



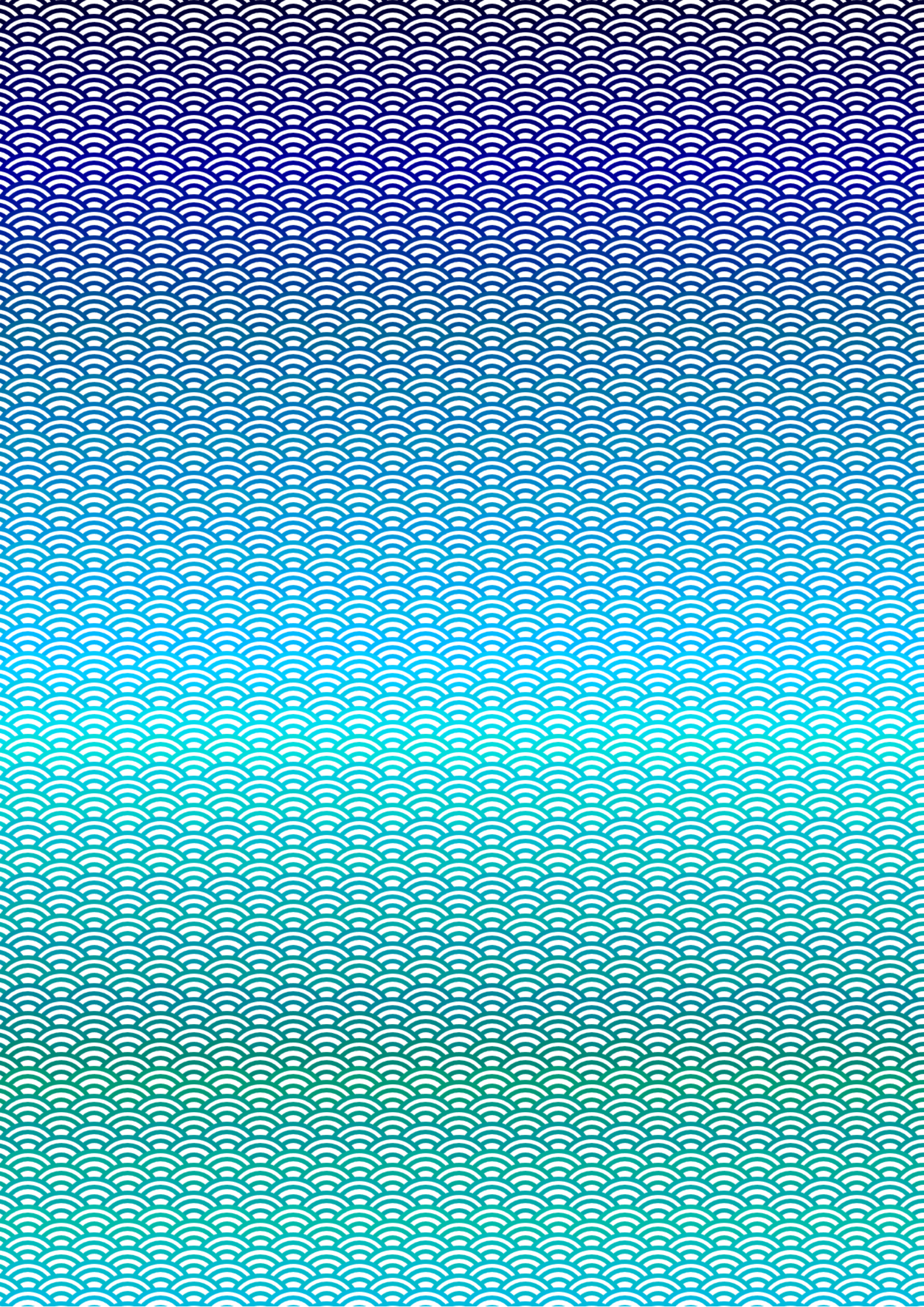
International Conference on Climate Change and Fragility in the Asia-Pacific Region 2019

— Climate Change and the Pacific Ocean —

Summary Report

Ministry of Foreign Affairs of Japan





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1. Introduction

Background

Climate change is considered as one of the most serious challenges that pose threats to global security and economic prosperity. The Ministry of Foreign Affairs of Japan (MOFA) organized a roundtable seminar on climate change and fragility implications on international security in January 2017 which was followed by several review meetings. One of the actions proposed by the seminar and follow-up meetings was: study and discuss climate change and fragility in Asia and Pacific region. Since then, MOFA holds International Conferences on Climate Change and Fragility every year.

In 2019, considering that ocean plays a key role in climate change issues, and the Intergovernmental Panel on Climate Change (IPCC) published the Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC) in September, MOFA decided to uphold ocean as the theme of this year's Conference (hereinafter referred to as 2019 Symposium).

Organization of the 2019 Symposium

The 2019 Symposium was scheduled on Saturday, 12th October at the Pacifico Yokohama Conference Center in Yokohama, Japan, but unfortunately cancelled due to the Typhoon *Hagibis*. The original timetable is provided at **Appendix 1** to this report.

Presentations which the Panellists had already prepared before the cancellation announcement were shared with the around 150 pre-registered participants as presentation videos which include both slides and voice of the Panellists. For the panel discussions, short online meetings were held during 02:00 – 03:00 UTC on Wednesday, 13th, 05:00 – 06:00 UTC on Friday, 15th and 10:30 – 11:30 UTC on Thursday, 21st November 2019. The presentation videos and the online discussion records are available at:

- [Session 1] https://www.youtube.com/watch?v=th1m_pFBA6Y
- [Session 2] <https://www.youtube.com/watch?v=xp3JIBzECns>
- [Session 3] <https://www.youtube.com/watch?v=gsKbeV29BQ>

The working language was English, including all presentations and documentation. The Overseas Environmental Cooperation Center, Japan (OECC) served as the secretariat of the 2019 Symposium.

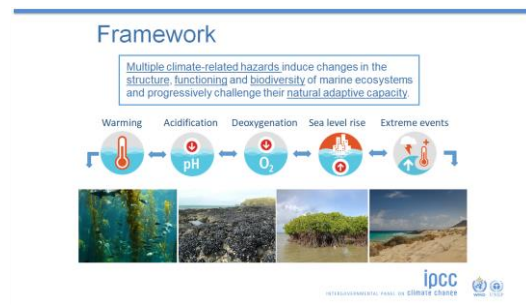
2. Presentations and discussions

Session 1: Pacific Ocean affected by Climate Change

Keynote Presentation by Professor Nathan BINDOFF

Professor Bindoff provided the keynote presentation regarding the Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC) which provides the latest scientific view on climate change impacts on ocean and cryosphere. He explained physical changes in the polar regions, coastal regions and the ocean and risks for marine ecosystems by those changes as well.

He stressed that timely, ambitious and coordinated actions are required to address widespread and enduring changes in the ocean and cryosphere. It is not too late, but we must start taking actions now. He also mentioned that one of the unique characteristics of SROCC is that the report covered not only scientific researches but also messages to policy makers.

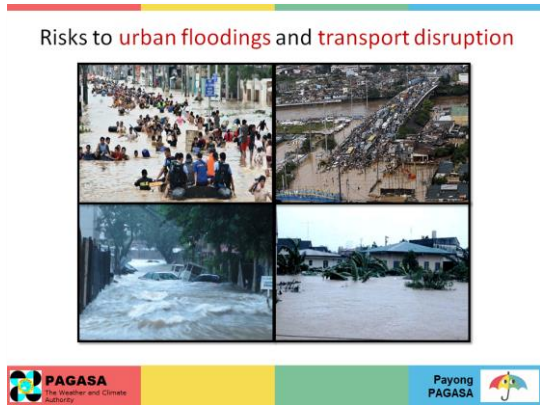
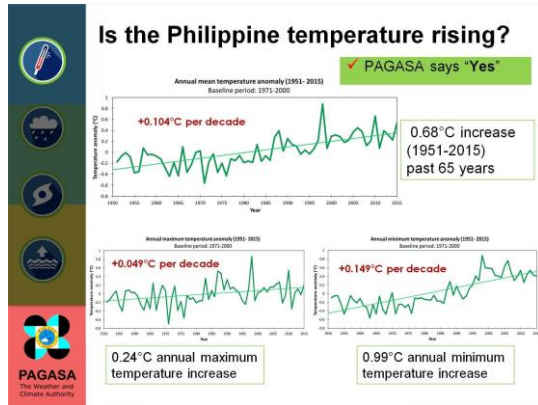


Presentation by Dr Landrico U. DALIDA, Jr.

Dr. Dalida explained climate trends in the Philippines. They are affected by around 20 tropical cyclones in a year, which makes the Philippines the third country in the world which is most exposed and at risk to natural hazards. His organization, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) has observed that the temperatures in the Philippines have already started increasing and predicts that the annual mean temperature can rise even more in near future. He also stated some observed climate changes in the Philippines such as the numbers of hot/warm days and nights, cold/cool days and nights, sea-level rise, changes in the rainfall pattern, and extreme metrological event frequency.

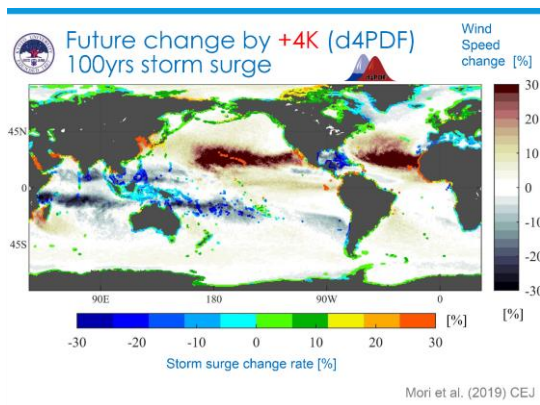
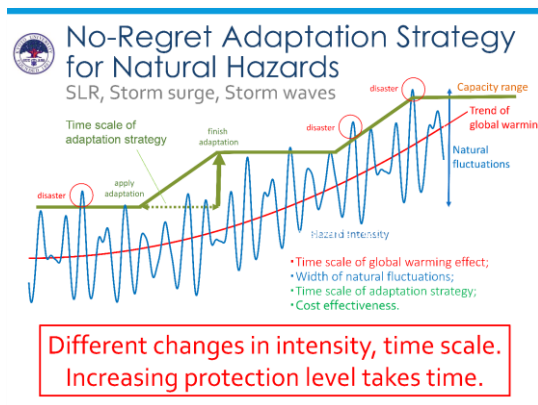
He said that those extreme events had caused landslides, urban flooding and prolonged dry season in different areas of the Philippines. He also showed us climate model simulations of tropical cyclones and predicted the increase in intensity of tropical

cyclones. He also introduced the action plans of the Philippines government, such as flood adapted buildings, evacuation drills in case of extreme events, and public education and awareness program.



Presentation by Professor MORI Nobuhito

Professor Mori said that the sea level rise due to the climate change may increase the risk of natural disaster. The impact of coastal disasters would depend on the height of the storm surge (the intensity of the low-pressure system like typhoons), ocean surface wave patterns, and adaptation stage at the time. He also mentioned that even though there are still not enough evidences, tropical cyclone intensity might increase due to the climate change and this may change/extend the coastal inundation area where severe storm surges are likely to occur.



He stated the importance of adaptation strategy. Administrative people need to be more involved with the scientists, and scientists need to provide more numbers for adaptation cost and related quantitative information. He said that it is also important to make

adaptation actions which take times to be effective. For example, mangroves take about 10 to 20 years to be able to play a role in coastal protection in the Pacific islands.

Presentation by Dr. HARADA Naomi

Dr. Harada talked about ocean acidification, which was one of the major problems in the oceans caused by the atmospheric CO₂ increase. She elaborated on the mechanism of the ocean acidification, the current acidification rate, future predictions, and its effect on the marine organisms, especially marine calcifiers. The polar regions mark the highest acidification rate, because of the low sea surface temperature where more CO₂ can be dissolved. Coastal area has faster acidification rate than that in open ocean. She also mentioned that even slight changes in pH can impact the ecosystem severely in the tropical area.

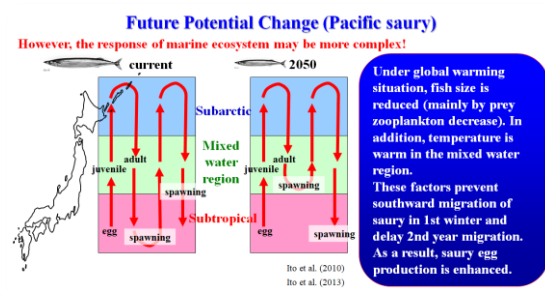
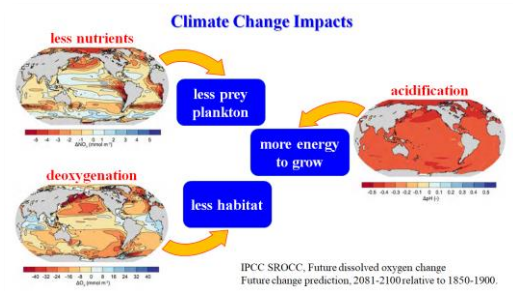
In her presentation, Dr. Harada used a sushi platter example to show us that human activities, ocean acidification, rise of sea temperature and overfishing, can cause serious damage on the fishery resources.



Presentation by Professor ITO Shin-ichi

Professor Ito explained impacts of climate change on fisheries, such as phenomena which had been caused ocean to be less nutritious, less oxygenated, and more acidic. As the result of such a change, the pacific saury, the fish which Japanese people traditionally eat as seasonal food in autumn, might have changed its migration pattern and became smaller in size. He said that the migration of pacific saury to its spawning area was slowed down because of its slow growth due to less plankton availability.

To maintain the marine environment and fishery resources, he elaborated that the balance between mitigation and adaptation would be the key, and any community level responses such as reducing plastic debris were important.



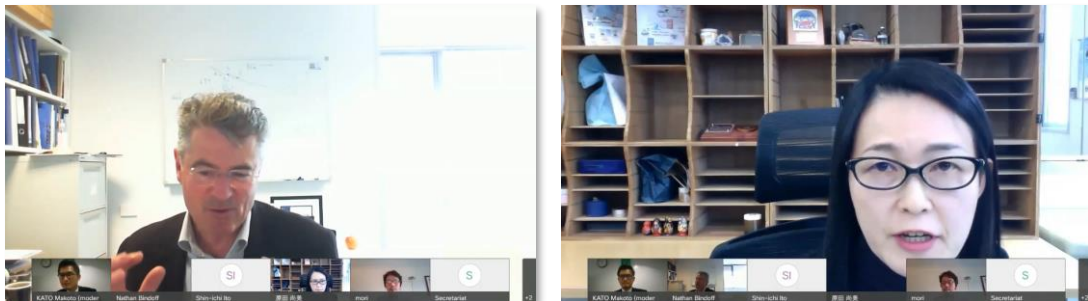
Panel discussion of the Session 1

[Moderator] Mr. KATO Makoto (OECC)

[Panellists] Prof. Nathan BINDOFF, Prof. MORI Nobuhito, Dr. HARADA Naomi and Prof. ITO Shin-ichi

Mr. Kato announced that he became the moderator of this panel discussion since the former moderator, Professor Mori, was currently on a business trip and his connection to the meeting system might not stable enough. He also mentioned that Mr Funaki, one of the original Panellists for the Symposium in Yokohama, could not join this alternative Session. Another Panellist, Dr Dalida could not attend the online discussion due to technical problems.

The Moderator noted that Professor Bindoff said that the SROCC focuses, for the first time, on the importance of education and climate literacy. Professor Bindoff said that among many options in responding to climate change, one of the struggles for having successful adaptation actions is caused by lack of education and climate literacy of stakeholders. He said that the report does not explain what to do with this issue but highlighted its importance.



Professor Bindoff emphasized the need for urgent actions. There are clear benefits of taking the low emission scenario, such as reducing negative impacts on fisheries. He

stressed that it is not too late to take actions for reducing greenhouse gas (GHG) emissions.

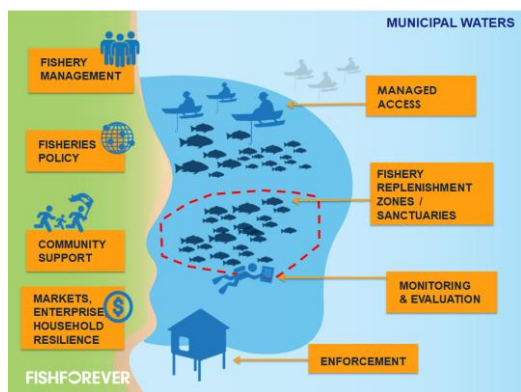
Dr. Harada pointed out the importance of actions by individuals to protect environment. She mentioned that still a lot of stakeholders think environment is not their maximum priority, even though a big achievement could be accomplished with small individual efforts. In her opinion, public awareness toward the sustainable feature must be improved.

Professor Ito said that scientists need to deliver more simple messages to general public, since there is a lot of people who think they cannot do anything against climate change. Professor Mori said that downscaling the projection may help people to understand the risk and think what to do. For example, while SROCC gives global/regional average information, people need numerical values just for them.

Session 2: Climate Actions in Sea Areas

Presentation by Ms. Alexandra GAMBOA

Ms. Gamboa belongs to an international conservation organization, Rare, which organises ecosystem-based adaptation initiatives in many countries including the Philippines. She said that recent unsustainable fishery practices cause steadily decreasing of fisher's profits despite the increase in overall revenue in the fishing sector. She introduced Rare's Fishforever project which is a multi-dimensional support of coastal communities for small scale fisheries associated with education. She highlighted importance of combining the rights to fish with the responsibility to protect own fishing ground for sustainable fisheries.



San Fernando Managed Access Area and Marine Sanctuary
Del Carmen, Siargao Island
<https://www.facebook.com/DelCarmenFishForeverPride>
 Campaign: 447616920719477

Design/ Boundary Specifications	Size of MAA+S (ha)	Municipal Waters (ha)
Total Area	703	44,815

Municipal Ordinance No. 025 series of 2017
 Date Approved: Feb. 6, 2017

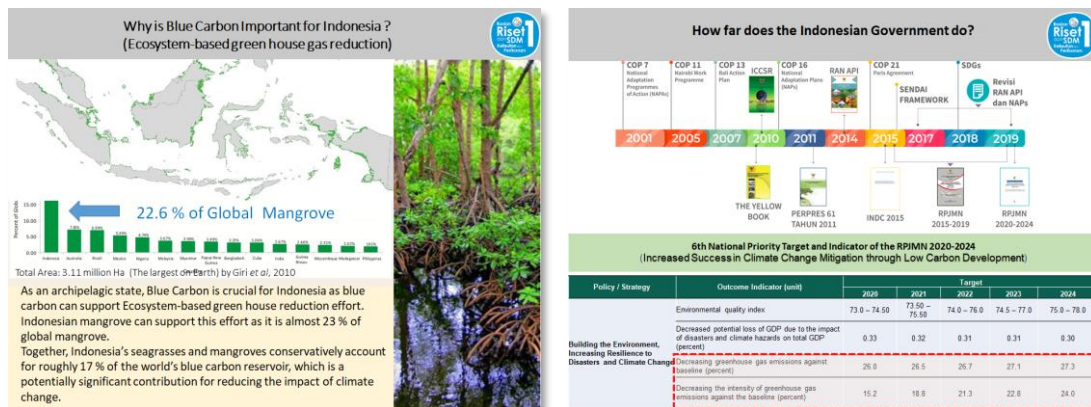
HIGHLIGHTS:

- LARVAL SOURCE FOR SOUTHERN LEYTE, SIARGAO ISLAND AND SURIGAO DEL NORTE
- COMMUNITY MANAGED MAA+S
- EMBRACING SUSTAINABLE LIVELIHOOD PROGRAMS
- BUILDING FINANCIAL RESILIENCE AMONG STAKEHOLDERS

Presentation by Mr. Triyono

Mr. Triyono provided a presentation on blue carbon researches and activities in Indonesia. Blue carbon is carbon captured by living organisms in coastal/ocean ecosystem and accumulated in biomass such as mangrove, seagrass and phytoplankton and in sediments. He said that blue carbon's capacity to store carbon is 3 – 5 times larger than that of terrestrial forests, and as Indonesian coastline is the habitat of about 23% of global mangroves, blue carbon strategy is very important for Indonesia. Although the Indonesian Government issued Presidential decrees to be committed to contribute to international GHG emissions reduction efforts, he stated that the contribution of marine and coastal sector is still overlooked.

He also showed us some efforts by the Indonesian Ministry of Marine Affairs and Fisheries, such as restoration, conservation activities and actions to raise public awareness to maintain the mangroves. He emphasised that the urgent need for mainstreaming marine and coastal sector into Indonesia's policy and strategy.



Presentation by Ms. OGAWA Masako

Ms. Ogawa introduced several projects of the Japan International Cooperation Agency (JICA) in Pacific island countries based on Framework for Resilient Development in the Pacific (FRDP), such as establishing the Pacific Climate Change Center (PCCC) in Apia, Samoa, enhancing meteorology services in the Pacific, and capacity building to contribute in development of national adaptation plans.

She stated that almost all the Pacific countries have strategies of integrated approach toward climate change adaptation and disaster risk reduction, and with the Pacific Resilience Partnership, they have enhanced climate resilience and disaster risk reduction. In her view, most of the Pacific countries are keen to reduce the risk of coastal disaster


and its impact, and to be able to take effective and efficient climate change adaptation actions in an integrated way is important.

jica Pacific Climate Change Center: a Centre of Excellence

VISION

- ◆ Highly valued by Pacific Island countries and territories, as it provides practical support, knowledge and training.
- ◆ Underpinned by strong partnerships with Pacific Governments, applied research institutions, donors and the private sector.
- ◆ Trusted source of user-friendly, scientifically robust information.
- ◆ Lead to better decision-making and innovative products which are increasing resilience in the Pacific.

FUNCTIONs
Knowledge brokerage, Applied research, Capacity building through training and learning, & Innovation



jica Climate resilience efforts supported by JICA (3)


Capacity building on climate resilience in the Pacific (Samoa, SPREP, JICA)

OBJECTIVES

- ✓ Training function of PCCC is operationalized by enhancing its capacities in the area of climate change adaptation, access to finance and mitigation in the Pacific.

Expected OUTPUTs and OUTCOMEs

- ✓ 12 trainings in 3 years
- ✓ Sustainability plan of training outcomes.
- ✓ Capacities on climate resilience in the Pacific region are enhanced.



Presentation by Mr. KITAGAWA Kazuyuki and Ms. TADA Juri

Mr. Kitagawa and Ms. Tada introduced some climate-change related projects of Goto city, such as power generation by using floating offshore wind turbine and tidal power. The Goto City's floating offshore wind turbine is already successfully commercialized, and they reported that new habitat for marine organisms is created in the surrounding area. They mentioned that Goto City would continue its effort as one of the pioneers of eco-friendly communities and by introducing renewable marine energy continuously for employment creation, the islands would be revitalized.


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Marine Renewable Energy utilizing the Gifts from the sea
Goto City, Nagasaki Prefecture

Sakiyama 2MW Floating Wind Turbine, the first grid-connected offshore wind turbine in Japan

Tidal power generation & Demonstration field for marine renewable energy



Ministry of Environment Project for the Promotion of Tidal Power Generation Technology

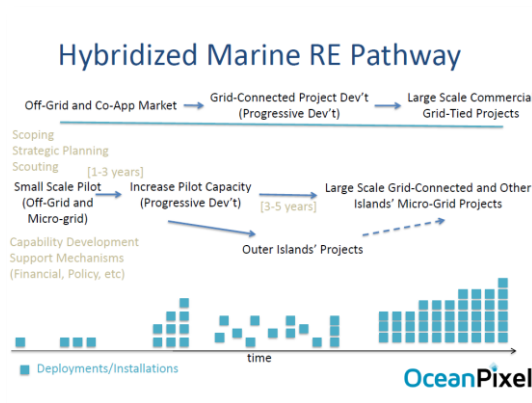
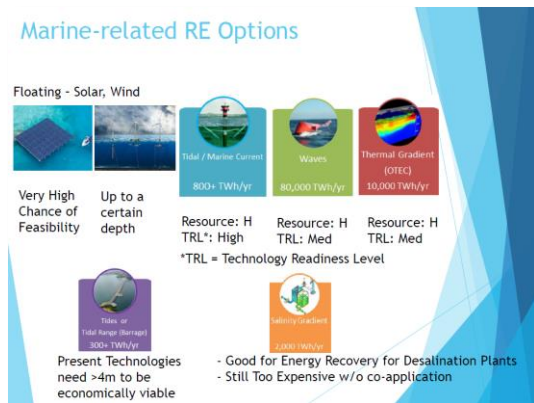
<Basic Specifications>
Type: landing system
Output: up to 1.5MW
Diameter: approx. 18m
Height: approx. 24m
Weight: approx. 1,590t

Presentation by Dr. Michael L.S. ABUNDO

Dr. Abundo introduced various marine renewable energy technologies and projects of the OceanPixel which is a Singapore start-up company spun off from the Energy Research Institute at Nanyang Technological University incorporated in September 2014.

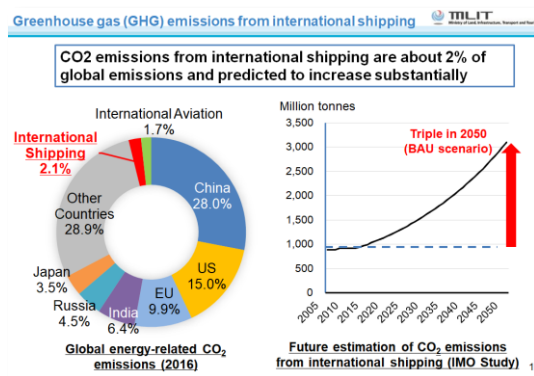
Although marine renewable energy is getting a hot topic, in his view, there is still room for support from the market to accelerate the progress. He mentioned that cost reduction is necessary as well.

He also showed roadmaps of hybridized marine renewable energy to build a sustainable future blue economy and some potential pilot projects and said that clean electricity from the ocean is just one aspect — there are potential jobs, industries and other benefits as well.



Presentation by Mr. IMAI Shin

Mr. Imai explained the complicated characteristics of international shipping and its difficulty to allocate the responsibility of GHG emissions to each country because of the multi-nationalistic nature of the shipping. For example, the flag, seafarers, operator and shipper of a ship may belong to different countries, and the ship even may be run between two other countries. In order to cope this problem, the International Maritime Organization (IMO) adopted the GHG strategy in April 2018, which serves under the principle of non-discrimination and unified actions regardless of the flags.



He also presented Japan's commitment and contribution in the international shipping sector, as a major shipbuilding country. The contribution includes technological, policy making and capacity building.

Panel discussion of the Session 2

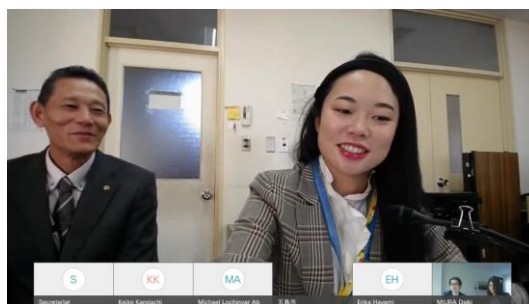
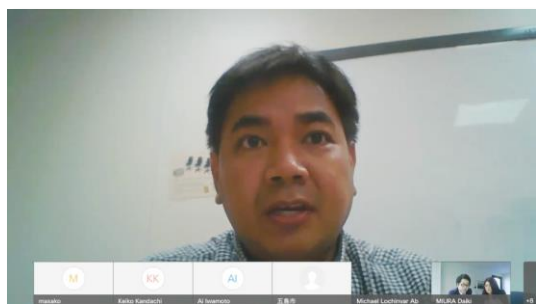
[Moderator] Ms. OGAWA Masako

[Panellists] Ms. Alexandra GAMBOA, Mr. KITAGAWA Kazuyuki, Ms. TADA Juri, Dr. Michael L.S. ABUNDO, Mr. MIURA Daiki and Ms. IKEDA Ashu

The Secretariat announced that Mr. Triyono and Mr. Imai were absent from this panel discussion since they were on business trips. Mr. Miura and Ms. Ikeda attended the discussion on behalf of Mr. Imai. Ms. Ogawa, the moderator, mentioned that one of the interesting points of this Session is all Panellists belong to different sector, i.e., Mr. Imai is from a government ministry, Mr. Kitagawa and Ms. Tada are from a city office, Ms. Ogawa is from a development assistance agency, Mr. Triyono is from a research institute, Mr. Abundo is from a private company, and Ms. Gamboa is from a non-governmental conservation organization.

Mr. Abundo said that there is sometimes confusion in coordination of regional efforts regarding who would do what in energy sector. Ms. Ogawa said that in the Pacific region, they have regular meetings between the stakeholders for coordination and often work together. Mr. Abundo said that South East Asia might be able to learn from the Pacific countries.

Mr. Miura said that one of the challenges in maritime transportation sector is most of the stakeholder regard fuel as something to purchase from out of the sector though it is a key factor to achieve decarbonization in the sector. He invited other Panellist to comment about roles of governments and current bottlenecks.



To answer Mr. Miura's question, Mr. Abundo said that, for innovative technologies helping climate mitigation and adaptation flourish, the area where the government

should make efforts may be funding, encouragement and collaboration. Ms. Gamboa said that one of the challenges Rare has faced is “institutional memories” — local heads keep changing every three years. Even though the organization invested in capacity building of the local government, they needed to restart the entire process as every time the head changed, and the progress was slowed down. One of the goals of the organisation is to make their projects to be incorporated in government program. Ms. Tada said that there is sometimes conflict between economic growth and protecting environment in governmental decision and those were typically not aligned with efforts to contribute to climate resilience.

They also talked about designation of areas for fishery and renewable energy.

Session 3: International Cooperation to support Climate Actions

Presentation by Dr. Ania GROBICKI

Dr. Grobicki introduced her organization, the Green Climate Fund (GCF), which supports climate change mitigation and adaptation actions of developing countries under the United Nations Framework Convention on Climate Change (UNFCCC). There are 44 approved GCF projects in the Asia-Pacific region which worth of \$1.6 billion GCF funding out of \$5.2 billion in the world. She showed us some examples such as the climate information service in Vanuatu and integrated flood management in Samoa.

She highlighted the importance of climate rationality and additionality of the projects which should target one of the eight results areas, i.e., energy, transport, buildings/cities/industries, ecosystems, livelihoods of people and communities, health/food/water security, forest/land use and infrastructure.

She also mentioned that JICA is one of the two accredited entities from Japan.



Presentation by Mr. MACHIBA Tomoo

Mr. Machiba explained about his organization, UN Climate Technology Centre & Network (CTCN), which is the operational arm of the UNFCCC Technology Mechanism established under COP mandate and hosted by the United Nations Environment Programme (UNEP) and the United Nations Industrial Development Organization (UNIDO) since 2013. CTCN has three main services: technical assistance; knowledge sharing; and collaboration and networking. Their support is a demand driven mechanism, in which countries requested their climate technology assistance by contacting their national designated entities.

CTCN has received 270 requests from 93 countries. He showed us some examples such as technology needs assessment in the Cook Islands, flood modelling in Jakarta and coastal modelling in multi-country in the Pacific region (Kiribati, Marshall Islands, Palau and Solomon Islands).

CTCN: UNFCCC Technology Mechanism

UN Climate Technology Centre and Network (CTCN) is the operational arm of the UNFCCC Technology Mechanism.

Our mandate is to support the development, transfer, deployment and dissemination of climate technologies that can deliver mitigation or adaptation outcomes.

The diagram shows the Technology Mechanism (TEC) and Financial Mechanism (GF) supported by UNFCCC, UNEP, and UNIDO. The Financial Mechanism includes Green Climate Fund and Adaptation Fund, leading to Multilateral Banks, etc.

CTCN Technical Assistance: How it works

- Interested parties contact their National Designated Entity to request climate technology assistance.
- NDE confirms the alignment of the request with its national climate priorities and passes it to CTCN.
- CTCN collaborates with NDE and applicants to develop a tailored technology transfer plan.
- CTCN implements the technology solution with a selected Consortium or Network member.

(t = 12-18 months from request to completion)

Presentation by Mr. Russell F. SMITH III and Ms. Alexis VALAURI-ORTON

The Ocean Foundation's mission is to support, strengthen, and promote those organizations dedicated to reversing the trend of destruction of ocean environments around the world. Mr. Smith talked about climate impacts on seafood and marine species and some activities of the foundation such as development of marine protected area and mangrove restoration.

The mission of The Ocean Foundation is to support, strengthen, and promote those organizations dedicated to reversing the trend of ocean environments around the world.

As the only community foundation for the ocean, the organization works to advance innovative, customized philanthropic solutions for individual, corporate and government donors so they can focus on their chosen passion for the coasts and ocean. Nobody can do anything alone in the ocean, which is why we operate as a community foundation. We work to recognize the diverse dreams and capabilities of more talented and motivated people who are working on ocean conservation issues around the globe.

The Ocean Foundation focuses on three main objectives: to serve donors, generate new ideas, and nurture on-the-ground implementers. We do this through facilitation of programs, fiscal sponsorship, grantmaking, research, advised funds and capacity building for marine conservation.

Training and Technology Transfer: Building "GOA-ON in a Box"

The right slide contains four photos: 1) A person in a blue shirt working with equipment. 2) A person in a blue shirt working with equipment. 3) A person in a blue shirt working with equipment. 4) A person in a blue shirt working with equipment.

Ms. Valauri-Orton explained their International Ocean Acidification Initiative which builds the capacity of scientists, policymakers, and communities to monitor, understand, and respond to ocean acidification both locally and collaboratively on a global scale. They use practical tools called “GOA-ON in a Box” and focuses in coastal region where no monitoring has been previously conducted.

Presentation by Mr. MORITA Takahiro

Mr. Morita explained JICA's guiding principles on SDGs, which focuses on human security and quality growth in achieving 10 goals of the SDGs by making use of Japan's experience in socio-economic development and international development cooperation. He also highlighted the JICA's strategy for nature conservation.

He showed us some examples of JICA's projects in the Asia-Pacific region such as blue carbon project in Indonesia and the Philippines, sustainable management of coral reef and island ecosystems in Palau.

JICA's guiding principles on SDGs

- JICA will realize “human security” and “quality growth” and will proactively contribute to achieving the (SDGs) goals with leadership.
- JICA will play a pivotal role in achieving 10 goals of the SDGs (making use of Japan's experience in socio-economic development and Int'l Dev. Cooperation)
- JICA will work to secure impact of cooperation on the SDGs, introducing innovations and collaborating with local and international partners

https://www.jica.go.jp/about/sdgs/ku57p400001qfok2-att/JICA_torikumi_e.pdf

“Comprehensive Assessment and Conservation of Blue Carbon Ecosystem and Their Services in the Coral Triangle” (BlueCARES)

BlueCARES Candidate Project Sites
 Collect basic data on carbon dynamics, associated Ecosystem services and mapping, in order to develop Blue Carbon Strategy

Core and Network System

Regional, National and Local Network for:
 - Non-on-site monitoring
 - Implementation of Blue Carbon Strategy
 - Capacity building

Climate Change Mitigation
 Regional: MMAF (Indonesia), UPD (Philippines)
 National: Local Communities (Indonesia, Philippines, etc.)
 Local: Supported by Local Governments, NGOs, Private Sector, Institutes, Universities

Blue Carbon Ecosystem Conservation
 Partnership with Private Sectors

Japanese Companies conducting relevant activities in the countries	Company	Activity	C
MCDN Environmental Foundation	Mangrove rehabilitation in Jakarta (2015 - 2022) (5,000 trees)		I
Tsuyuda Motor Cooperation	Living Asian Forest Project 2018- collaborating with WWF		I
Nishihara Fresh Inc.	Mangrove re-vegetation, improvement of shrimp aquaculture		I
Tokuyama Meiji Nichido	Mangrove plantation		LP

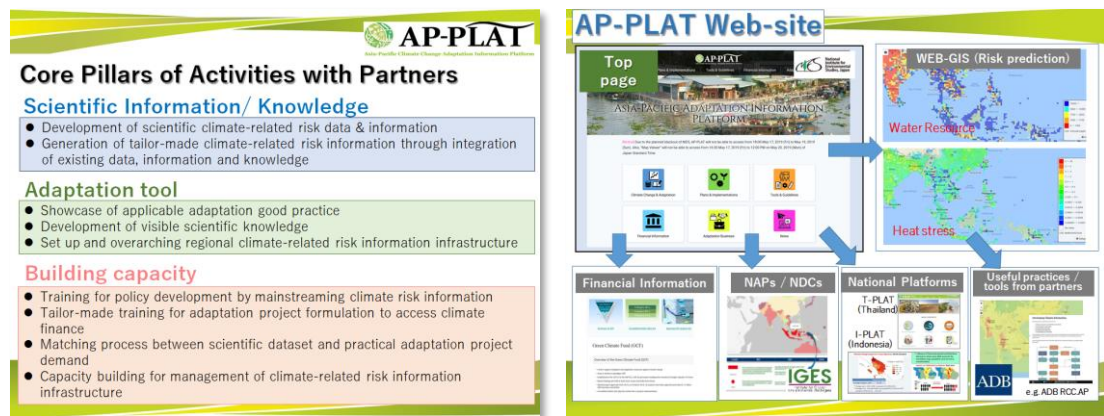
Presentation by Mr. MIZUNO Osamu

Mr. Mizuno explained the concept of the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT) which was established on 16th June 2019 during the G20 Ministerial Meeting in Karuizawa. He stated that mission of the AP-PLAT is creating an enabling environment for climate-risk informed decision making and practical adaptation action through synchronizing and harnessing best available efforts among partner countries and organizations with activities such as sharing of scientific information and knowledge, showcasing of good practice, and capacity building.

He also presented the concept of the Capacity Development Program, which is a voluntary network activity of institutions in the Asia-Pacific to build on existing capacity

building activities and provide opportunities for collaboration, by utilizing social media, platform, and new funding mechanism.

He emphasized that AP-PLAT is ready to contribute in reducing the fragility in Asia-Pacific region and was looking forward to strengthening partnership under this framework.



Panel discussion of the Session 1

[Moderator] Mr. NAKAJIMA Riki (OECC)

[Panellists] Mr. MACHIBA Tomoo, Mr. Russell F. SMITH III, Ms. Alexis VALAURI-ORTON and Mr. MORITA Takahiro

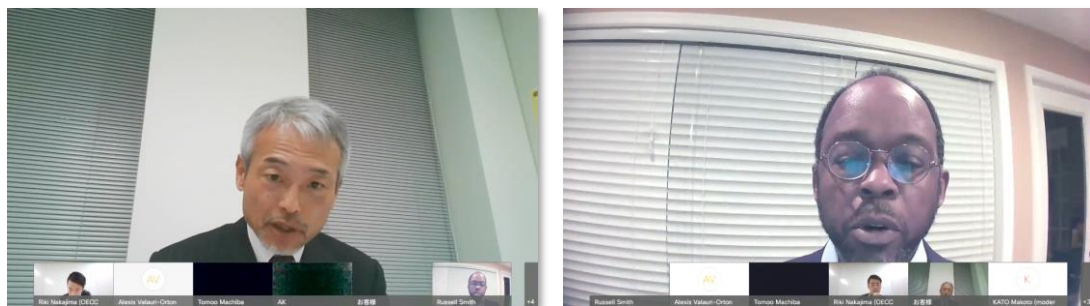
Mr. Nakajima announced that he became the moderator of this panel discussion since the former moderator, Dr. Grobicki, was currently on a business trip and could not attend this online discussion. Another Panellist, Mr. Mizuno could not attend the online discussion as well. He also mentioned that Ms. Aravena, one of the original Panellists for the Symposium in Yokohama, could not join this alternative Session. From the Ocean Foundation, Ms. Valauri-Orton joined the Session with the original Panellist, Mr. Smith.

To answer the moderator's question, Mr. Smith said that one of the advantages of being community foundation is to have the ability for local engagement throughout development and implement of a project and for building long term capacity. Ms. Valauri-Orton explained there are difficulties in planning projects in terms of sustainability hence their project terms are 2 – 3 years. In order to overcome the difficulty, they try to create platforms, organize mentor/mentee relationships, and design easy to maintain, repair and low-priced as possible. She also mentioned that regional approach is necessary, and they plan to establish a centre of excellence with University of South Pacific for regional training hub for ocean acidification monitoring.

Mr. Morita introduced that JICA, which is now being an accredited entity of GCF, is planning to collaborate in their priority area of disaster risk reduction and conserve ecosystem and biodiversity. He stated that not only integrating data to each local context, but also regional approach is important in the Pacific because providing technological supports to small countries individually is inefficient. He said that by using PCCC, a Center of Excellence, to share common knowledge and experience, the data collection will be more effective and efficient.

Mr. Machiba mentioned that in order to provide some starting points for projects in Pacific countries, “technology needs assessments” have been conducted, trying to map needs areas for change in different climate technology. However, since CTCN projects must be initiated by countries, the lack of capacity in small countries often resulted in no project.

To answer the moderator's question on collaboration possibility, Mr. Morita said that it is not so easy because each organization has different responsibility in terms of accountability to the stakeholders. For example, JICA's stakeholders are mainly Japanese taxpayers. JICA is the agency for Official Development Assistance (ODA) from Japan and has its own regulations. However, he concluded his words that he believes there is still a lot of opportunities for cooperation and they may overcome the difference. Mr. Machiba appreciated the comments on possible collaboration from JICA and the Ocean Foundation, with potential of connecting the local needs to the national designated entities of the country, and mentioned the importance of this kind of face to face inter-organizational meetings for further talk toward the collaboration.



Appendix 1: Original Timetable

International Conference on Climate Change and Fragility in the Asia-Pacific Region 2019

— Climate Change and the Pacific Ocean —

Saturday, 12th October 2019, at the Pacifico Yokohama Conference Center

09:30 – 09:40 Opening Remarks

Ministry of Foreign Affairs of Japan

09:40 – 11:30 Session 1: Pacific Ocean affected by Climate Change

Keynote Presentation

Prof. Nathan BINDOFF, Professor of Physical Oceanography, Oceans and Cryosphere Program, Institute for Marine & Antarctic Studies, University of Tasmania

Presentations

Dr. Landrico U. DALIDA, Jr., Deputy Administrator for Operations & Services, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

Mr. Misaeli FUNAKI, Director, Fiji Meteorological Service

Prof. MORI Nobuhito, Disaster Prevention Research Institute, Kyoto University

Dr. HARADA Naomi, Director, Earth Surface System Research Center, Research Institute for Global Change, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Prof. ITO Shin-ichi, Atmosphere and Ocean Research Institute, the University of Tokyo

Discussion

[Moderator] Prof. MORI Nobuhito

[Panellists] Prof. Nathan BINDOFF, Dr. Landrico U. DALIDA, Jr., Mr. Misaeli FUNAKI, Dr. HARADA Naomi and Prof. ITO Shin-ichi

11:30 – 13:00 Lunch Break

13:00 – 14:20 Session 2: Climate Actions in Sea Areas

Presentations

Ms. Alexandra GAMBOA, Manager of Government Initiatives, Rare

Mr. Triyono, Head, Research of Mitigation, Adaptation and Conservation Division, Center for Marine Research, Marine and Fisheries Research and Human Resources Development Agency of Indonesia

Ms. OGAWA Masako, JICA Expert (Chief Advisor), the Project for Capacity Building on Climate Resilience in the Pacific

Mr. KITAGAWA Kazuyuki, Section Chief, Renewable Energy Promotion Section, Goto City Hall and **Ms. TADA Juri**, Town Creating Section, Goto City Hall

Dr. Michael L.S. ABUNDO, Managing Director, OceanPixel Pte Ltd

Mr. IMAI Shin, Director, International Environment Office, Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan

Discussion

[Moderator] Ms. OGAWA Masako

[Panellists] Ms. Alexandra GAMBOA, Mr. Triyono, Mr. KITAGAWA Kazuyuki, Ms. TADA Juri, Dr. Michael L.S. ABUNDO and Mr. IMAI Shin

14:20 – 14:50 Break

14:50 – 16:20 Session 3: International Cooperation to support Climate Actions

Presentations

Dr. Ania GROBICKI, Deputy Director for Adaptation, Division of Mitigation and Adaptation, Green Climate Fund (GCF)

Mr. MACHIBA Tomoo, Deputy Director, Climate Technology Centre and Network (CTCN)

Mr. Russell F. SMITH III, Director, the Ocean Foundation

Mr. MORITA Takahiro, Senior Deputy Director General / Group Director for Forestry and Nature Conservation, Global Environment Department, Japan International Cooperation Agency (JICA)

Mr. MIZUNO Osamu, Principal Fellow, Institute for Global Environment Strategies (IGES)

Ms. Claudia ARAVENA, Environmental Affairs, Embassy of the Republic of Chile in Japan

Discussion

[Moderator] Dr. Ania GROBICKI

[Panellists] Mr. MACHIBA Tomoo, Mr. Russell F. SMITH III, Mr. MORITA Takahiro, Mr. MIZUNO Osamu and Ms. Claudia ARAVENA

16:20 – 16:30 Wrap-up

Ministry of Foreign Affairs of Japan

Appendix 2: Final List of the Panellists**Session 1**

Nathan BINDOFF, Professor of Physical Oceanography, Oceans and Cryosphere Program, Institute for Marine & Antarctic Studies, University of Tasmania

Nathan BINDOFF is physical oceanographer, specializing in ocean climate and the earth's climate system. He was the coordinating lead author for the ocean in the IPCC Fourth, Fifth Assessment Reports and Special Reports on Oceans (SROCC). Nathan and colleagues found the first evidence for changes in the oceans and changes in the Earth's hydrological cycle from ocean salinity. His most recent work is on the decline in oxygen content of the oceans and dynamics of the Southern Ocean. He has published more than 134 peer reviewed papers and more than 50 reports.



Landrico U. DALIDA, Jr., Deputy Administrator for Operations & Services, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

Landrico U. DALIDA Jr. currently serves as the Deputy Administrator for Operation and Services (DOST-PAGASA). As a Deputy Administrator, he formulates plans and programs on the Hydro-Meteorological Observation and Weather and Flood Forecasting operations and services of PAGASA. He began his career in 1983 as a Meteorologist. He rose from the ranks and was promoted as Supervising Meteorologist in 2000. From 2010 to 2013, he serves as the Chief of Southern Luzon PAGASA- Regional Services Division. In 2014, he became the PAGASA Deputy Administrator for Operation and Services. To highlight his career, he has written numerous technical papers in the field of disaster management, meteorology, and climate modeling. Currently, he supervises, oversees and initiates programs and projects related to the improvement of PAGASA operations and services. He finished both his master's and the Ph.D. degree in Meteorology at the University of the Philippines in 1994 and 2010, respectively.



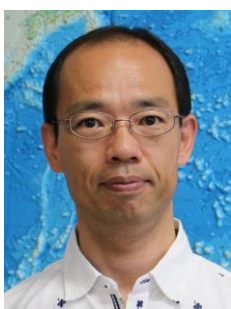
MORI Nobuhito, *Disaster Prevention Research Institute, Kyoto University*

MORI Nobuhito is a Professor in Disaster Prevention Research Institute (DPRI) of Kyoto University. He has extensive experience in climate change impacts on coastal hazards, risk assessment of coastal disasters. He leads all nationwide research projects on climate change impact on extreme hazards covering coastal hazards funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan since 2012. He has published 94 refereed papers in international journals and books. He received Ph.D. in Civil Engineering from Gifu University.



HARADA Naomi, *Director, Earth Surface System Research Center, Research Institute for Global Change, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)*

HARADA Naomi is the director of the Earth Surface System Research Center, Japan Agency for Marine-Earth Science and Technology (JAMSTEC). Her most recent work is to understand how environmental change affects the biological and biogeochemical aspects and main target area is western North Pacific and the Arctic Ocean. She has served co-chair of the Scientific Steering Committee of the Ecosystem Studies of Sub-Arctic and Arctic Seas (ESSAS), Asia-Oceania Director of Geochemical Society, and the member of Science Council of Japan.



ITO Shin-ichi, *Atmosphere and Ocean Research Institute, the University of Tokyo*

ITO Shin-ichi is a Professor at the University of Tokyo. His research topics range from physical to fisheries oceanography and his approaches include field observation, laboratory experiments and numerical modeling. Shin-ichi is the Editor Asia of "Fisheries Oceanography" and an editor of "Progress in Oceanography". Shin-ichi co-chairs the joint PICES/ICES Section on Climate Change Effects on Marine Ecosystems (S-CCME) and he is also a lead author of IPCC WGII Sixth Assessment Report. He is the vice-president of the Oceanographic Society of Japan.

Session 2



Alexandra GAMBOA, *Manager of Government Initiatives, Rare*

Alexandra GAMBOA is the Manager of Government Initiatives for Rare's branch office in the Philippines. She works with the Strategy, Partnerships and Development team to engage national and sub-national government agencies and global institutions to create an enabling policy environment for the Philippines to promote and support community-led coastal and fisheries resource management.

She also continually identifies avenues for engagement with various government-led projects and seeks to build the profile of Rare as a thought leader in the Philippines to promote sustainable conservation behavior. From her previous role as the Deputy Chief of the Legal Services Division of the Climate Change Commission of the Philippines, she contributes her experience in government policy and her experience negotiating in the United Nations Framework Convention on Climate Change (UNFCCC) process.



Triyono, *Head, Research of Mitigation, Adaptation and Conservation Division, Center for Marine Research, Marine and Fisheries Research and Human Resources Development Agency of Indonesia*

Triyono is the Deputy Director for Mitigation, Adaptation, and Conservation of the Marine Research Center. He had a professional background as geomorphological researcher in the Agency for Marine and Fisheries Research, the MMAF of the Republic of Indonesia.

He engaged in coordinating number of research programs including marine resources management and climate change mitigation and adaptation. He also engages in some working group on marine conservation at national level.

He completed his study on littoral geography from Universite de Brest, France in 2008.



OGAWA Masako, *JICA Expert (Chief Advisor), the Project for Capacity Building on Climate Resilience in the Pacific*

OGAWA Masako is Chief Advisor for the Project on Capacity Building on Climate Resilience in the Pacific based in the SPREP/PCCC. This is her third overseas job after Senior Environmental Expert in the Global Environment Facility (GEF) in 2014 – 2017, and JICA Expert/Policy Advisor for the Ministry of Environment of the Republic

of Indonesia in 2008 – 2011. Before joining the PCCC, she was responsible for the international strategy on climate change in the Ministry of the Environment of Japan.



KITAGAWA Kazuyuki, Section Chief, Renewable Energy Promotion Section, Goto City Hall
and ***TADA Juri***, Town Creating Section, Goto City Hall

Goto City is located in the westernmost area of the Kyushu Island, about thousand kilometers from Tokyo. It's about 100 kilometers west of the port of Nagasaki. The city consists of 11 inhabited islands and 52 uninhabited islands, whose landscape is so beautiful that a major part of them is designated as the Saikai National Park. Our area has an oceanic climate, featuring a summer of relatively refreshing air and relatively warm winter.



Michael L.S. ABUNDO, Managing Director, OceanPixel Pte Ltd

Michael ABUNDO is a green techno-preneur who specializes in marine renewable energy sector. He has over 15 years of experience in various roles in the Innovation, R&D, and Demonstration ecosystems of the Asia-Pacific region working with academe (e.g., Nanyang Technological University), industry, and government (e.g., ASEAN Centre for Energy). He has contributed to the inclusion of MRE technologies at various scales — such as energy harvesting, off-grid, micro-grid, grid-tied, large scale) and for a spectrum of applications (e.g., electrification of vessels, ports, etc.) towards sustainable development.



IMAI Shin, Director, International Environment Office, Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan

IMAI Shin started his carrier in the Ministry of Transport (currently MLIT: Ministry of Land, Infrastructure, Transportation and Tourism) in 1996. He has engaged in the development of a wide variety of maritime policy regarding shipbuilding development policies as well as ship safety and marine environmental protection. He also has international experiences as Shipbuilding Economist at the OECD (2003 – 2005) and Alternate Permanent Representative of Japan to the IMO (2009 – 2013). In addition, as the lead

negotiator, he participated in many international conferences, including IMO, UNFCCC and OECD.

Session 3



Ania GROBICKI, *Deputy Director for Adaptation, Division of Mitigation and Adaptation, Green Climate Fund (GCF)*

Ania GROBICKI is the Deputy Director for Adaptation at the Green Climate Fund. She is a chemical engineer who worked for Shell South Africa, and subsequently completed a PhD in biochemical engineering at Imperial College London. She has worked for the last 10 years on water and climate issues, including water-related disasters, heading the Global Water Partnership for six years as the Executive Secretary, based in Sweden, and then as the Deputy Secretary General and Acting Secretary General of the Ramsar Convention on Wetlands, prior to joining GCF.



MACHIBA Tomoo, *Deputy Director, Climate Technology Centre and Network (CTCN)*

MACHIBA Tomoo leads the CTCN's efforts for actively engaging its donor countries, multilateral financial institutions, Consortium and Network members, the private sector and other stakeholder groups, as well as improving the monitoring, evaluation and reporting of CTCN projects to ensure their long-lasting impact for climate mitigation and adaptation. He has 20-year experiences of working with governments, industry and NGOs in advising on a range of climate change-related issues. Originally trained as journalist, Tomoo previously served for the United Arab Emirates Ministry of Climate Change and Environment, International Renewable Energy Agency (IRENA), OECD, UNEP Collaborating Centre on Sustainable Consumption and Production (CSCP), Global Reporting Initiative (GRI) and SustainAbility Ltd.



Russell F. SMITH III, Director, the Ocean Foundation

Russell SMITH is a board member of The Ocean Foundation. He is also the owner of Flen Consulting LLC, which provides consultant services on various oceans-related issues. Previously, Mr. Smith served as the deputy assistant secretary for International Fisheries at the U.S. National Oceanic and Atmospheric Administration. His responsibilities included overseeing international fisheries and trade-related work, and leading U.S. efforts to combat IUU fishing and seafood fraud. He also worked for the Office of the U.S. Trade Representative and as a lawyer at the U.S. Department of Justice and in private practice.



MORITA Takahiro, Senior Deputy Director General / Group Director for Forestry and Nature Conservation, Global Environment Department, Japan International Cooperation Agency (JICA)

MORITA Takahiro is Senior Deputy Director General, Group Director for Forestry and Nature Conservation, Global Environmental Department, Japan International Cooperation Agency (JICA). After graduation from the Tokyo University of Agriculture and Technology, he has been working at JICA more than 25 years. Since 2017, Morita has been responsible for JICA's technical cooperation in the field of nature conservation in Asia, Pacific, Africa and Central/South America.



MIZUNO Osamu, Principal Fellow, Institute for Global Environment Strategies (IGES)

MIZUNO Osamu is a Principal Fellow at the Institute for Global Environmental Strategies (IGES) since 2018. Before joining IGES, he worked at AIT, UN DESA, MOEJ, GEF, REC among others. He obtained a master's degree in Environmental Engineering from Kyoto University as well as a master's degree in Public Administration from the John F. Kennedy School of Government, Harvard University. His professional career mostly involved promoting environmental policies and projects through international cooperation, in particular on climate change mitigation and adaptation.

