities and economies that depend on them. Climate change has the potential to compound existing pressures on fisheries and aquaculture, but can also provide opportunities. For example, the projected increasing water temperatures stemming from greenhouse gas (GHG) accumulation will also likely result in changes in distributions of species, with many marine species ranges being driven toward the poles, expanding the range of warmer-water species and contracting that of colder-water species whereas migration possibilities for freshwater fish is limited to the catchment area and hence endemic species and species in fragmented habitats will be at risk. Whether positive or negative, these changes will have social and economic impacts on the fisheries and aquaculture industries and communities - possibly causing mismatches between where the fishing happens and where it is landed or processed, changes in fish farm profitability either through inputs needed or productivity of individual farms, or through the disappearance of traditional sources of local food and livelihood security. At the macro scale, there will likely be implications for international fisheries management due to changes in the distributions of transboundary fish stocks. CO_2 accumulation is also increasing the acidification of aquatic systems, with potentially severe consequences for shellfish and squid, mangroves, tropical coral reefs and cold water corals. In addition, changes in frequency or intensity of extreme climatic events can affect fish habitat, productivity, and species distributions. These same events can also have direct impacts on fishing operations and the physical infrastructure of coastal communities. Storm and severe weather events, can destroy or severely damage assets such as boats, landing sites, post-harvesting facilities and roads. This loss of infrastructure often leads to a decrease in harvesting capacity and access to markets, affecting both local livelihoods and the overall economy of the coastal communities. The question of how to meet increasing demand for fish in the face of climate change poses a great challenge to fisheries and aquaculture management. This presentation will discuss the contributions of fisheries and aquaculture to growth, food, nutrition and livelihood security, the climate change implications for the sector – from vulnerability to adaptation, as well as win-win GHG mitigation from within the sector, to help ensure the economic growth, food, nutrition and livelihood objectives for the sector.

Adaptations to Ecosystem Affects and Marine Environmental Shifts -Marine Environmental shifts caused by the Global Climate Change and Adaptations to Ecosystem change in Japanese Fisheries-

Mr. Masanori Miyahara
President, Fisheries Research Agency, Japan

The dominant fish species alternation among the economically important species in fisheries such as sardine, anchovy, mackerel, Pollock etc occurred from ancient periods along with the climate regime shifts. The global warming trend in the ocean clearly observed in the recent decades was added to the decadal climate regime shifts as a major affecting factor. Long term monitoring research conducted by Fisheries Research Agency, Japan has detected the effects of the climate change on the status of phenology of fishery grounds. The research identified changes of the survival rate, growth rate, and distribution area of Japanese sardine (*Sardinops melanostictus*) in relation to the variability of water temperature and their food conditions of their habitat. The change of the flora of seaweed beds according to the recent warming trend is also clearly observed. Using the models of physical oceanography and ecosystem structure with the monitoring data, it became possible to predict the distribution pattern of the important species in fisheries, e.g. Japanese sardine or Pacific saury (*Cololabis saira*) while significant uncertainties are associated. The prediction is useful for preparation to meet the infrastructure of fish markets, fish processing industries, etc. In this presentation, the recent results of the studies in fisheries oceanography in relation to the ecosystem change, and the attempt to adapt the fisheries to climate change are shown.

Blue Carbon
COASTAL CARBON IN INDONESIA: FROM RESEARCH TO POLICY AND ITS IMPLEMENTATION

Achmad Poernomo[1] & Widodo Pranowo[2]
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ABSTRACT

Having the second longest coastal line in the world, Indonesia is rich of vegetation and other marine organisms in its coastal ecosystem. The ecosystem which mainly consists of mangroves, seagrasses and salt marshes has been claimed to be able to store carbon five times the amount stored by tropical rainforests per square kilometer. These carbon are known as blue carbon and having almost 23% of the world's mangrove and the largest area of seagrass system, Indonesia plays a siginficant role in global climate change and initiatives to mitigate the effects. Coastal ecosystem is facing anthropogenic stresses in many parts of the world including Indonesia. This has resulted in ecosystem degradation inhibiting its ability to sequester carbon, and even more will significantly contribute to climate change, especially through CO2 emissions. This will in turn threaten the life of coastal communities. To minimize these adverse impacts, studies in blue carbon has been initiated since 2011, and getting wider attention in the country. From a series of meetings, workshops and field study, it became necessary that there are affirmative actions should be taken such as defining adequate measures and most appropriate process to address current and long-term impacts issues in coastal areas, including vulnerability of coastal ecosystems, degradation of water quality, changes in hydrological cycles, depletion of coastal resources and adaptation to sea level rise and other impacts of global climate change. Ministry of Marine Affairs and Fisheries has also putting actions including the establissment of Blue Carbon Center to implement further policies. This paper describes the initiatives taken, from research down to implementation within the last years.

Keywords: coastal carbon, indonesia, recearch, policy, implementation, blue carbon

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/032rev2
Agenda Item: X A

Draft of Proposed Action Plan for High Level Policy Dialogue on Food Security and the Blue Economy - Presentation

Purpose: Information
Submitted by: Philippines

APEC
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2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Draft of Proposed Action Plan for HLPD-FSBE

(for vetting and discussion of OFWG as proposed by the Host Economy APEC Philippines 2015)

Overview/Background

- Consistent with Seoul Oceans Declaration (2002), Bali Plan of Action (2005), Paracas Declaration (2010), Niigata FS Declaration (2010), Kazan FS Ministerial Statement (2012), PPFS Food Security Roadmap (2013), Xiamen Declaration (2014)
  - Food security and development of Blue Economy are key drivers of economic growth and development
  - Among the ways to achieve food security is to address IUU Fishing where fishery products being traded come from sustainable fishing practices to ensure a healthy ocean and a well-managed resource base
  - Improving biodiversity of support ecosystems increase their ability to provide more goods and better services as well as their resilience
  - An important logical consequence is promoting the development of Blue Economy in the context of APEC-OFWG

Overview/Background

- IUU Fishing is:
  - Hindrance to recovery of fish populations
  - Many of illegal fishing use destructive fishing methods destroying marine ecosystems
  - Agnew et al. (2009) estimate global loss to IUU fishing is 11-26 M tonnes of fish valued at 10-23.5 B USD annually
  - Meere and Lack (2008) show that the Pacific waters account more than 60% of the global capture production (~85-92 M tonnes)
  - IUU fishing account around 3.4-8.1 M tonnes in the Pacific alone

Overview/Background

- IUU Fishing occur with small scale, artisanal, commercial fishing in territorial seas, EEZ and high seas
  - Incidental IUU activities by otherwise legitimate commercial fishers seeking to increase profits
  - Systematic IUU activities occurring under the cover of legal industrial fishing operations seeking to minimize access fees and maximizing profits
  - Industrial fishing operations which make no attempt to legitimize their enterprise and deliberately set out to conduct IUU fishing seeking maximum returns and minimize costs

Overview/Background

- Current threats to biodiversity in coastal and marine resources include
  - Habitat loss (anthropogenic factors e.g. illegal fishing, poor land use practices, poorly planned development; and natural disasters e.g. strong typhoons)
  - Unsustainable use of resources (overexploitation)
  - Pollution and marine debris
  - Effects of climate change
  - Invasive alien species
  - Burgeoning population

Overview/Background

- Improved conditions of biodiversity and well-maintained healthy coastal and marine ecosystems
  - Important support systems for healthy fisheries resources (coral reefs, seagrass beds, mangroves, soft bottom habitats (mudflats), plankton and water quality of oceans)
    - For example, a healthy coral reef is expected to provide as high as 20 MT of fish per km^2 per year (Alcala 2004)
    - A wide range of commercially and ecologically important marine species use various coastal habitats during their ontogenetic development
    - Reef fishes are known to actively choose good habitats during settlement from larval phase to juvenile stages

Overview/Background

- Improved conditions of biodiversity and well-maintained healthy coastal and marine ecosystems
  - Provide better ecological services (coastal protection, climate regulation, connectivity)
  - Improved resilience and adaptation to effects of climate change
- Consequently, the promotion of the concept of Blue Economy in the context of APEC-OFWG common understanding of Blue Economy (OFWG3-Xiamen 2014) as
  - An approach to advance sustainable management and conservation of ocean and coastal resources and ecosystems and sustainable development, in order to foster economic growth.

Overview/Background

- Potential Outcomes of this Action Plan
  - Contribute to global efforts in conserving and managing fisheries resources,
  - Improve biodiversity of coastal and marine ecosystems which can lead to sustainability in consumption and production and achieve food security,
  - alleviate poverty
  - improve the resilience of ecosystems against effects of climate change

Three Priorities of this Action Plan

1. Combat IUU Fishing for sustainability of food supply and trade
2. Halt the decline of biodiversity of coastal and marine ecosystems in the APEC region
3. Advance Blue Economy cooperation across all APEC fora

During and after discussions the host economy expect:

- Inputs, views, comments and recommendations from member economies to move forward
- Support from member economies on the action plan

Priority 1: Combat IUU Fishing

1. Establish a framework for cooperation among APEC economies towards the following:
   - development and establishment of internal mechanisms within each economy to combat IUUF
   - facilitate and strengthen the cooperation among member economies to effectively implement the monitoring, control and surveillance (MCS) of fishing activities
   - promote the development and adoption of properly designed tools for monitoring and assessment of catches for the management of fish stocks

Priority 1: Combat IUU Fishing

2. Develop the following:
   - Sustainable business model (meant to sustain efforts to combat IUU);
   - Provide appropriate incentive systems (e.g., for the development and adoption of selective gear/capture technologies for legal-sized target species);
   - programs to rebuild fish stocks; private public partnerships;
   - mechanisms to support supplemental livelihood/ small scale enterprises consistent with the APEC-OFWG common understanding of Blue Economy

Priority 1: Combat IUU Fishing

3. Conduct and actively pursue social marketing and education campaigns to build and enhance constituencies and champions to combat IUUF
   - Programs designed to change behavior and attitudes of stakeholders how they view the finite nature of fisheries resources
   - Promote the ratification, entry into force, and implementation of the FAO Agreement on Port State Measures

Priority 2: Halt decline of biodiversity

1. Establish an APEC-wide framework of cooperation adopting the following:
   - the best practices including the Coral Triangle Initiative
   - relevant initiatives of the Convention of Biological Diversity
   - with a view to manage food sources as entire food system from crops to fisheries to achieve food security and poverty alleviation, while preserving ecological integrity of coastal and marine ecosystems
   - (Examples are establishment of effectively managed networks of marine protected areas and seascapes, ridge to reef approaches)

Priority 2: Arrest decline of biodiversity

2. Develop and create the following
   - Sustainable financing models,
   - Incentive systems,
   - Private public partnerships,
   - Social marketing and education campaigns to sustain efforts for the conservation and enhancement of biodiversity for coastal and marine ecosystems

Priority 2: Arrest decline of biodiversity

3. Develop and adopt ecosystem-based approaches (EBA) and climate-responsive and adaptive technologies within the APEC region
   - To improve the resiliency of marine and coastal ecosystems
   - Maintain and enhance ecological goods and services as part of disaster risk reduction measures and support sustainable livelihoods

Priority 3: Advance the concept of Blue Economy

1. Develop and promote sustainable consumption and production (SCP) business models
2. Develop, support and provide incentive systems for:
   - Blue Economy enterprises consistent with management and conservation of ocean resources,
   - climate-responsive and adaptive enterprises,
   - diverse livelihood strategies that reduce hazards associated with climate change and enhance the resiliency of coastal ecosystems

Priority 3: Develop and promote concept of Blue Economy

3. Build and enhance adaptive capacities and resilience of communities, institutions, and coastal and other ecosystems
4. Establish working partnerships and networks among APEC economies as well as with international and regional bodies, and non-government organizations (NGOs)

Monitoring Progress and Reporting

- Member Economies will develop and adopt a framework for an APEC-wide reporting mechanism
  - Key targets and indicators against which progress of the implementation
  - Each Member Economy to decide the most appropriate key targets and indicators for its activities
  - HLPD may wish to consider common and collective key targets and indicators for the three priorities of the Action Plan.

THANK YOU FOR YOUR ATTENTION

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/033
Agenda Item: III A

Economy Report - Thailand

Purpose: Information
Submitted by: Thailand

APEC
PHILIPPINES
2 0 1 5

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

5th Meeting of the OFWG

APEC Information Sharing

By Thailand

The Thailand Economy has seen the importance of marine and coastal resources and has been aware of the degradation of such natural resources. Regarding to this the improvement in legal aspect has been intensified in order to eliminate the gaps of law enforcement. It is most favorable that the "Act of Promotion on Marine and Coastal Resources Management 2015" will be enacted on 26th June 2015. This is the new Act authorized by the Department of Marine and Coastal Resources. The Act conforms to one of the most important priority areas which APEC members need cooperation under Xiamen Declaration, i.e. "coastal and marine ecosystem conservation and disaster resilience". Under this Act there will be more effectiveness in conservation of marine and coastal biodiversity, the marine endangered species, and the ecosystem such as coral reef, seagrass bed, mangrove and wetland. The establishment of marine protected area is encouraged under the Act. More importantly, public participation in management through the committee at national level and provincial level under the Act is strengthened.

Besides the Act, for reforming the country, at present Thailand Economy is preparing the draft of Thailand's new constitution which also emphasizes the reform of natural resources management.The management will be based on economic sufficiency philosophy, the good environmental governance and the fair access to natural resources. Concerning the marine and coastal resources context, it is determined to reform on the structure of authorization and legislation.Many aspects, such as management of MPA and waste/pollutant, the marine spatial planning, evaluation of the damage of natural resource and environment, etc. will be improved. The public participation is strongly encouraged.

As a consequence of EU issuing a yellow card to Thailand over IUU fishing, the government of Thailand Economy continue its effort in reforming the whole system of fishing sector. It would also work to boost confidence of and ensure all related organizations, domestic and overseas, that Thai fishing sector would be improved. The prime minister of Thailand Economyhas established the "Command Center for Combating Illegal Fishing – CCCIF) on 1st May 2015 in order to urgently tackle this problem within 3 or 6 months otherwise there will be the great impact on the export of fisheries products. Therefore, for the sustainability of Thailand economy's fisheries industry, it is urgent to solve the problem by raising the fisheries standard of Thailand Economy to meet the international standard. According to this, Thailand's national Plan of Action to Prevent, Deter and Eliminate IUU Fishing (NPOA-IUU) will be revised and implemented. In addition, draft revision of the Fishing Act has already been approved by National Legislative Assembly, and will be enacted 60 days after being published in the Royal Gazette.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/034
Agenda Item: III A

Economy Report - Korea

Purpose: Information
Submitted by: Korea

APEC
PHILIPPINES
2 0 1 5

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Republic of Korea Report

As mentioned during OFWG 4, the Republic of Korea will be presenting the final outcomes of the APEC Project, Preparedness, Response and Assessment on Oil Spill, other known as PRAOS, Phase I later on this afternoon.

Additionally in order to promote cross fora collaboration, ROK will be attending the 8th EPWG this week to give a similar presentation. The main purpose is to promote a way to involve EPWG in the development of the other phases of the project in the future.

Please note that ROK will also be submitting a concept note on Phase 2 of PRAOS for the 2nd phase of the APEC funding process this year and would appreciate the support and participation of the member economies.

In regards to IUU fishing, on the 21st of April, ROK has been de-listed from the IUU fishing country list from the EU,

ROK had been designated as IUU fishing country in November 2013, since then to combat IUU fishing, we have amended our Overseas Fisheries Act on two accounts on July 2013 and January 2015.

ROK have installed Vessel Monitoring Systems (VMS) on all Korean fishing vessels and through the Fisheries Monitoring center (FMC) we are able to monitor the activities of the fishing vessels constantly.

Therefore, as a result we have strengthened our international cooperation in combatting IUU fishing and ROK will strive to keep eradicating and monitoring IUU fishing and be cooperate actively to combat IUU fishing internationally based on our experiences in combatting IUU fishing.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/035
Agenda Item: VII A

Draft OFWG Food Security Action Plan

Purpose: Information
Submitted by: Drafting Committee for the OFWG Food Security Action Plan

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

DRAFT Oceans and Fisheries Working Group (OFWG)
Food Security Action Plan

Background

Fisheries and sustainable aquaculture, are critical to ensuring food security, sustainable livelihoods, and economic prosperity worldwide. This is particularly true in the APEC region, whose economies account for over 80% of global aquaculture production and more than 65% of the harvesting and processing of the world's capture fisheries[1]. Ensuring long term, sustainable sources of food from the ocean not only bolsters global food security, but also directly support APEC's mission of "promoting and accelerating regional economic integration, enhancing human security, and facilitating a favorable and sustainable business environment," thus supporting sustainable economic growth and prosperity in the Asia-Pacific region. For more than a decade, APEC Ministers and Senior Officials have noted the importance of ecosystems, fisheries, aquaculture, and combating IUU fishing and associated trade to maintaining regional food security[2]. These relationships were once again emphasized in the Xiamen Declaration, a key output of the 2014 APEC Ocean-Related Ministerial Meeting. In order to effectively address food security, the Xiamen Declaration calls on the OFWG to work in close coordination with the APEC Public-Private Partnership for Food Security (PPFS). PPFS includes a working group addressing the agriculture and fisheries and sectors, and contemplates address fisheries and aquaculture work in the recently launched Food Security Roadmap. This Action Plan details a long term OFWG strategy for addressing food security aligned with the APEC food system and PPFS Roadmap. The OFWG Action Plan will be updated as necessary and should be considered to be a "living document".

Potential Topics for Consideration:
Note that this list is not prioritized and some activities are currently on-going.

- Climate Change
- Derelict fishing gear/marine debris
- Destructive fishing practices
- Environmentally sustainable aquaculture practices
- Food Safety
- Integrated, science-based management of watersheds, coasts and marine environments (i.e. managing food sources as an entire system, from crops to fisheries)
- IUU and associated trade
- Nutrient and pollutant inputs into waterways (important link to terrestrial agriculture)
- Ocean Acidification
- Value and supply chain issues
- Waste and food loss

Priority outreach/actions/work/projects

- Develop joint project with PPFS and other relevant APEC fora to address nutrient/pollutant inputs to waterways
- Develop long term strategy with other relevant APEC fora to better understand impacts of climate change and ocean acidification on fish and their habitats
- Promote cooperation and exchange of information concerning IUU fishing and management measures applied by the Regional Fisheries Management Organizations (RFMOs) and other relevant organizations

[1] APEC Ocean-Related Ministerial Meeting Joint Statement (Xiamen Declaration), Xiamen, China, 28 August 2014

[2] See the Seoul Oceans Declaration (AOMM1 - 2002), the Bali Plan of Action (AOMM2 - 2005), the Paracas Declaration (AOMM3 - 2010) the Niigata Food Security Declaration (2010), the Kazan Food Security Ministerial Statement (2012), and PPFS Food Security Roadmap (2013).

- Promote cooperation and exchange of information with other international fora engaged in work to address the roles of oceans and fisheries in food security (e.g., the Food and Agriculture Organization (FAO) Committee on Food Security and the FAO High Level Panel of Experts (HLPE) on Food Security
- Develop projects or plans of action with PPFS and CTI on environmentally sustainable aquaculture practices (ex: enhancing the opportunity for aquaculture's contribution to overall food security by increasing the availability of low-cost fish, enhancing the production for domestic and export markets, and providing revenue and employment, while ensuring environmental sustainability and ensuring best management practices.)
- Collaborate with the PPFS to ensure the APEC food system considers management of food sources as an entire system, from crops to fisheries.
- Develop value chain project, taking into consideration recent FAO policy recommendation for small scale fisheries and aquaculture

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/036
Agenda Item: III A

Economy Report - Peru

Purpose: Information
Submitted by: Peru

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

Peru Opening Statement
5th OFWG Meeting 2015

Thanks again to the Philippines for hosting the fifth meeting of the Ocean and Fisheries working group and congratulations for this beautiful and wonderful place, the island of Boracay. On the other hand, we want to give many thanks to all the economies that endorsed our concept note, as we know our proposal was not selected in the First Project Session, but we are going to make all the efforts so it can be elected in the Second One.

In the last Ocean and Fisheries working group meeting we presented a large list of activities regarding our commitments with the Ocean and Fisheries working group. Now Peru continues fighting with the illegal, unreported and unregulated fishing in order to ensure the responsible use of hydro biological resources through adequate monitoring of fishing activities, for this reason, our economy has modernized the satellite tracking system (SISESAT) with ultimate technology equipment to strengthen the monitoring of fishing vessels in order to prevent incursions in reserved or prohibited areas. The Control Center has a new software which will automate several processes of monitoring, providing better and safety information.

We continue developing a bilateral project with Chilean economy to protect the Humboldt Current Large Marine Ecosystem that is one of the most important and productive marine ecosystem in the world and it extends around the coast of Peru and Chile flowing from south to north. This ecosystem is one of the most productive marine ecosystems, for example, the combined fisheries capture in Chile and Peru represents approximately 20% of the global fish catch despite representing no more than 1% of the world ocean surface. Also this ecosystem is a region of high biodiversity of global significance

Regarding to food security, the objectives of our current fishery policy are aimed to promote human consumption of marine resources and resource sustainability focused in an ecosystem based management, the development of internal and external markets, and the forging of institutionality. On the other hand, we are making big efforts to strengthen the artisanal fishery that provides more than 95% for fishery products for human consumption.

Finally, we are sure that we will achieve our aims for this meeting and work in harmony with all OFWG members

Thank you for your attention

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/037
Agenda Item: IV C d

Project Brief - Designing a System for Trading Online Fishery Products

Purpose: Consideration
Submitted by: Peru

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

PERU PROPOSAL

Project Brief

"Designing a system for trading online fishery products"

APEC economies recognize the importance of building sustainable and strong communities, for this reason it is considered as a priority within the Oceans and Fisheries Working Group (OFWG), the conservation and rational exploitation of hydro biological resources.

In addition, APEC economies consider the need to strengthen the business of artisanal fishermen due to their low organizational capacity, administration and negotiation. They represent an entrepreneurial sector that requires a medium that could allow them to optimize their fishing activities and to make a more efficient use of fisheries resources.

It is for this reason that Peru would like to present to APEC economies the project "Designing a system for trading online fishery products", which aims to create a platform or virtual space for artisanal fishermen who can offer their fishery products, and engage in direct negotiations with the end buyers.

This virtual space will contribute to improve information mechanisms for market access, in order to achieve an optimal balance between supply and demand, and also, it will contribute to reduce fishing efforts on marine resources. The main reason is that activities carried out at the request of the buyer ensure a sustainable development of artisanal fisheries and also, ensure food security for not only the populations of APEC economies, given that fishery products can be offered for direct human consumption.

The objectives of this project are the following: i) Designing a virtual platform as an ideal space for direct negotiation between the artisanal fishermen with their buyers, ii) Developing an organizational and administrative framework which allow fishermen to associate for the purpose of offering their products through this platform; and, iii) Implementation of a pilot of the on-line trading system.

This project is a crossed collaboration initiative that responds directly to the objectives of the Ocean and Fisheries Working Group, the Committee on Trade and Investment (CTI) and the APEC Food System, the Policy Partnership on Food Security (PPFS). On the other hand, it is aligned with the Paracas Action Agenda, the Nigata Action Plan and the Xiamen Declaration.

Asia-Pacific
Economic Cooperation

2015/SOM2/OFWG/041
Agenda Item: X A

Updates - High Level Policy Dialogue on Food Security and the Blue Economy (HLPD-FSBE)

Purpose: Information
Submitted by: Philippines

APEC
PHILIPPINES
2015

5th Oceans and Fisheries Working Group Meeting
Boracay, Philippines
10-12 May 2015

UPDATES

HIGH LEVEL POLICY DIALOGUE ON FOOD SECURITY AND THE BLUE ECONOMY (HLPD-FSBE)

HIGH LEVEL POLICY DIALOGUE ON FOOD SECURITY AND THE BLUE ECONOMY (HLPD-FSBE)

- **Date:** October 4-6, 2015
- **Venue:** Iloilo City, PHILIPPINES
  - Environmental tour: SEAFDEC and/or Guimaras Island

HIGH LEVEL POLICY DIALOGUE ON FOOD SECURITY AND THE BLUE ECONOMY (HLPD-FSBE)

- **Expected Participants:** 200
  - ✓ Senior Officials of APEC economies
  - ✓ APEC Business Advisory Council (**ABAC**);
  - ✓ Pacific Islands Forum Secretariat(**PIF**);
  - ✓ Pacific Economic Cooperation Council (**PECC**)
  - ✓ Association of South East Asian Nations (**ASEAN**) Secretariat
  - ✓ **Philippine Government Agencies:**
    Dept. of Agriculture (DA),
    Dept. of Environment and Natural Resources, (DENR),
    Commission on Higher Education (CHED),
    Dept. of Science and Technology(DOST).

HIGH LEVEL POLICY DIALOGUE ON FOOD SECURITY AND THE BLUE ECONOMY (HLPD-FSBE)

- **Invitations to be sent out** at the end of May, 2015
- **Confirmation of Attendance**: September 2015
- **Draft Action Plan for vetting** to the 21 economies (until August 15, 2015)

ASIA-PACIFIC ECONOMIC COOPERATION
5th MEETING OF THE OCEAN AND FISHERIES WORKING GROUP (OFWG)
Crown Regency Resort and Convention Centre, Station 2, Boracay Island, Philippines
10-12 May 2015

Sixteen APEC Economies attended: Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Papua New Guinea; Peru; the Philippines; the Russian Federation; Singapore; Chinese Taipei; Thailand; the United States; and Viet Nam. Observers included representatives from Australia's Policy Partnership for Science Technology and Innovation (PPSTI) delegation and the APEC Business Advisory Council (ABAC). One guest, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), was present. The meeting was chaired by the OFWG Lead Shepherd (LS) Undersecretary Asis Perez of the Philippines. An Executive Summary of the meeting is attached as **Appendix A.**

Day 1: 10 May 2015

Session I - Opening Session

A. Welcoming Remarks by OFWG Lead Shepherd

The OFWG Lead Shepherd, Undersecretary Asis Perez, welcomed the participating the economies to the Philippines and highlighted the tasks ahead of the group, continuing on the good work done during SOM1 in Clark, Philippines in January.

B. Introduction of Delegation Leads (OFWG Lead Shepherd)

The head delegates introduced themselves to the group. A list of participants will be annexed when available.

C. Appointment of Rapporteur (OFWG Lead Shepherd)

The United States volunteered as rapporteur and the working group approved.

D. Formation of Committee to assist with drafting of Summary Report

A committee was formed to assist the rapporteur in the drafting of the meeting report: The United States, People's Republic of China, Japan, Papua New Guinea, Philippines, and Viet Nam. Other economies were invited to join at any time during the meeting.

E. Introduction of the Mr. Graeme Drake, Independent Assessor to undertake the 2015 Independent Assessment of the OFWG (OFWG Lead Shepherd and Secretariat)

The Lead Shepherd introduced the independent assessor. Mr. Drake noted that he planned to not only watch the meeting for the next two or three days, but also meet with delegations in order to assess the progress of the OFWG in terms of delivering on various commitments and statements made by Ministers and Leaders since 2010. He highlighted that frank discussions were welcome and helpful and that any input given during discussion or through written correspondence would not be associated with any individuals or individual economies.

F. Adoption of the Agenda (OFWG Lead Shepherd)

The agenda was adopted by consensus with no additions from the floor.

The final agenda can be found in document 2015/SOM2/OFWG/001

Session II – Developments in APEC since the 4th OFWG Meeting in May 2015

A. *Overview of intersessionally endorsed actions and documents since OFWG 4 (OFWG Lead Shepherd)*

The Lead Shepherd, with assistance from the Secretariat, gave a brief overview of the intersessionally endorsed actions. These actions included endorsement of the Terms of Reference of the Virtual Working Group on Marine Debris, progress to implement the endorsed climate change workshop and coastal ecosystem services valuation study, continued support on updating the APEC Marine Sustainable Development Report, OFWG representation on the Mainstreaming Ocean Issues Initiative Steering Committee, and distribution of documents for the groups review related to the High Level Policy Dialogue on Food Security and Blue Economy (HLPD-FSBE) and the Virtual Working Group on Marine Debris 2015 Work Plan. Each of these items were also discussed in more detail during their appropriate agenda item.

B. Update on work of the Mainstreaming Ocean-Related Issues (MOI) Steering Council (Lead Shepherd)

The Lead Shepherd noted that he attended the Mainstreaming Ocean-Related Issues Steering Council in January during SOM1 and the Secretariat provided the OFWG 2015 Work Plan to the Steering Council for their reference. He then directed the group to Document 2015/SOM2/OFWG/024 for more details. One economy asked a question regarding the Terms of Reference for that group, which were mentioned in the document in question. The Secretariat confirmed that they had not logged a development on the Terms of reference and that any additional documents would be given to the OFWG when received—likely to be received after the Steering Council coordinator gave an update to the SOM Steering Committee on ECOTECH on May 19th.

C. *APEC Secretariat Report on Relevant Developments in APEC (Secretariat)*

Secretariat highlighted recent developments in APEC, including the endorsement by the SCE of the OFWG 2015 Work Plan, the upcoming ECOTECH discussion on the APEC draft Capacity Building Policy, the upcoming Collective Strategic Study on the Free Trade Area of the Asia Pacific, the APEC SME Action Agenda, and the Post-2015 APEC Growth Strategy discussions. One quesiton was asked regarding the process and venue for the discussion on the Collective Strategic Study on Free Trade Area of the Asia Pacific, which the Secretariat clarified would take place under the Committee on Trade and Investment (CTI) primarily via a Task Force with members from all economies, headed by the United States and China, and a Friends of the Chair group, also with members from all economies. ABAC made a point to highlight the discussions on services, noting that many in the OFWG may think services are not applicable to their work, but that actually it is pivotal to determining if activity is competitive or not.

D. *Progress of APEC Marine Sustainable Development Center (China)*

China reviewed the work of the APEC Marine Sustainable Development Centre (AMSDC) since January including the 2015 Annual Working Meeting, the development of a Strategic Action Plan, attendance at various regional and international meetings, and the compiling of the 3rd APEC Blue Economy Forum proceedings. They also noted the planning for an anticipated APEC Marine Spatial Planning training workshop and the Blue Economy Forum workshop, to be held later this year. One economy applauded the Center's presentation at the United Nations Informal Consultative Process on Oceans and Law of the Sea meeting. Another economy inquired about the blue economy workshop, to which China responded that they would share broadly the report of the past workshop and any plans for the next workshop intersessionally.

Session III - Information Sharing

A. *Information Sharing by APEC Economies*

Delegates from eleven economies provided brief reports on key ocean and fisheries issues relevant to their economies, and on recent progress made on issues relevant to the OFWG since the January OFWG4 meeting. Members reported on progress made in areas of sustainable fisheries and aquaculture, marine conservation, marine disaster risk reduction, food security and safety, marine science technology, domestic legislation, blue economy efforts, and international cooperation. Some economies also provided written Economy Reports to the Secretariat (Documents 2015/SOM2/OFWG 003, 004, 013, 016, 022, 031, 033, 034, 036, 038, 042, 043) and others were encouraged to submit written reports to the Secretariat.

Session IV – OFWG Operations

A. Work Plan

a. Discussion of progress on implementing the OFWG 2015 Annual Work Plan (OFWG Lead Shepherd)

The Lead Shepherd went over the progress implementing the OFWG 2015 Annual Work Plan, noting that outside of the climate change workshop held the day prior and the engagement of ABAC at the meeting, implementation had been limited. He reminded the group that OFWG's actions should be guided by the endorsed work plan as we move forward through the year.

B. Strategic Plan

a. Discussion and endorsement of a forward process for drafting and endorsing the next OFWG Strategic Plan (OFWG Lead Shepherd)

The Lead Shepherd reminded the group of the decision made in January OFWG 4 to wait for the result of the independent assessor report before moving forward on the development of the Strategic Plan. In response to a question, the independent assessor noted that his report would be primarily retrospective and that a report should be available to the group by the end of June. The Lead Shepherd sought feedback from the group regarding the process that should be followed to complete the work intersessionally, to which the group affirmed the approach of using a Friends of the Chair Group. The People's Republic of China, Japan, Papua New Guinea, Peru, Philippines, Russian Federation, the United States, and Viet Nam all expressed their intention to join the group.

C. Projects

a. Report on outcomes from projects implemented

a. Chinese Taipei (OFWG 03 2013S)

Chinese Taipei presented on the outcomes of their project, the 15th APEC Roundtable Meeting on the Involvement of the Business/Private Sector in the Sustainability of the Marine Environment. The most recent round of this meeting, attended by nine APEC economies in October of 2014, focused on the topics of wetland conservation and eel resource conservation and management. The next meeting is scheduled for 28-30 October, 2015 with the following endorsed topics: Climate change and marine resources and marine clean energy. Chinese Taipei also proposed for the group's consideration another workshop in 2016 with the following two potential themes: food security and blue economy. They noted it would be self-funded if the budget was available and welcomed feedback from the OFWG.

b. Republic of Korea (OFWG 01 2014A)

The Republic of Korea presented the outcomes of their project: Preparedness, Response, and Assessment of Oil Spill (PRAOS) Phase 1. The project was a training program on raising awareness and attention of the APEC economies on responding to marine oil spills, as well as an opportunity for information sharing. It was attended by members of the OFWG and EPWG, as well as the International Maritime Organization (IMO), and the resulting manual is available electronically if desired. Potential further phases were also outlined in the presentation: a training program on environmental impact assessment (Phase 2), technical assistance to develop an operational manual for economies (Phase 3), and development of an APEC regional collaborative measure on marine oil spills (Phase 4).

b. *Update on current projects*

a. Japan (OFWG 02 2014)

Japan briefly outlined the Workshop on the Climate Change Impact on Oceans and Fisheries Resources, which was successfully held the day prior to the OFWG5 meeting with about 100 participants from 15 economies as well as 12 prominent lecturers (Document OFWG/SOM2/009).

Japan thanked the participants, Secretariat, and the host economy for contributing to a successful event. Further details on the meeting discussions was given during a separate agenda item.

b. United States (OFWG 03 2014)

The United States gave an update on their project, "Assessing the Economic Value of Green Infrastructure in Coastal Ecosystems to Disaster Risk Reduction, Response and Coastal Resilience in the APEC Region". They noted some delays securing the contractor but assured participants that the survey part of the project would not be rushed. One economy asked for confirmation on the format of the outcome of the report. The United States clarified that the outcome would be a report on the regional values—not economy by economy values.

c. *Progress of projects submitted by the OFWG at Session 1 2015, and of any other projects under other APEC fora that may be relevant to the OFWG (Secretariat)*

The Secretariat gave an update on the three endorsed concept notes that went forward for funding consideration in Session 1. He reported that although one concept note was close, none got funding. 112 concept notes were put forward and although 42 got funded, only 17 were funded from general funds. The Secretariat then outlined the procedure for self-funding the previously endorsed projects and the need to re-endorse the projects if the group would like to put them forward again in Session 2, which should have approximately $7 million USD available for funding, although only around $1.6 million of that is in the general funds.

The United States gave updates on two projects relevant to the OFWG, and encouraged OFWG participation in both:

- (APEC funded) SCSC Project on Preparing Trainers to Deliver Sustainable Education to Prevent Emerging Animal Diseases and Food Safety Concerns Threatening Aquaculture Development; and
- (Self-funded) Workshop on Wildlife Trafficking and IUU fishing under the APEC Anti-Corruption and Transparency Working Group (ACTWG) Pathfinder Program on Strengthening the Fight Against Corruption and Bribery.

d. *Discussion of any proposed new APEC-funded projects for Session 2 2015*

Four economies presented on potential projects for the next funding cycle:

- Malaysia: "Capacity Building for the Establishment of Marine Biotoxin Reference Laboratory" (2015/SOM2/OFWG/010)
- Papua New Guinea: "Food Security and Climate Resilience Programme" (2015/OFWG/SOM2/011)
- Peru: "Designing a System for Trading Online Fishery Products". (2015/SOM2/OFWG/037)
- Indonesia: "Promoting Small-Scale Fishers and Fisheries Industries To the Global Value Chain" (2015/SOM2/OFWG/023)

Economies expressed their appreciation for the presentations and all economies were encouraged to follow up with any questions.

e. *Discussion of any proposed new self-funded projects (All Members invited to outline new project proposals)*

The People's Republic of China outlined their proposed Marine Spatial Planning Training, which they first raised with the group in 2014. They noted this would build on previous trainings.

Session V – Free and Open Trade and Investment

Although no presentations were planned under this item, during the general discussion the United States gave updates on some relevant activities in other fora, including the current status of the Trans-Pacific Partnership negotiations, work under the Food and Agriculture Organization (FAO) and the Organization for Economic Cooperation and Development (OECD), and noted that the update of the 2000 Price Waterhouse Cooper's fisheries transparency work done through the APEC Committee on Trade and Investment was still outstanding. The United States highlighted the fact that trade-related work underway in these organizations and free trade negotiations may provide guidance for future work of the OFWG. Two economies emphasized the importance of improving transparency and its hope that all APEC economies would make continuous efforts towards information sharing.

Session VI – Sustainable Development and Protection of the Marine Environment

A. Update from Virtual Working Group on Marine Debris

The Secretariat reviewed the intersessional actions of the OFWG in regards to the Virtual Working Group on Marine Debris, including the endorsement of the Terms of Reference and the distribution of the 2015 Work Plan for review. Representatives from the Virtual Working Group then reviewed some edits recently made to the 2015 Work Plan, outlined the process for endorsing the Work Plan, and encouraged all OFWG members to join the group if interested. After a question was received, the Secretariat confirmed the membership was open to all OFWG members and the only requirement to join was a written expression of interest. Russia and the People's Republic of China asked questions on language related to non-governmental participation and potential edits to the Work Plan were discussed on the side. After discussion, the OFWG endorsed the 2015 Work Plan with minor edits.

B. An overview of PEMSEA's work and the application of integrated coastal management (ICM) to oceans and fisheries (PEMSEA)

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), gave an overview of their history, priorities, and function. They highlighted their work on Integrated Coastal Management (ICM), including work incorporating Marine Protected Areas, Climate Change, and Disaster Risk Reduction. They also noted the upcoming East Asia Seas Congress 2015. The PEMSEA representative outlined several potential areas of collaboration with APEC in terms of information sharing, preparation and dissemination of konwledge products, and establishment of blue economy learning sites. The People's

Republic of China noted the engagement from PEMSEA in China and with APEC at AOMM4. ABAC asked a question regarding PEMSEA's engagement with the World Ocean Council, which PEMSEA responded that they are looking to engage more with them. Chinese Taipei asked if PEMSEA had a blue economy definition; PEMSEA noted they are still trying to determine what the term means to them and their partners.

Day 2: 11 May 2015

Session VII – Food Security

A. Discussion and endorsement of OFWG Food Security Action Plan (United States)

The Chair of the OFWG Food Security Action Plan Drafting Group gave an overview of the changes to the draft document discussed by the drafting team. Some additional edits, one of them being improving livelihoods of coastal communities as suggested by Viet Nam, were requested on the floor and finalized later in the meeting. Discussion then turned to the importance of coordinating discussion on food security issues with the Policy Partnership for Food Security (PPFS). It was noted that the OFWG already had a liaison to the PPFS, Allison Reed (United States), but several economies noted the need for an additional mechanism to increase collaboration, especially in preparation for the High-Level Policy Dialogue on Food Security and Blue Economy. Several options were discussed, including overlapping meeting sessions, an official sub-fora, or cooperation amongst Friends of the Chair groups.

The OFWG endorsed the OFWG Food Security Action Plan, incorporating edits previously discussed (Document 2015/OFWG/SOM2/035rev1).

B. Practice on Coastal Eco-Aquaculture – Development of Circulating Aquaculture Model (China)

The People's Republic of China presented on the technology and practice being used to promote ecological circulating coastal aquaculture that may contribute to the food security and blue economy. They invited any economies with question to contact the point of contact in document 2015/SOM2/OFWG/012.

C. Update on PPFS work (Lead Shepherd)

The Lead Shepherd, who is also the Chair of PPFS this year, noted that PPFS would meet for the first time this year after the OFWG meeting. He outlined their leadership rotation process and his desire to increase collaboration and discussion amongst the groups, especially overlapping group collaboration. Although discussed in the context of the discussion on the OFWG Food Security Action Plan, there was further discussion about how to integrate the food security discussions of the OFWG and the ocean and fisheries relevant discussions in PPFS. Questions focused on how to reconcile the OFWG Food Security Action Plan, PPFS road Map, and the HLPD proposed action plans. The Secretariat provided an example of cross-fora collaboration in preparation for another high level dialogue to be held this year on Science and Technology in Higher Education. No resolution was reached, but desire for further consultation among fora was supported by the working group.

Session VIII – Climate Change

During this session, Japan presented the outcome of the (insert actual name) highlighting the key message of the integration between science and policymaking, which may strengthen the policy coherence in the approach on the social and economic adaptation to the impact of climate change (Document SOM2/OFWG/027). Many economies applauded workshop discussions and outcomes and expressed a desire to see presentations and outcome documents shared broadly, following appropriate APEC publication guidelines and endorsement processes. One economy raised for the group that of relevance to the discussion, the current United Nations Framework Convention on Climate Change (UNFCCC) does not mention oceans at all and encouraged all economies to engage.

Chinese Taipei noted that their upcoming Roundtable would focus on climate change, as a way to continue discussion on the topic.

Session IX– Blue Economy

A. Presentation on Blue Economy (China)

China gave a presentation on recent regional and international meetings on blue economy for information sharing. They also highlighted upcoming meetings in Portugal, Durban, and their anticipated 4th APEC Blue Economy Forum. In response to a question, China noted they would provide information to the OFWG as in past practice. A question was raised as to whether or not the relevant participants were representing the APEC Marine Sustainable Development Center or as individual experts. , The Secretariat outlined the applicability of APEC's Guidelines on Cooperation with Non-Members and Publication and Logo Guidelines.

B. PEMSEA's efforts to promote blue economy through the East Asian Seas Sustainable Business Network and facilitate investment in ICM through a regional knowledge management platform being developed with World Bank (PEMSEA)

PEMSEA provided information on their relevant blue economy related activities, including their research report on blue economy for business for the Seas of East Asia, the East Asian Seas Sustainable Business Network, and the World Bank Regional Knowledge Management Project. Russia noted that they supported the idea of extended collaboration with any participants in the frame of APEC, in accordance with APEC Guidelines on Managing Cooperation with Non-Members, but also Russia expressed its concern regarding the lack of information about these non-member participants, such as non-governmental organizations, presented in APEC meetings as an observer or guest. Russia noted it would be useful if detailed information was shared (such as main purposes, funding sources and etc.) about potential non-governmental observers and guests before APEC meetings.

Session X– High Level Policy Dialogue on Blue Economy and Food Security (HLPD-FSBE)

A. Update on preparations for the HLPD-FSBE in Iloilo City from 4-6 October 2015 (Philippines)

The Philippines gave brief logistical updates, noting that the HLPD-FSBE will take place 4-6 October, 2015 in Iloilo City, Philippines with approximately 200 participants. Invited participants will be APEC Senior Officials, ABAC, the Pacific Islands Forum Secretariat, Pacific Economic Cooperation Council, and the Association of South East Asian Nations Secretariat. These participants should expect invitations at the end of May with confirmation of attendance due in September. Economies suggested that other organizations, specifically FAO, Western and Central Pacific Fisheries Commission (WCPFC), and other regional fisheries management organizations (RFMOs) be invited to the HLPD.

B. Substantive Discussion of draft Document for HLPD-FSBE

To begin discussion, the Philippines gave an overview of their intention for the HLPD-FSBE and why they chose the priorities in their draft action plans (Combat IUU fishing, Stop the Decline of Biodiversity, and Advance the Common View of Blue Economy).

Several questions were asked regarding the process and status of the Concept Note on the Draft Action Plan. It was clarified that as a host economy initiative, the document being reviewed by the OFWG did not need endorsement by the OFWG. Comments on the draft action plan (Document 2015/OFWG/SOM2/017rev1) will continue to be received by the Philippines from the OFWG through to August 15, 2015. It would be up to the host economy to hear suggestions and make changes before engaging in some discussion process amongst appropriately designated representatives as to reach a consensus document at the HLPD. Several processes for further review of the action plan(s) were discussed, including review over email, virtual or in person workshops amongst relevant working group representatives, and a preparatory meeting two days prior to the HLPD.

Some general points raised and suggestions made centered around the need to look more broadly at food security (beyond IUU fishing), some concerns that it wasn't appropriate for APEC to set up new frameworks on these topics, and a need to make sure efforts were not duplicating other work in other fora. Also, some raised a concern that the document in question should not set tasks for economies' obligatory commitment. Several more specific edits/points were raised on the draft text during discussion, the Lead Shepherd encouraged OFWG members to share specific edits and comments with the Philippines. The Philippines seconded this approach, noting they welcomed feedback.

Day 3: 12 May 2015

Special Session: Presentation by Australia Representative to the PPSTI

A. Policy Partnership on Science, Technology, and Innovation (PPSTI) Self-Funded Project entitled "Building regional ocean and land observation systems to safeguard APEC resources and communities."

A representative from the Australian delegation to the APEC Policy Partnership for Science, Technology, and Innovation (PPSTI) gave a presentation on their national efforts on earth and land observations, as well as outlining their proposal for a Pathfinder project to review existing initiatives and review opportunities for aligning earth and ocean observations in the region. The representative invited all delegates to engage in the Pathfinder, which is going through PPSTI and to attend a workshop to be held in Australia in November of 2015. The Secretariat highlighted Australia's efforts to reach across fora with this initiative. Economies highlighted the potential benefits of the project, but noted the need to collaborate with other outside organizations and national efforts to align activities. One economy asked that given the proposed initiative's relevance to the OFWG, that Australia should consider sending a delegation to future OFWG meetings. There was also discussion on the use of "blue economy" and "green economy".

Session XI – Looking Ahead

A. Summary Report of the 5th OFWG Meeting

The draft summary report was reviewed and after discussion on minor changes, was finalized and endorsed.

B. Date and Venue for the 6th OFWG Meeting (OFWG Lead Shepherd)

Session XII - Closing Session

The meeting was closed by the Lead Shepherd, who congratulated delegates on their efforts to collaborate.

APPENDIX A – OFWG SCE FORA REPORT

Executive Summary

Summary

The 5th APEC Ocean and Fisheries Working Group (OFWG) met in Boracay, Philippines in May of 2015. Sixteen member economies and two observers (ABAC and Australia's representative to the Policy Partnership on Science, Technology and Innovation (PPSTI)) attended. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and the independent assessor, Mr. Graeme Drake, were present as guests. Discussions were organized around the five pillars of the OFWG Strategic Plan: Sustainable Development and Protection of the Marine Environment, Strengthening Food Security, Promoting Free and Open Trade and Investment, and Enhance Understanding of the Impacts of Climate Change, and OFWG Operations, as well as Blue Economy. These discussions included reports from economies on their economy's ocean and fisheries-relevant activities since OFWG4 in January, updates on past and upcoming OFWG-endorsed projects, presentations on ideas for concept notes in the second project session of 2015, and the draft action plan for the 2015 High Level Policy Dialogue on Food Security and Blue Economy. Australia's representative to the PPSTI presented on potential cooperation with the OFWG. PEMSEA also gave a presentation on potential future collaboration with the OFWG.

Recommendations

The group encouraged itself to work intersessionally via e-mail, particularly in efforts to better coordinate with the Policy Partnership on Food Security in preparation for the High Level Policy Dialogue on Food Security and Blue Economy.

Endorsed/Agreed During Boracay OFWG Meeting May 10-12, 2015:

1. The OFWG will consider the 2015 independent assessment recommendations and SCE comments in "OFWG Strategic Plan 2013-15 – Discussion Points" (2015/OFWG/SOM2/003) when it rewrites the Strategic Plan in 2015.
2. The OFWG endorsed the OFWG Food Security Action Plan as a living document and agreed to share the document with the Policy Partnership on Food Security (PPFS) for further collaboration.
3. The OFWG endorsed the Virtual Working Group on Marine Debris 2015 Work Plan.

Proposed Intersessional Actions:

1. OFWG member economies will provide input to the coastal ecosystem valuation survey.
2. The Lead Shepherd will provide an update to the OFWG on the status and progress of the Mainstreaming Oceans Initiative, including distribution of additional documents received at the end of SOM2.
3. OFWG member economies will engage in preparations for the High Level Policy Dialogue on Food Security and Blue Economy, including providing comments to the Philippines on the proposed action plans.
4. OFWG members with proposed concept notes, and those who develop concept notes in the meantime, will circulate the concept notes broadly prior to the deadline in order to secure feedback and potential co-sponsors.
5. Japan will circulate the proceedings of the Workshop of Climate Change Impact on Ocean and Fisheries Resources, for disseminating its outcome for the purpose of intersessional endorsement.