IORA BLUE CARBON HUB INAUGURAL THINK TANK MEETING BLUE CARBON FINANCE

25 – 26 FEBRUARY 2020

MAURITIUS

FINAL REPORT

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1.1 BACKGROUND

Delegates from Member States, namely, Commonwealth of Australia, People's Republic of Bangladesh, Islamic Republic of Iran, Republic of Indonesia, Republic of Madagascar, Malaysia, Republic of Maldives, Republic of Mauritius, Republic of Seychelles, Republic of South Africa, Democratic Socialist Republic of Sri Lanka, Kingdom of Thailand, United Arab Emirates and Republic of Yemen, as well as Dialogue Partners, namely Germany and the United Kingdom, gathered at the Preskil Island Resort, on 25-26 February 2020 to participate in the IORA Blue Carbon Hub Inaugural think tank meeting on Blue carbon finance, which was jointly organised by the IORA Blue carbon Hub and the IORA Secretariat. The list of participants is annexed (**Annexure A**)

During the Meeting, experts presented on innovations and successes in blue carbon finance and the barriers to effective and sustainable blue carbon finance. Delegates from Member States and Dialogue Partners engaged with experts in discussions on opportunities to support the conservation and restoration of blue carbon ecosystems through finance mechanisms and policy frameworks. The meeting resulted in concrete recommendations to further advance development in this area, including: promote and coordinate regional research in blue carbon; the need for capacity building programmes to enhance technical expertise in the field; mapping status and condition of blue carbon finance and identify common interests of Member States; and develop common methodologies to understand carbon stock potential in the IORA region. Participants also identified challenges and opportunities for blue carbon finance in the region. A copy of the Agenda is annexed (**Annexure B**).

1.2 INAUGURATION

Dr Mat Vanderklift welcomed the participants and provided a brief on the Blue carbon Hub. He made reference the early career professionals, whereby participants from IORA Member States will come to Australia to carry out some research for a period of 6 weeks.

1.2.1 OPENING STATEMENT: HE DR NOMVUYO N NOKWE, SECRETARY GENERAL, INDIAN

Ambassador Dr Nokwe conveyed her deep appreciation and extended a warm welcome to all participants of the IORA Indian Ocean Blue Carbon Hub inaugural think-tank on Blue Carbon Finance. She hoped that this meeting will explore ways of deepening our collaboration to enhance knowledge on Blue carbon and explore ways in financing its development. She provided information on the establishment and the aim of the Blue carbon Hub, which was announced by the Australia's Foreign Minister at the Third IORA Blue Economy Ministerial Conference in September 2019 in Dhaka, Bangladesh. She further highlighted the importance of Blue carbon ecosystems for coastal communities and fisheries, and to sequester and store carbon. She added that these Blue carbon ecosystems play an important role in contributing to food security, supporting economic self-sufficiency and protection of coastal communities and livelihoods, for example, through buffering the effects of storms and tsunamis. However, despite of their crucial role, these ecosystems are among the most threatened ecosystems on Earth and are highly at risk

due to conversions, industry, aquaculture and infrastructure development, which can in turn lead to the release of huge amounts of coastal blue carbon in the atmosphere contributing to the effect of global warming and climate change. She stated that financing mechanisms, emission markets and appropriate policy framework can be a solution to this problem and can help in reversing this loss, but these are still in an early phase of development. Member States were encouraged to explore existing or new funding mechanisms that would make carbon in coastal habitats eligible for payments, as well as make blue carbon ecosystems a good source of income, especially for developing countries and Small Island Developing States. She emphasised on the need of Member States to focus on the restoration and protection of these Blue carbon ecosystems because of the high amounts of carbon they store and their high rates of carbon sequestration, as well as because of their high potential to contribute to emission reduction commitments, which might provide a potential avenue to finance those activities. She pointed out IORA's initiative in the field of Blue carbon, including the establishment of the IORA Indian Ocean Blue Carbon Hub; the first Indian Ocean Blue Carbon Symposium in March 2018 in Perth, Australia; the Workshop on "Improving Knowledge For Research On Blue Carbon In The Western Indian Ocean" hosted by Madagascar in 2019; and this current meeting. She mentioned that Blue carbon finance is a topic that is being addressed for the first time in IORA and that Blue carbon is also included in the Work Plan of the Working Group on the Blue Economy. She is confident that the IORA Blue carbon Hub will enhance Member States' capacities, knowledge and technical knowhow on this topic. She encouraged Member States to explore financial mechanisms, appropriate policy framework that are needed to facilitate relevant actions, as well as to explore opportunities for investment in blue carbon. She hoped that this two-day meeting will result in concrete recommendations as the way forward to further enhance Member States' capacities and experience on Blue carbon and its financial mechanisms, and emphasised the need for action-oriented outcomes for the future development of the Indian Ocean region. On her concluding note, she expressed her sincere appreciation to the participants for attending this meeting and wished everybody a fruitful deliberation. The full remarks of Dr Nokwe is annexed as **Annexure C**.

1.2.2 WELCOMING STATEMENT: HE JENNY DEE, HIGH COMMISSIONER TO MAURITIUS

HE Jenny Dee expressed her appreciation for attending the first event of the IORA Blue Carbon Hub Inaugural think tank on Blue Carbon finance. She made reference to the Sustainable Blue Economy Conference, held in Kenya in November 2018, whereby the question on whether humans can use the ocean as a tool for lifting people out of poverty, all the while protecting its valuable ecosystems was raised at the first-ever and which resulted in the creation of the High Level Panel for a sustainable Ocean Economy. She reiterated Australia's active role in promoting the Blue Economy in recent years and, more recently, for the protection of Blue Carbon in the Indian Ocean. She mentioned that these issues are key concerns to the Australian Government who see the Blue Economy as one of the key priorities for development, especially for Island nations. She further mentioned that in order to ensure a sustainable Blue Economy, Australia developed the National Marine Science Committee (NMSC), an advisory body to focus on promoting high quality marine science and growth of Australia's blue economy. She stated that since 2013, when Australia announced the Blue Economy as a cross-cutting priority area of IORA, around $4 million has been spent on blue economy-related initiatives within IORA and more recently at the Third IORA Blue

Economy ministerial conference in Dhaka in September, Minister Payne announced the establishment of the IORA-CSIRO Blue Carbon Hub in Perth, located within the Indian Ocean Marine Research Centre, with an investment of $600,000 over 3 years.

The Hub is a follow-up of the hosting of the IORA Blue Carbon Symposium in Perth in March 2018 and the IORA Blue Carbon workshop in Tulear in May 2019. Australia has been a leader on blue carbon internationally, founding the International Partnership for Blue Carbon (IPBC) at COP21 in Paris. Protecting the marine environment and contributing to climate change mitigation has been a key focus of Australia's efforts. Australia sees that efforts in blue carbon in the Indian Ocean can be taken even further, by harnessing public and private finance, and ensuring that the Indian Ocean region and IORA assume a lead role globally in achieving this. She hoped that the think tank meeting will identify a definite path forward for how IORA Member States can access public and private finance, and the challenges therein, and how Australia can help achieve this. She pointed out the activities being undertaken by the Australian Government, including: the Innovation for the Blue Economy Workshop in August 2015 through the 'innovationXchange'; and the Blue Economy Aquaculture Challenge. She provided information about the Reef 2050 Plan, Australia's 2017 Foreign Policy White Paper, the Course on "Ocean management- sustainable fisheries governance" by the Australian National Centre for Ocean Resources and Security (ANCORS) of the University of Wollongong; The International Partnership for Blue Carbon, launched by Australia in December 2015 at COP21. One of the Organisations that Australia works with is the Commonwealth through the Commonwealth Climate Change Finance Access Hub, who play an important role in continuing to advocate for climate vulnerable states and help them untangle the red tape around climate financing, and in helping them make successful applications to the international funds that address climate change. She concluded her remarks by congratulating the Hub on its Blue Carbon Inaugural thing tank on Blue Carbon Finance and wished everybody a very successful Workshop. The full statement of HE Jenny Dee is annexed as **Annexure D**.

1.2.3 WELCOMING STATEMENT: HON MR SUDHEER MAUDHOO, MINISTER OF BLUE ECONOMY, MARINE RESOURCES, FISHERIES AND SHIPPING

Hon Mr Sudheer Maudhoo, Minister of Blue Economy, Marine Resources, Fisheries and Shipping welcomed all the delegates and expressed his appreciation to CSIRO and the IORA Secretariat to host this event, which he sees as a laudable initiative given that worldwide, it has been recognized that blue carbon has a crucial role in reducing impacts of global climate change. He reiterated the commitment of the Government of Mauritius to make the Blue economy one of its economic pillars, with blue carbon forming an important component. He highlighted the importance of the Blue carbon ecosystems in coastal protection, provision of habitat for commercially important fisheries and food security for many coastal communities. He further mentioned that these ecosystems sequester and store significant amounts of coastal blue carbon from the atmosphere and ocean and hence are now recognized for their role in mitigating climate changes. However, despite their benefits and services, coastal blue carbon ecosystems are some of the most threatened ecosystems on Earth and degradation of these ecosystems release significant amount of stored carbon dioxide in the atmosphere, contributing to greenhouse gases. He provided information on the blue carbon ecosystems in Mauritius and stated that one of the visions of his Ministry is the conservation and protection of marine ecosystems including seagrass, mangrove and coral

ecosystems, which have a crucial role in carbon sequestration. In addition, he pointed out the activities that are being taken in Mauritius to protect and restore blue carbon ecosystems, including, *inter alia*: the mangrove propagation programme in 1995; an on-going project to map and monitor the seagrass around Mauritius with the goal to determine the carbon sink potential of these seagrass areas in Mauritius to make informed-based management decisions; the proclamation of 8 Marine Protected Areas MPAs with a view to protect marine ecosystems which serve as carbon sinks; and the monitoring of changes in carbon dioxide in the marine environment in Mauritius under the project "Oceanic Carbonate Chemistry Observatory". He highlighted the need to measure and assess the amount of blue carbon in Mauritius and to take measures to protect, if not increase, the carbon sequestration in the marine ecosystem, by increasing the coverage of mangroves, seagrass and wetlands. He hoped that this workshop will be highly beneficial to all participants and help to build capacity and will trigger new projects in blue carbon. At his conclusion, he expressed appreciation to the CSIRO and IORA for their unflinching support and assistance and declared the workshop open. The full statement of Hon Mr Sudheer Maudhoo, Minister of Blue Economy, Marine Resources, Fisheries and Shipping, is annexed **as Annexure E**.

1.2.4 PRESENTATION ON: WHY DO WE NEED BLUE CARBON FINANCE? BY MAT VANDERKLIFT, IORA BLUE CARBON HUB

Dr Vanderklift started his presentation by providing an overview of the blue carbon ecosystems, including mangroves, seagrasses and salt marshes, and their importance in sequestering carbon. He mentioned that there are other systems that are important such as coral reefs, bivalves and kelp or seaweed, but they are not typically considered blue carbon. He mentioned that IORA nations have 47% of the world's mangroves but they also experience up 67% of the mangrove loss. He explained about the impact of climate change in terms of global warming and sea level rise, stating that IORA nations are more at risk, with a quarter of the 20 most at-risk countries being IORA Member States. With regard to livelihoods, he further mentioned that more that 50% of people in developing countries are dependent on fish, with wild fisheries being of high importance. He added that 41% of nations with high blue carbon fish production are IORA nations. He talked about natural disasters, stating that IORA nations are more susceptible to coastal hazards and he stressed on the need to explore nature-based solutions for blue carbon ecosystem protection and restoration that could greatly reduce emissions. Regarding livelihoods, he highlighted the importance of blue carbon ecosystems for the fisheries sectors. And regarding disasters, he stated that mangroves attenuates waves and thus save lives and livelihood. He emphasised on the need to protect what is already existent and restored what has been destroyed. He pointed out the role of financing and the importance of setting up appropriate financing architecture. He mentioned that one of the outcomes of the meeting could be the development of a whitepaper, that could be presented at the COP in Glasgow, together with a workshop report. A copy of the full presentations can be accessed at: https://drive.google.com/file/d/1c6TV0foLAS-5Q5s2j5QRDbIoVU6f3S3q/view?usp=sharing

1.3 DAY 1

1.3.1 THEME 1: PAYMENTS FOR ECOSYSTEM SERVICES AND CARBON MARKETS

1.3.1.1 Opening plenary by Torsten Thiele, London School of Economics on Sustainable finance for the blue economy

Mr Thiele provided the definition of sustainable finance and provided a list of terminologies that are familiar to sustainable finance, such climate finance and green bonds, payments for ecosystem services, voluntary sales and markets, innovative finance mechanisms, risk and insurance, among others. For the blue economy, he said that this includes all economic activities related to the oceans and seas. He referred to the case of the European Union (EU), whereby the Blue Economy accounts for 1.3 % of EU GDP, with the gross value of the established sectors, including fisheries, aquaculture, coastal tourism, maritime transport, port activities, shipbuilding and marine extraction of oil and gas, only up by 8 % compared with 2009. He made reference to an Article entitled "A roadmap for using the UN Decade of Ocean Science for Sustainable Development in support of Science, Policy, and Action" to explain about the Sustainable Development of the Blue Economy versus Traditional Ocean Economy. He explained about the Green Bonds Issuance and he mentioned that there are several ways people are raising money for the capital market. He presented Bonds by Issuer and the Headlines around the types of activities in this area, and he pointed out five keywords, namely, impact, reporting, ESG, wetlands and principles. He explained about the Sustainable Development Goals (SDGs) in this context and referred to the Report of the Roadmap to Oceans and Climate Action (ROCA) Initiative on Assessing Progress on Ocean and Climate Action: 2019. He explained about the increasing and cumulative ocean challenges and the need for integrated solutions approaches.

He made reference to the IPCC report, whereby he presented the level of impacts and risks to ocean ecosystems from climate change in terms of Global Mean Surface Temperature (GMST) and Global Mean Sea Surface Temperature (SST) relative to pre-industrial level. To monitor the progress towards the achievement of SDG 14, he pointed out the challenges, such as greenhouse gases, ocean acidification, ocean deoxygenation, eutrophication and marine biodiversity and presented the SenseOCEAN Tools that could be used to monitor and address these challenges, including N_2O and pCO_2 sensors, pH sensor, oxygen sensor, nutrients sensors and Fluorescence sensor. He presented the tipping points pushing the oceans past the point of no return and explained the urgent steps needed to restore ocean health, including the need to have a comprehensive financing mechanism for ocean management and coastal protection. He made reference to the Roadmap for Using the UN Decade of Ocean Science for Sustainable Development in Support of Science, Policy, and Action, whereby new partnerships supported by a new ocean-climate finance system is a key strategy to address the challenges faced by the ocean. He further listed the key themes that can be financed and show financial return such as in the field of innovation and technology, ocean governance and blue finance. He explained how the development of a blue finance mechanism can be applied in the blue space and stressed on the need for Blue Finance Solutions. Emphasis was also laid on the need to strengthen the response capacity of the Green Climate Fund. He explained about the innovative

finance mechanisms, bond structures and made reference to the Blue Natural Capital Financing Facility, which is an innovative finance initiative that assists investable, sustainable coastal projects, and the Ocean Risk and Resilience Action Alliance. He provided recommendations and listed the IORA implications and concluded by providing some recommendation on the way forward. A copy of the full presentations can be accessed at: https://drive.google.com/file/d/1SrsPkLWgLwdY4c83g8vlHBpaO1Gds6s_/view?usp=sharing

1.3.1.2 Question (Q) and Answers (A):

Q: You talked in your recommendations that there are avenues for investments and there will be a return. What are the investors looking for as a return, is it money or some other form?

A: At the starting point it is important to know about the client. The entrepreneur who undertakes an activity, that is where the investable proposition comes from and I do not think that this comes from the climate finance world. The climate finance world begins to do things without financial return but instead identify things within this space that have national keys possible to deliver returns but for some of them because of the timeframes, they need support of government agencies. I think it is about identifying what financial returns lies and if that promise further in the future that the initial investor is keen to take, if I can show that in 10 years' time we have deliver a lot of economic financial return but I do not have a 10 year timeframe as an investor, that is when you need to have a structure support mechanism.

Q: You mentioned about expertise being low. How much of obstacles have you identified in terms of expertise?

A: there is clearly a gap but if we look at the opportunity to make a trillion return with a hundred billion investment. A hundred billion investments is actually not such a large number. So, the type of expertise I need to deliver a hundred billion around the world for the blue carbon world. That would probably be enough people around if we put them in the right places. The sustainable finance world is already creating that. We have expertise gaps, but we do not need everybody to move over what we are doing. We need the dedicated few and the right data to support that. Expertise is a challenge, but I find that the amount of money that we can reasonably put into that space is actually doable amount with what we have in terms of knowledge around this space.

Q: How to distinguish between seabed carbon storage, ecosystem carbon storage and carbon storage from the other systems such as seaweeds, coral reefs. In terms of investment side, what are the value that can monetarised in order to create investment?

A: In order to get finance into the system, we need to identify where the money goes, what investment is spent on, the cashflow and so on. Lots of money is spent in financing as an option, such as the option of having a functioning seagrass bed than that of an effectively efficient nursery and part of an overall resilient structure of a coast. But we can get more precise about the science, but the science is not the reason why we do investment. I do not think that we need to have this amazing and perfectionism that comes from the scientific mind-set. It is rather what we can offer to the investors so that they can take the risk and not the scientists.

1.3.1.3 The Blue Forests economy by Steven Lutz, Grid Arendal

Mr Lutz stated his presentation by providing the definition of blue carbon and blue forests. He displayed a map showing the blue forests project sites and the ecosystems that are being focused. He mentioned that a pathway has been developed to harness carbon and other ecosystem benefits, with the pathways having different potential actions and goals. He further provided in-depth information on the value of blue carbon ecosystems in terms of fisheries, coastal protection, food, energy resources, carbon sequestration, ecotourism and recreation, pollution abatement, protection from sedimentation, wood and timber, and honey. Blue carbon has been receiving international attention in 2016 and he presented the coastal wetlands in Nationally Determined Contributions (NDCs) in 2016 and countries that include a reference to coastal and marine ecosystems in terms of mitigation in their NDCs (Mitigation 34), as well as countries that includes a reference to coastal and marine ecosystems in terms of adaptation in their NDCs (Adaptation 63). He listed the coastal wetland ecosystem services recognised in NDCs such as carbon sequestration, protection from sea level rise, coastal protection, fisheries, blue economy, energy resources, among others. He further provided information on the wide range of NDC actions, taking the case of Mauritius, Seychelles, Haiti and Antigua and Barbuda. He pointed out the blue forest benefits, with multiple blue economy options, including eco-tourism, carbon finance and sustainable aquaculture. He explained about: Carbon Finance, making reference to the Milkoko Pamoja project in Kenya; the Fisheries Conservation Agreements; and their benefits for Eco-tourism, mangrove honey, mangrove ink, mangrove dye, seaweed and kelps as food products and seaweed packaging. He provided detailed information on the Blue Forests Economy, which have multiple revenue streams. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1R_hIcfq3Ir80WLQK3jSVo4o5ZhJGa7k2/view?usp=sharing

1.3.1.4 Voluntary carbon markets: Madagascar by Leah Glass and Lalao Aigrette, Blue Ventures

Ms Aigrette started her presentation by stating the role of the Blue Ventures (BV), the lesson learnt, and the challenges faced during implementation of the projects. She provided a short introduction on the mission of BV which is to rebuild tropical fisheries with coastal communities. She presented the potential of Blue carbon and highlighted the importance of protecting mangroves ecosystems because they are the source of livelihood and food source for coastal communities across the world. She mentioned that the blue carbon project provides incentives to the local communities and sustainable financing can be secured though appropriate markets. The project sites and the Blue carbon project building blocks were presented, including: the science aspect, the project design (what are the causes of ecosystem to be able to identify the solution; the extent of leakages and ways to prevent the same; marker demand; the cost; and the project size); the financial analysis and benefit sharing; and the consent/buy-in/understanding. Leah Glass presented on the financial aspect. She mentioned it is important to know: the potential income from carbon offset sales; whether the carbon offset project is financially stable; the project development and implementation costs; and the opportunity costs. She made reference to the project in the north of Madagascar whereby the total carbon finance income is about 3 million USD for 30 years and the carbon income does not cover development

and implementation cost with a USD1.6 million deficits. She presented the opportunity cost that takes into account the ecosystem goods and services. She mentioned that without carbon finance, sustainable marine management would cost the community partners over USD8,000 but with carbon their additional income is USD90,000. The money is normally spent on communities, project management, government role, MRV, marketing and financial management. She stressed that it is difficult for people to believe unless they see it because benefits can take long to see and therefore there are short incentives. Understanding should be at all level, including local communities and political. She emphasised that for realising the potential, science is important but there are policy uncertainties. There is a huge carbon credit demand in the project. As a way forward, she mentioned that, in terms of science, there need to have blueprint projects with proper methodologies, policy case studies and to explore new paradigm for certification. There may be shorter projects and innovative financing. She emphasised on the need to minimise risk and maximise impact. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1B2m7fu0OdBi4mJVHGjZoAq0656SjlkK3/view?usp=sharing

1.3.1.5 Theme 1 panel discussion, with questions from the floor

Moderator: Mat Vanderklift
Panel members: Leah Glass, Lalao Aigrette, Amy Schmid, Steven Lutz

Q: If there is a nation in the Indian Ocean and who has aspirations to have Blue carbon in the NDCs and also want to start opening up the possibilities for voluntary markets but they do not know how to do so, what are the first steps the country need to take? For example, what, in your experience, are the policy platforms that the country might need to be included and what are the barriers that the Government might have to overcome?

A: Amy Schmid: A legal structure would be required to allow these projects to occur. Many coastal ecosystems are governed by national and local government and they might help to put policies in place and to explore financing potentials. Another important component will be, if mangroves are included in the national forest inventory in the country, that nesting of a project may need to occur, meaning reduced deforestation projects, reduced conversion of mangroves projects, will set out what is expected to occur in the absence of the project. Nesting means that it is aligning what the project has set out with what the national inventory is. In some cases, that may mean that the national inventory putting in place a mechanism so that they can align projects at the national level.

Steven Lutz: We are not at stage yet where we can be descriptive to tell a country what they want to do but it is up to the country to decide what they want to do. If we look at the NDCs, their path recognise the value of these coastal ecosystems, climate change adaptation, mitigation and actions, we will see that most of that is just recognising the value as a starting point just to say that these ecosystems are important. Then there are further types of commitments in NDCs such as different types of actions such as marine protected areas, blue economy or ecosystem benefits such as fisheries, adaptation and resilience to climate change. Then there are national measurable commitments such as preserving/destroying X number of hectares for X amount of

carbon. I would say that an entry point is the recognition of the value and at the beginning stage with Blue carbon and NDCs, the country needs to understand if they are going to commit for something, how much this is going to cost them, what capacity is needed to influence it and can be potentially get out from these results. Since NDCs are still new, we do not have the answers yet, so the Indian Ocean and the countries here could say what they want from NDCs then the NGOs can help in getting these answers but we do not have a country to country dialogue with countries on NDCs. There are number of ways you could go forward and not only through Blue carbon finance. For example for the case of Abu Dhabi blue carbon demonstration project to support carbon finance, we found that carbon finance is not feasible for UAE, however, Abu Dhabi and UAE were able incorporate the value of blue carbon and other ecosystem benefits into policy at the municipal level, at the emirate level and the national level, and in the NDCs. We need to determine where blue carbon is appropriate and where it is not and what are the range of activities and I think in the NGO foundation our role is to be providing that range of options and we can facilitate country to country dialogue to go forward with it.

Lalao: The involvement of the community is very important for Blue carbon development projects. The community play an important role in the success of the project and for Madagascar for instance, some approach is not working at all, especially for the community who are in isolated place. So, the bottom-up approach is most important for the communities and from that we can influence policy through the communities' voice to adapt the policy related to the blue carbon.

Q: In terms of legal, how is it favourable to voluntary market mechanism? The CDM type of mechanisms that were set up and some of the lessons is due to the lack of the legality that might result in projects not being successful but for others voluntary was easier to promote, to propagate among others in terms of value, it was not that significant. Recently, we saw what is coming out of the Madrid COP, Article 6 is trying to establish a market mechanism but there is still disagreement how this market will work and from the economic point of view, markets have demand and supply to set the price. This will not have a lot of legality in terms of willing buyers and willing sellers but may not be favourable to SIDS and developing countries because of that lack of institutional capacity to deal with this type of market.

A: Amy Schmid: With the Article 6 not well established, it is difficult to say exactly what the voluntary market will look like once a market mechanism is established. There have been a few ideas how the voluntary market can work in this context. First, will be cases where, if there is training between countries, a course starting adjustment will need to be made to account for the emission reduction in the different countries in the same way that there will likely be certain compliance markets that emerge like the CORSIA scheme of the International Civil Aviation Organisation, a mechanism that offsets the emissions from international flights. So, training between countries we would see that adjustment is needed at the government level for mechanisms like that. For a purely voluntary claim or carbon purchase, this will depend on the type of plan that is being made based on how the carbon credit is used. Right now, companies are able to purchase carbon credits and claim that they have offset their emissions by purchasing that carbon credit. In the future, that could still occur if the reporting is different between the voluntary market and voluntary claims and the country's NDCs claims. Another option for that

would be that the carbon claim made based on the carbon credit purchase is different. So, rather than claiming that your company has offsets its emissions, you may be able to claim that the company has helped a country reduces emissions. So, rather than claiming emission reduction for yourself, you are claiming that you helped to implement activity on the ground by purchasing carbon credit and helping to finance that activity.

Steven Lutz: requested clarification on a company claiming the help of a country versus helping itself.

Amy Schmid: The company will still be able to claim that they are reducing emissions and they can associate that with their own efficiency but depending on the kind of help that the target develops after the current agreement, those claims may not necessarily be possible. So, in practice, they may still be able to make this offsetting claim but the technicality of the claim will be different and that technically they are offsetting their emission by helping a country achieve their NDCs rather than claiming that they have offset their emission.

Steven Lutz: Would you say that a country claiming all their blue carbon right now for its commitment may not be the best strategy?

Amy Schmid: There are lots of potential there because for a country to conserve all their mangrove area there need to have finance and action on the ground and in this case they will need finance from someone and if the voluntary carbon market buyers are able to provide that, and they are fine with the new claim that they will be able to make, then there will be a huge opportunity for them. It will also mean that the government is in full support of any of these of these projects, they will need to worry about potentially uncertain government guidance. If the government is backing the project, they will be helping in getting the finance and helping actors on the ground to implement these activities.

Steven Lutz: Does that mean countries should claim all their blue carbon in their NDCs?

Amy Schmid: I think it is up to the country. There is also opportunities for country to include in the blue carbon in their NDCs in which case there need to have outside actor helping to do these activities. Including blue carbon in NDCs is very important but from the voluntary carbon perspective there is opportunities whether it is included or not.

Leah Glass: NDCs lays the foundation for potential Blue carbon financing but the voluntary market is just that is voluntary. Throughout the carbon credit, we have come across of lots of buyers that are interested in large volume and not necessarily so bothered about whether anybody is offsetting their own or contributing towards a country's offsets. there are lots of finance that are looking at real impactful climate mitigation actions. Whether align or not align with NDCs, focusing on NDCs and including them in blue finance lays the foundation for the monitoring, evaluation and reporting that will need to be done for an investor who is interested in funding a blue carbon project.

Mat Vanderklift: The Article 6 is part of Paris Agreement, mentioning about buying and selling of carbon offsets. It seems that there is a little bit of uncertainties and there is a need to remove

that risk from investors. The conversation around the NDCs also lead to the mitigation aspects of NDCs, more information on that could be provided.

Amy Schmid: With article 6, what the market mechanism will be setting out will be a way for countries to treat emission reduction with each other. If those can be traded between countries and is based on the emission reduction that they achieve from their NDCs, so, there is still some uncertainty but how that can work since Article has not been established yet and the market mechanism has not been set out. In some way, the voluntary carbon market is separate from the NDC reporting and trading. So, when you trade voluntary carbon credit, you are just trading about carbon credit and you are not trading between countries. The voluntary credit is between a project developer and a buyer. That is the big difference, especially for voluntary projects. The Voluntary carbon markets will continue to exist in parallel with NDCs and trading between countries. For adaptation versus mitigation, from carbon credit, it is all mitigation at this point but there has been an increasing interest especially with blue carbon and other case of adaptation benefits. So from our perspective, we have seen a lot of interest in coastal resilience, surface buffering and preventing damage from storms. In terms of the NDCs, I do not know too much about how adaptation is included but just to say from a voluntary perspective, we have seen a lot of interest in adaptation benefits such as financing for adaptation.

Steven Lutz: According to our analysis from 2016 and 2019, countries are recognising these ecosystems about twice as much for adaptation than mitigation.

Bilal Anwar: Article 6 has 3 components (6.2, 6.4 and 6.8) and only one is about market, which is Article 6.4. Article 6.4 is the most controversial one because of the rules and regulations. The potential for Blue carbon is actually present regardless of whatever shape article 6.4 takes but the agreement, which is evolving on 6.8 and 6.2, the blue carbon is valid for both market mechanism, non-market mechanism, as well as cooperate finance. As far as the countries or the institutions, such as CSIRO, IORA, and others, they are able to come out with the methodologies and there are actually a lot of work that has already been done and the methodologies are there and if possible rules can be aligned with the IPCC Guidelines, this is one possibility for the carbon market. The other question which is being discussed is the existence of voluntary carbon market and if it will be included in NDCs. If you see the history and evolution of voluntary carbon market, we see that the only credibility it gained once it was built on the regulated fund. The methodologies were based on the protocols, standards, quantification methodologies and everything else from the CDM. If the blue carbon and other carbon assets and the actions are clearly included in the NDCs, the extensions will be voluntary carbon market, other than being part the non-market mechanism and market mechanism. This will evolve over time. I do not see any challenges or any difficulties once the rule and regulations are set. It is less complicated when it comes to mitigation and is becomes really complex when it comes to the adaptation side because it has little opportunities for financing but there are new initiatives, new development that are at a very early stages by African Development Bank, called the Adaptation Market Mechanism, which delegates could see. The adaptation market and the market principles are being looked into and see how Blue carbon can be part of this initiative.

Dr Reetoo (Mauritius): Most of the blue carbon projects have community involvement but in Mauritius, we do not have any community engagement for mangroves. How would you brainstorm about options for blue carbon finance?

Leah Glass: it depends on the threats that are on mangroves, the threats that are on them and the benefits mangroves provides, that will dictate the stakeholders that will be more engaged. For instance, there is the fisheries angle and the development is another aspect. There is a mangrove-based insurance study, which is at a feasibility stage, that is using strict voluntary carbon market. The income from those projects are not sufficient to overcome the cost of development for countries like Mauritius and other SIDS that rely heavily on tourism. The insurance is everything for the valuable mangroves that pose in the face of sea level rise and increasing severe weather.

Steven Lutz: Is Blue carbon financing feasible for Mauritius and how to determine that? There is not a lot of mangroves and seagrasses here, how else can you potentially use the value for blue carbon. There are many other things that you can do with blue carbon apart from blue carbon financing. What is the baseline a country need to have for blue carbon finance and to see if blue carbon finance is feasible or not?

Doug Trappett: Amy said in her talk that it is very important to have laws at national and local level are in place. Is there an inventory on laws in the IORA region and Member States and perhaps what work needs to be done on such matter? We have a Professor at the University of Western Australia who is very interested in this area.

Amy Schmid: I do not have information on the laws that are in place in the Indian Ocean region. We need to have insurance that the particular developer or the person who is claiming ownership of the project has ownership of the carbon rights. In some cases, that mean they need to be able to work with the government to be able to claim that they have the right to operate activities in a certain area and with mangroves especially, if there are in nationally protected areas, the government need to be able to work with project procurements so that they are able to claim the emission reduction.

Steven Lutz: Through the Blue Forest Project, we supported Blue carbon policy options assessments for Mozambique, Madagascar, Kenya and will be happy to share that with you.

Ammar Aulaqi: Is there a way to introduce mangrove forest in coastal ecosystems and how sustainable these projects are once the funding of the project stops?

Leah Glass: There are certain exception. Mangroves are incredibly resilient species, but they do require quite specific tidal conditions unless it is the case where there used to be mangrove in that particular area but they are not developing there or there is a change in fragility, in which case mangroves can be restored. It is likely to be unsuccessful, but I have seen examples of passionate and proactive communities or government planting mangroves seaward in the seagrass bed. It is good to have a better understanding on the history of the mangrove area before, that may be used to restore mangrove and help mangroves and seagrasses to come back.

Steven Lutz: Aquaculture ponds have degraded mangrove habitats. We have to go for the restoration of those because they are found in a fragile condition that are just waiting to get restored. There are some areas where you can actually plant mangroves because of certain conditions. In the UAE, the success was because of the legacy of the Sheik, whereby if you cut one mangrove, you need to plant two. That worked there and it is one of the countries in the world where there is an increase of mangrove cover. We will hear from James Kairo about the project Mikoko Pamoja, whereby there was consultation with the communities and the mangroves that they have promised for their carbon offsets is later stage mangroves, which may undergo transitional development. To get to that later stage, you need to go through a series of ecosystem change.

Leah Glass: I agree that there is a lot of potential for the aquaculture restoration. In countries like Indonesia, aquaculture is ecologically and relatively easy. From a social context perspective, aquaculture restoration can be challenging. In other countries, we must be careful because it might be more complex than it might look.

Mat Vanderklift: there are methods called afforestation that could be applied on the coast. First you need to think why you want to do that. For example, Bangladesh has the largest track record of the world for mangrove afforestation for stabilisation of the coast. It is about 200,000 hectares of mangroves afforestation application for coastal stabilisation. There is potential for restoring aquaculture ponds because there are thousands square kilometres of unproductive aquaculture ponds.

Amy Schmid: Under our programmes and other voluntary carbon programmes, we have requirements that ecosystems cannot be affected. If we were to do a mangrove afforestation project, you need to demonstrate that the ecosystem is not being affected. Regarding how sustainable carbon projects are, from our perspective, we see carbon projects as being successful when they change practices. To achieve a fully changed practice, it is not just a simple to ask the community to change their activities to prevent mangrove degradation and then after the project is over the community return to what they were doing before. It is about introducing a new way, practices and changing things for the better so that the both the ecosystem and the community benefit. Under our and other programmes, we have different mechanisms, which permits any action and initiative that are achieved by these projects. So, any project developed, we need to go through that process to determine the risk. One of the things included is about project management, the project benefits, and whether the project is sustainable beyond the 20-30 years that the activities are being implemented

Leah Glass: We have not quite got to that at stage in the fact that the mangrove restoration, the blue carbon projects are currently validating that money under the project life cycle. The enabling policies and the importance of livelihood but the thing with carbon projects is the financing of the projects. Over the lifetime of these projects, the project developer or the government leading the projects need to make sure that the livelihood is financially sustaining themselves.

Thomas Krimmel: It is tragedy to see how Madagascar is depleted of its forests and, although I have seen reforestation and afforestation projects a few years back, we are still looking at reforestation rather than afforestation. How does this compare reforestation and afforestation on

land as against blue carbon mangrove projects with respect to cost efficiencies, sustainability. Is mangrove restoration, afforestation, is that a much more cost-efficient way of carbon sequestration as against reforestation on land. Do you have figures on that?

Leah Glass: Deforestation in Madagascar is accelerating at a very high rate. There are a lot of policies and projects in place to try to prevent that. From one side, some of that is controlled in the fact that deforestation in Madagascar is banned.

Lalao Aigrette: To add on the sustainability of blue carbon projects, from the experience from the ground, the trust is most important as the timeline of the project is quite long. It takes time to develop, and until the community perceive the benefits through the carbon revenue, it is hard for the community to believe that this is working. The key successes are to promote additional livelihood for the communities in parallel with the development of the project.

Leah Glass: Mangroves are very resilient, and if their original, ecological conditions are restored, there is potential for restoration, and I think a lot of that relates to social and business conditions on the ground.

Seychelles: The main outcomes of the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) project is we are starting to work on quantifying the seagrass habitats for sequestering and storing blue carbon is Seychelles. I would like to know what would be your recommendations for us as the project is starting and if there is any implementation advice that you can provide us, as well as on the blue carbon finance mechanism that we can include and start looking at.

Steven Lutz: We are at the final stage of producing a report on seagrass at UNEP, which includes answers to Seychelles' questions. I do not think that the seagrass question in the carbon sense is really been answered too much yet but in Kenya they are exploring blending mangroves and seagrass carbon offsetting. So, I think this is something to look at.

Amy Schmid: From our perspective, we have seen a lot of interest and seagrass restoration and conservation projects, but we have a very recent interest in it. We have not had any direct experience in such projects. For restoration, the cost of doing restoration may be more expensive than doing a reforestation or planting trees. So, that could be a barrier in developing such type of projects, but they are supported under voluntary mechanisms, so carbon finance would be an option.

Leah Glass: Monitoring of seagrass and carbon loss is important. I have come across a few success projects on marine spatial planning and utilising those mechanisms and through these mechanisms getting some monitoring going on. So, we need to know what is happening, where there is loss and knows the reasons of losses. Seychelles can identify the causes of seagrass loss, which is easier to control and financially feasible to control. I believe the carbon and finance angle is a way to incorporate the NDCs.

Main outcomes/recommendations:

- To promote investment into sustainable ocean sectors and ecosystem restoration opportunities, which can be a key part of the blue partnership initiative;
- To use the Sustainable Blue Economy Finance Initiative and Principles are a practical tool to assist in helping them to deliver ocean solutions;
- To generate accelerated actions to support protection and restoration of blue carbon ecosystems in the Indian Ocean;
- To promote strong ocean Nationally Determined Contributions (NDCs), marine spatial plans with ecosystem protection for resilience and biodiversity, engaging all sectors;
- To explore ways and share information on how blue carbon finance can be accessed by IORA Member States to support blue carbon ecosystems conservation and restoration actions;
- To encourage Member States to access climate finance tools such as the Green Climate Fund (GCF) and multilateral development banks (MDBs);
- To promote private investor engagement, with incentives for a rapid transition to clean energy and nature-based blue infrastructure.

1.3.2 THEME 2: FROM CARBON MARKETS TO SUSTAINABLE TRADE

1.3.2.1 Linking carbon credits with environmental and social benefits by Amy Schmid, Verra

Ms Schmid started her presentation by providing an introduction on Verra, which is based in the United States. She gave a brief overview of three programmes: Verified Carbon Standard (VCS), Climate, Community and Biodiversity Standards (CCB) and Sustainable Development Verified Impact Standard (SD VISta) programs. The VCS Program is the world's most widely used voluntary greenhouse gas (GHG) mitigation program, and it is for the validation and verification of GHG emission reductions and removals. She presented the growth in nature-based solutions, which has experienced an increase over the years. Under the VCS program, she mentioned that there are two approved methodologies for tidal wetland restoration and mangrove reforestation. Verra has also a Blue carbon Working Group to better support Blue carbon projects. The CCB standards are for land-based (including coastal wetlands) project design standard for projects that deliver: Credible GHG emission reductions/removals; benefits to local communities; and biodiversity benefits. The CCB standard requirements were listed and the CCB project benefits were pointed out. She also briefed the meeting about the SD VISta, which account for contribution to the SDGs and drive finance to make progress toward and achieve the SDGs. She provided information on the core requirements of SD VISta, the net impact on stakeholders, the net impact on natural capital and ecosystem services, and listed the project benefits. She presented the Coastal Resilience Asset to qualify the coastal resilience benefits of tidal wetland restoration and conservation and explained about linking carbon and non-carbon benefits. She pointed out the need to use multiple certification, for example to get access to new demand sources, to request for higher price for carbon credits and to help projects to demonstrate compliance with safeguards. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1tynvJxJkQR8XN4ZWuzWt-Cfq_PzROcxy/view?usp=sharing

1.3.2.2 Blue BioTrade and the challenge of marine ecosystem services valuation by Paolo Bifani, Blue BioTrade

Mr Bifani made reference to the UNCTAD report and provided an overview of the components of the value of the ocean economy and the basic accounting systems measuring the ocean economy, which have got three activities/accounts, namely: the National Income Accounts based on the UN System of National Accounts (SNA); the System of Environment and Economic Account (SEEA); and the Experimental Ecosystem Service Accounts (EEA). He pointed out the components of the blue economy relevant to Blue BioTrade and list the BioTrade principles and the three approached adopted by UNTAD to implement the BioTrade Principles namely: the value chain approach; the adaptive management approach and the ecosystem approach. He provided in-depth information on the classification of ecosystem services and their economic values. He mentioned that there are a number of articles and reviews dealing with ecosystem services and referred to a graph showing a significant increase in the number of publications from 1996 till 2010. He explained about the commodification and privatisation of genetic resources and the ecosystems services cascade model. A copy of the full presentation can be accessed at:
https://drive.google.com/file/d/1H43gKQNqx4IHm5c08shjIWh1jsnORV1p/view?usp=sharing

1.3.2.3 Sustainable mangrove business models: examples from West Kalimantan, Indonesia by Aris Wanjaya: Sustainable Trade Initiative

Mr Aris briefed the meeting about the IDH Landscape programme, which covers 12 landscapes across 8 countries, and IDH partners in derisking and Innovative Finance. He took the example of the landscape in West Kalimantan, whereby the IDH has three main goals, namely: to protect the remaining natural forest areas on private, state and community land; protect and rehabilitate intact peat areas; and enable landscape connectivity by linking forest blocks and restoring degraded areas. He also presented the case of PT Kandelia Alam and the positive impact of Silvi-culture in this area. He pointed out the three options for Wood Industry and the potential Blue carbon project in Pt Kandelia Alam. He also took the case of the Village Forest Padang Tikar, which has four zones: the water and small island; the protected mangrove; other land use; and Peatland and Hill Protection. He presented the mega mangrove biodiversity in Padang Tikar, with 67 species of mangroves, 32 species true mangrove and 34 species of associate mangrove. Detailed information of the village Forest Permit with 33,000 ha of mangrove and the business model of mangrove protection-production was provided. He presented the Finance for Sustainable Livelihood, for which Indonesia releases first phase of EUR 6million loan to boost sustainable farming based on IDH's village forest model. He presented the crab silvo-fishery and the VCS carbon project in Pandang Tikar. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1zmLapHngVNbqww78mV6SvFAgmEEWNVBg/view?usp=sharing

1.3.2.4 Theme 2 panel discussion, with questions from the floor

Moderator: Andreas Hutahaean
Panel members: Amy Schmid, Paolo Bifani, Aris Wanjaya

Andreas Hutahaean: Why are there so many standards and why these are not incorporated into one? What is the history behind that? Who are the payers? Can a country do their own verification, restoration and conservation and so on given that the methodologies are there?

Amy Schmid: It is complicated to use more than one standard for blue carbon and other benefits. We do it for flexibility. Some of the voluntary carbon programmes, require that all projects demonstrate SDG benefits for example. With our system, we allow projects that want to demonstrate those benefits but also allow projects that only want to demonstrate their emission reduction benefits. To have multiple co-benefits standards, we originally developed the SDVista to be separate from the CCB due to climate community and variable sea alliance and the governing structure around that standard but we are now looking into ways to integrate those together, so rather than having two co-benefit standard, we just have one. Regarding who pays for this, it depends on the structure of the project development. So, in some cases, it may be that a buyer recommend funding for a project to be developed and in other cases, it is developed by an NGO or conservation organisation or it may be developed by a government entity. For anyone who want to develop a project, the methodology is there, and the rules and requirements are there. However, it can be a technical endeavour. So, many projects work with an experienced consultant or a project developer who is more familiar with this type of technical components of project development but that is not required but people do to make it work.

Andreas Hutahaean: So basically, countries also can do this.

Amy Schmid: Yes

Andreas Hutahaean: You mentioned that under UN, about the ocean economy, the ecosystem services are not part of the calculation.

Paolo Bifani: If you look at the economic evaluation and all these standards, none of these include ecosystem services.

Andreas Hutahaean: Is it because most of the economist are counting the direct benefits to commodities of the company, or the countries, or because of CO_2 absorption or fisheries not being counted?

Paolo Bifani: Fisheries is not included in the OECD classification but is included in others while ecosystem services is not included in any other sectoral approach. Even trade is not considered as a sector but only part of a classification. This is very interesting because if you take into account that more than 90% of trade is by sea, it is very impressive, but sea trade is not included in any classification by World Bank and ecosystem services is not included in any sectoral classification.

Andreas Hutahaean: Aris, in your project in west Kalimantan, it seems that something beyond blue carbon seems more favourable than the carbon itself although you have not mentioned about carbon itself being sold. But the commodities and the company doing some ongoing projects seems promising. Would you go further to carbon trade, because may be there is something more valuable?

Aris Wanjaya: The challenge for blue carbon project is the communities in particular being not able to receive the benefit in short term period. First, we really need to empower the communities that are already available in the island or the projects for example the coconut charcoal and then see the carbon as the alternative solution to pay the protection that they already conduct or for the companies. They can just cut the mangrove for timber but instead they refused. The valuable will be seen as potential commodity for financing and protection. I do not think it is the best option for both because different projects, would require different approach. In this case for example, just by telling people that we need to protect the forest, install the monitoring system, the finance and already provide laws for the commodity. It is critical to show that there is a strong business model. It could include carbon trading but can help the group in the particular project.

Andreas Hutahaean to Aris: in your area there are several companies involved. They have huge area of concession for their business. When they apply for the permit, they need to protect some part of the area. If the area that you are already preserving is the area that they have to protect, in this case, how is the business process if the area (if it is already been used for carbon market then it is fine) but what if the area is protected by the law?

Aris Wanjaya: We are now talking about additionality. Indeed, Indonesia's regulation requires forestry companies to protect 10% of the total area. In this case, if the project area is 18,000 hectares, so they must protect 1800 hectares but instead if they go beyond that regulation, then we are talking about additionality. When we try or decide to do ecosystem services or any carbon trade scheme, then we need to provide evidence that the other areas that is now under protection is under trade from someone else. So, in that particular project, we have identified that actually the protected areas in the companies' concession been looked by communities for the charcoal. I did not mention that in an island, there are lots of charcoal industry, so that is where the additionality comes for that particular project. When they go beyond the regulation, the remaining area could be used for blue carbon if they decided to go for blue carbon projects.

Thomas Krimmel to Aris Wanjaya: You are using this forest also for charcoal production but if we talk about carbon, is that not a contradiction to use that forest also for charcoal? Are there other use of the wood other than charcoal?

Patrick Karani: Regarding the response to the challenge raised by Aris, they are having an issue with underground carbon. The availability and validity of underground carbon is not appealing to the buyers of offsets, which is quite challenging. The IPCC came up with measurable like indicators for both above ground and underground. Maybe you can provide clarification on that. Aris, what type of financial mechanisms are you using to source funding to the local communities because you said that you trade-off projects so that they know when to protect and what to restore the mangroves. If you think of it in terms of returns on investment, it may

not be really viable type of initiative for any commercial picture. What type of mechanism or measure are you putting in place that connect work with the local communities and for the investors?

Aris Wanjaya: Indeed, the charcoal is a bit contradictive. Our main role is to transform the business from that particular company and actually we are in the process to convince them that 100% stock the wood industry even though they are certified for timber but the challenge is that we need to introduce a new business model as soon as possible for example, carbon. In this case, the company do not touch the timber but can get finance from other source. It is one of our strategy, but it is still under process because we understand that for both the company and the surrounding communities are producing charcoal. We are trying to connect with the landscape approach so that the company protect, instead of cutting down the mangroves. For the financial scheme, I also introduced the business model, whereby 10 villages are grouped into one umbrella, one entity. This one entity can then reach individual community and the communities have the right for the mangrove protection. If the Ministry becomes aware that there is deforestation of mangroves, then the permit will be removed. But the financers only care about what would be the business, what would be the organisation that will apply for the finance and how the money will be distributed to the cooperatives. As per the organisation and the business structure that I presented, the financers send the money directly to the community group. Depending on the business, there will be different groups. The money will go to these particular groups, but they can only access the money if the platform approves it. It will avoid any misuse of the finance since they can only use the money for the proposals that have already been approved. In that sense, the financial risk will be over. The third party is not controlled, and this is my organisation's role. We tell the financers that we need finance for business and not for training and capacity building. We try to link this project to something bigger, not only within this island. We tell the financers that, for example we are asking money for honey developer. However, the communities, when they develop business, they develop the commodities and they forget about the market. In our project, we bring the market together with the communities to go to the bank to request for finance so that the bank knows that the communities already have buyers for their products, which makes it very easy for the bank to take a decision. The monitoring system also help us in allowing the monitoring of performance of the project from the environmental point of view

Amy Schmid: To answer why buyers may not be interested in underground or below ground carbon. One of the challenges is there might be technical difficulties in measuring carbon in soil and measuring above-ground carbon may be a very tangible project if you need to go out and measure a tree and see how much carbon is in that tree. Remote sensing can also be used to accurately see if a forest has been cut down. Below ground carbon is much more difficult those things, which may be one reason why people are less interested in below-ground carbon. At Verra, we are hearing that there are increasing demands for these projects that sequester carbon and new development in technology that could measure carbon more accurately. One of the reason, may be that the Forest Reference Emission Model, in cases where mangroves are included, the Model only takes into account the deforestation of above-ground biomass and does not take into account the below-ground biomass in the Forest Reference Emission Model.

Mat Vanderklift: In his keynote, Torsten talked, how to reduce the risk for an investor and the presentations this afternoon talked about property rights. On land it is easy when it comes to owning properties and the rights on these properties but in the case of the ocean it is more difficult because people does not own the seabed to access the carbon rights for the seabed or for any other blue forest economy resources. What are the options to take the risk for investors in terms of property rights?

Leah Glass: Amy, you mentioned in your presentation that the SDvista was created due to the interest of stakeholders. Who are the stakeholders and what kind of interests that led to it? Did you create it purely to be an add-on to the VCS or could be a standardised standard?

Paolo Bifani: There are problems with the payment scheme for coastal ecosystems. If you look at the experience of payment for ecosystem services for coastal ecosystems, there are a lot of discussion but most of them are paying for the land which is supposed to provide ecosystem services. This does not comprise the whole ecosystem completely but focus on one aspect, which may lead to some kind of conclusion if you look at the report of the ecosystem services payment schemes, which include for example the payment for the United States Recovery Procurements many years ago and European Subsidies on set-aside Land. These are completely different. Many projects now have the same characteristics and do not involve a contract between a buyer and fisheries service provider. Most of the service systems are not between a buyer and a provider of ecosystem services. Most of them are from the government to some intermediary and many times with an NGO, and no contact between a buyer and a provider. This is the difficulty we are currently facing in coastal ecosystems. There are also no property rights in marine ecosystems and that systems have no boundaries given that we are dealing with marine species, space that do not have clear limits. Government and local states need to establish some kind of payment schemes. The ecosystems do not only provide one ecosystem service but more than one. Marine ecosystems provides more ecosystem services compared to terrestrial and also provide some ecosystem services that terrestrial ecosystems do not provide. The payment scheme does not include these issues and how this affecting the provision of other ecosystem services. This is why the system is being analysed not through the case for payment for ecosystem services but is going through the complex system with the use of a cascade approach and the contractual approach. Even in some country, where this has been applied, for example for the case of Costa Rica for the mechanism of payment for ecosystem services, they changed the name from subsidy for conservation to payment for ecosystem services, which is in fact a subsidy.

Amy Schmid: About property rights for those who may not own the property, our standard also consider, in addition to people's ownership, traditional community property rights. For the case where a fisherman may not own the sea when he goes fishing but owns the fish once he catches it. We would consider that as a community rights to that resource. So, those interests would need to be considered in the development of a project and, specifically, with that example of the fisherman, the fisherman community need to be consulted and involved in the development of the project to ensure that they were aware of what the impacts would be of the project activities and also they would see a benefit from project activities, whether that be alternative livelihood or they have education to fish in a more sustainable way.

Aris Wanjaya: In Indonesia, the government can produce or distribute the rights on land to the communities to manage the forest and the mangrove. I understand the complexity about the sea types of land ownership but the rights on land are also crucial. Otherwise you cannot get projects and finance if you do not have rights. So, Indonesia now has a very good approach to give the rights. The challenge is not only about the rights but also the accountability of the rights in order to get projects. You may get the rights but not accountable enough to be a partner of any projects. This one of the challenges that will need to be tackled.

Leah: To share the experience of Madagascar, I think it is a common policy context in the fact that similarly to oceans, from the community perspective on mangrove in Madagascar would be kind of similar to the Indonesia's legislation. Community has some rights to the mangroves but from my advice that is not enough from the VCS perspective to prove that kind of control. The government remains the owners of the mangroves but the idea of potentially creating a formal collaboration so that the community or government being there for the project. There need to have a coalition between the community and the government, which are the owners of the projects.

Andreas Hutahaean: In Indonesia, all the territories have ownership, either it is personal or government. For the case of the ocean, for example the fisherman, they do not have the ownership for the ocean because the ocean belongs to the Government, but they can take benefit from the ocean for the fishing activity. There is no property rights at the moment.

Amy Schmid: Regarding the stakeholders and who are interested in SDvista, we have interest from project developers who will be able to use the CCB Standards either if they want to develop land-based projects or if they want to have all three tastes of benefits, they need to have strong community involvement. We also have interest from projects and the main sources for a link between project benefits and SDGs. The SDvista can be used on its own. One of the main reasons for developing it is for projects that may not necessarily have a climate component that will be able to relate to the different SDGs.

Main outcomes/ Recommendations

- Germany: To make a resolution to the IORA CSO/COM to introduce "carbon offsetting" payments as a principle for all IORA related flights, to be used for Blue carbon projects in IORA Member States.

1.4 DAY 2

1.4.1 RECAP: MAT VANDERKLIFT

- We talked about the values that we can get from these blue carbon ecosystems. There is estimate of 1 trillion of value but there is need to have investment.
- Torsten mentioned that if we take the whole Blue economy landscape as a package, there is lots of investors. He talked about capital market and those investors are looking for think to invest on. So, what can they invest in and what is the return and risks for that investment? He talked about a regional approach and the strength that IORA can bring as a consortium of countries.
- From that broad blue economy perspective and thinking about Capital market, where you can buy and get something in return. We heard from Leah and Lalao about their experience in setting up a programme. Steven Lutz talked about the broader package of other things that you can get alongside carbon.
- Amy said that there are frameworks to do that, through Verra, where there are support for communities, there are framework that allow that investment.
- Aris gave an example from West Kalimantan of how a company who is making money from wood is also looking at how it can justify and support a broader package of investment that they can get
- We heard about the concept of ecosystem services from Paolo, and how on land it is quite easy but when we get into the ocean, things become more difficult for the seas in terms of the framework for accounting but also for things like property rights, access rights.

1.4.2 A TOUCH OF MAURITIAN BLUE CARBON BY SHASHI CHUMMUN, ECOSUD

Shashi provided a brief background on the EcoSud, which is Non-Governmental Organisation (NGO) involved in preservation of the natural resources of Mauritius and Lagon Bleu project, which is funded by SGP and UNDP, involving protection of the marine environment. He displayed a map showing the location of the NGO, the coral reef ecosystem, the Blue Bay Marine Park (BBMP), the fishing reserve, seagrass ecosystem and Ile aux Aigrettes. He mentioned that the BBMP has undergone a lot of degradation over the recent years. He provided a brief on the history and development of this part of the island and provided information on the BBMP, fishing reserve, bleaching even in early 2019 and coral mortality. He mentioned that coral in BBMP have been degraded due to climatic, anthropogenic and human impacts. He stated that the fishing reserve, compared to BBMP, is doing much better in terms of coral cover and biomass. He informed the meeting that lots of work have been done with coastal communities, which was difficult initially. The fishing reserve has up to 80% coral cover, which comprise mainly of branching *Acropora* sp., which is also very susceptible to increase in sea surface temperature and have a high rate of mortality. With regard to seagrasses, he mentioned that there are 5 species in that area and dominated by *Syringodium* species, but these seagrasses are being impacted by human activities because Mauritius used to extract sand before the year 2000. These were also removed for touristic purposes. The NGO worked with the local community and came up with the Voluntary Marine Conservation Area (VMCA). For mangroves, he mentioned that there are two species, dominated

by *Rhizophora* species. He explained about the RAMSAR site of Pointe D'Esny, which has lost its productivity due to a presence of a road that resulted in the loss of connectivity to lagoon. Human activity have also impacted on the site and by invasive species. A copy of the full presentation can be accessed at:
https://drive.google.com/file/d/1cT9Y9Rit2dhU4x3WHeQsf71YWOYX2dpg/view?usp=sharing

Questions (Q) and Answers (A) from the floor:

Q: Sri Lanka shared the experience of the mangrove ecosystem in his country and suggested that the road can be raised to improve the connectivity between the mangrove and the sea.

A: One proposal is to raise the level of the coral to increase the connection to the lagoon. The issue of Tilapia being everywhere is a concern now, especially given that it is not consumed in Mauritius.

Q: To follow-up with the Mauritius query on involvement of community, how to resolve the conflict with the community?

A: This conflict is very difficult to resolve but we try to provide them with some fishing zone. In terms of the mangrove, the perception of mangrove in Mauritius is very different for local community and tourism sector. They cannot relate what are the purpose of these plants and therefore we need to connect them emotionally to mangroves.

1.4.3 POTENTIAL OF BLUE CARBON AS A SUSTAINABLE FINANCING MECHANISM FOR MANGROVE CONSERVATION IN THE IORA REGION BY JAMES KAIRO, KENYA MARINE AND FISHERIES RESEARCH INSTITUTE

James started his presentation by providing a background on the global Blue carbon ecosystems, distribution of mangroves, salt marshes and seagrasses. He mentioned that blue carbon ecosystems are threatened, with mangroves having already experience a loss of around 67%.He further stated that these ecosystems, when degraded or lost, can become significant sources of carbon dioxide, increase storm surge and erosion, and loss of habitat for commercially important fish. He made reference to the Paris Agreement, Article 4 and 5 regarding promotion of sustainable management, and promotion and cooperation in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases; and the action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases, respectively. He mentioned that Blue carbon ecosystems would be contributing to all Sustainable Development Goals (SDGs). He presented the Blue forests ecosystems in Nationally Determined Contributions (NDCs) and he made reference to the project in Kenya namely Mikoko Pamoja who aims at preserving and conserve mangroves for carbon trading. He pointed out the activities under the project, namely: restoration of degraded mangrove areas, avoided deforestation, education and awareness; and forest monitoring, which all contribute to carbon capture. He presented the project site, the methodology (in terms of vegetation monitoring, established baseline and impact assessment), the benefit sharing, and the community water project. He stated that the government is willing to support the education, but the provision is too little. There are also activities, including informal education, community participation, link with other villages and country, such as exchange program, and surveillance. He mentioned that they are able to influence policy, to organise field

trips and sustain mangrove goods and services. He informed the meeting that the project is being replicated in other regions. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1Ed_2TdtRqD8yRt06XZYFNfD-Slo3TCWi/view?usp=sharing

1.4.4 THEME 3: BONDS

1.4.4.1 Blue Bonds: Opportunities for Blue carbon financing by Dominique Benzaken, Australian National Centre for Ocean Resources and Security

Dominique started her presentation by putting Blue carbon in a bigger framework in terms of law and policy settings. She mentioned that the Blue economy is an important framework into which Blue carbon can be placed into. She explained about framing Blue carbon in "Blue finance ecosystems" by highlighting the capital types and sources and the opportunities in the sustainable Blue economy. She explained about Blue Bonds, which is viewed as a financial tool to raise capital from investors. She differentiated between green and blue bonds. She mentioned that the increased awareness and the ocean development opportunities has put the Blue economy in the investor's spotlight. She mentioned that to implement the SDG, there is a huge investment gap, which also attract investment coming from private investment, public investment and so on. She pointed out the challenges and readiness for Blue bonds. She mentioned that to leverage private investment, a blended finance is required, which provide an opportunity for attracting private finance to the ocean sustainable blue economy and climate resilience. She made the reference to the Global Guidance and Standards and verification for ESG investments. She explained about the Seychelles' Blue bond, the drivers, the sovereign bond, the use of the proceeds. She pointed out the lesson learnt, including the success factors and implementation challenges for Seychelles while developing its Blue bond, including communication and education, transparency and accountability and policy coherence, among others. Some of the challenges of bond finance for Blue carbon include scale of the project and the need for an enabling environment. She also pointed out the opportunities. She referred the example of the Pacific Ocean Resilience Bond and the Pacific Ocean Impact Bond Project. She concluded her presented in providing some suggestions on how IORA could get involved, including though: shared regional priorities for investment; sharing expertise, knowledge, tools, capacity building; promoting/communicating best practice financing/pilot projects; regional cooperation; and encourage trans-boundary / common interest projects; policy harmonisation. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1LtML-UwR8GBuzLOqx7-EQTxy6TLj030y/view?usp=sharing

1.4.4.2 Theme 3 panel discussion, with questions from the floor

Moderator: Andy Steven
Panel members: Torsten Thiele, Dominique Benzaken, James Kairo

Thomas Krimmel to Kairo: You mentioned about the carbon storage aspect of mangroves, whereby 0.5% of the seabed is covered with mangrove, representing 50% of carbon storage. I would like to understand the difference between carbon sequestration and storage? From my understanding, if we are talking about sequestration, the highest potential would be to have a

system of sustainable harvesting of the mangrove and not just letting them grow and die. Because with their decay, they will release the stored carbon. If we talk about the Blue carbon, what is most efficient way to capture most of the carbon and then making sure that it does not go back to the atmosphere. I have learnt that if we use sustainably grown wood for construction, this is an efficient mean of capturing carbon for a long time. If we burn it directly, the carbon captured is directly released. It we turn it into charcoal, the carbon effect of charcoal is really worrisome because this would defeat the purpose if sustainably harvested wood is turned into charcoal and then most of the carbon released in the atmosphere.

James Kairo: When we talk about the capture of Blue carbon, the most important blue carbon is the one in the sediment. The stock is what is there, and sequestration is what is captured. Taking the reference of charcoal, it comes from sustainable managed soil. The question is how sustainable. The major driver of the blue carbon ecosystem is overexploitation, the demand is higher than the return. The conversion pressure, where people do not value them, and they convert them into marina. The question of being a major emitter is when that system is converted for other end users. Stock is what is there, and the most important stock is what is captured in the sediment and sequestration is what is exchanged during photosynthesis. Casuarina is a problem in some countries because they are fast growers and it can be a weed, but if it is harvested it becomes sustainable wood. The sustainability is most important.

Patrick Karani: There is an increase of appetite for Blue or green bond. Big countries are challenging the developing countries or the SIDS. How viable or visible for these countries to have a financial instrument and what is the implication? James, you are doing good work in terms of building the local community assets and engaging local communities. It is good to go along with well to better understand the leakages. What are the potential leakages out of this initiative? For example, mangroves can be subject to termites, to fire and so on. In terms of securing these good initiatives, are there some insurance or schemes so that whenever there are these kinds of insecurities occur, the local communities are not discouraged but instead more encouraged to participate to do much more in the near future.

Torsten Thiele: Debt swaps is a process that allows you to raise a more integrated financing instrument. Looking at it in an even broader way, the whole idea of moving towards a result-based finance structure, including these types of bonds, they are the instruments that should carry the risks. There are opportunities that sit around blue finance to make it more project financed type of approach and that means that the more the risks get moved to the investor, and the more the project can stand on its own feet, the more the risks are moved away. There will need to be insurance steps. One of the discussions I had is around a partial type of guarantee so that this type of debt only counts, for example 25% of the total debts. These types of components are crucial to get the finance ministries in countries to engage in this process and they should be. And it is in that way that we will be able to elevate the whole debate that we have around the value of nature, the value of natural capital and the opportunity that lies in protecting nature and identifying these types of financial firms. One example is the Seychelles' complex approach to a blue bond. Another example where we were able to effectively deliver this type of financial instrument in a shorter time frame because the components needed were already pretty much in place. Speaking about this in the context of Baltic Sea, which is a quite

degraded environment with lots of dead zones and lots of issues for fisheries to re-emerge, we need to make the water cleaner, we need to have more oxygen in the water. In that area the Baltic Investment Bank raised a blue bond around wastewater treatment plant. That was a mechanism to bring a much cheaper finance and a much more direct system, with zero additional debt from any other countries involved because there was an engagement from the city. So, the city users have to engaged with the financial structure, but the overall risk was taken by that multilateral institutions. So, the Baltic Investment Bank has the constitution. That is why in the example that Dominique referred to, we have talking about using as the mechanism for multilateral financing institution. This can be done, although the situation may be different and need to be tailored. By engaging with the dept structures, you can engage with the finance ministries and have a serious discussion on the matter.

Dominique Benzaken: Most countries and islands have debt distress and the financial capacity to raise a bond is limited because it will add to their existing debts. A debt swap is different because it will restructure your existing debt without increasing your debt and that is what Seychelles has done. They have initially started with a debt swap in support of their nature. For the Seychelles' bond, the initial risk and having guarantees are very important. The regional approach is a way of dealing with the fact that many individual countries may not have the capacities to raise a bond on their own but at the regional level, it is actually a way for this to be possible. Another issue is about the mind-set and communication. I think it is important to communicate clearly what a particular instrument can do or cannot do so that people have a good understanding about the requirements that are needed so that they can actually put their head around and do the right thing because if they do not they can actually find themselves into trouble like what happened in Mozambique.

James Kairo: When we are developing blue carbon projects, we need to identify and factor the risk, which is called buffer. Some of the risk we get is, the area of the mangrove planted may just become silted because of the moving sediment. In some areas, they just come and wash everything up, which is a loss and we factor that. Mangroves may survive pest because they are resilient to some of these, which is also factored in. That is why most of the projects fails because you fail to address how to control leakage. You need to identify the additionalities, leakage. Under leakage, we give buffer and provide other opportunity on what would be the alternatives such as source of food, source of energy, employment opportunities and so on.

Mat Vanderklift: James Kairo mentioned the extent of mangrove deforestation around the world, which we know is higher in the Indian Ocean than any other region and Dominique mentioned the scale mismatch between a project and the sole investment that bond investor is looking for. If we have got hundreds of thousands of hectares of mangroves that is potentially viable for restoration. There are two ways of approaches for that: one single investor can buy or leases and turn it into one project; another possibility is having individual projects but perhaps bonded them in the same way Torsten mentioned about a bank bonded them all together and serves as a security. What is the kind of mechanism for the different options and are these sensible options? If we take that scale-up approach, what are the risks that we need to manage from the local community level?

Torsten Thiele: I think both options are ways to help when addressing the community question, which is much more to think about the local context, and in this context to think about what the potential revenue that falls beyond just the mangrove areas are. That is how the community thinks about it. They think about their livelihoods in that area. I think about the context in that area, what is the need, the plan for next step in terms of infrastructure development. In infrastructure development it is where that there are lots of money that are being spent. Huge amounts that would be spent to upgrade the cities, upgrade the road and telecom networks and everything else around that. In the context of planning those type of infrastructure investment, we need to be much more conscious of all the values that the natural systems can deliver and the nature-based solutions, be it replanting and reinforcing the mangroves with the local communities, are key part of that resilience. If you plant that coastal zone appropriately with a stronger mangrove protection component, the entire infrastructure around that would be strengthened. That allows for a larger amount because infrastructure inherently bring in the larger among and the larger financers. We need to look at those type of projects as it attracts those investors as to the values of these natural systems. These natural systems are no longer seen as an inconvenience or additional cost but rather as an essential component of that planning in that area and of something that appeals to the financers. Lots of infrastructure project are long-term for example a 25 years type of project. So, all of a sudden, a mangrove concession project in that area may seem a very reasonable timeframe whereas if we start out a small private business type of approach and want our money back in 3-5 years, mangrove looks like a longer term type of project. So, by turning the timing around, we turn the economic value of concession around. Putting these types of blue carbon ecosystems components into the frame of what is actually the real life of public financial world. It is the application process that we have to do and explain to them that these types of activities that we are talking about is of political value to real project financial influence.

James Kairo: Why are those systems that are highly productive and valuable, are not very important? It is because they do not provide edible. That is why people continue to degrading mangroves, seagrasses and corals. For an economy like Mauritius, I am surprised that they are fighting to protect corals, yet they spend so much on tourism. Unless the government also mainstream conservation with the development agenda. NDCs look at the holistic in the transport, forestry, energy and other sectors. If the company can commit, we want to meet our commitments. For example, the agriculture and forestry sector, they commit to invest. In Africa, we have very rich resources, but we rely on donors because we do not understand the link between what we have and what we need. Looking in the region, Mozambique has committed to replant 5000 hectares of mangroves, but the question is how they spell out in a bigger picture. When they plant 5000 hectares of mangroves, how will this be beneficial to fisheries, to shore protection. The only way to overcome is through education and awareness. We tend to talk among ourselves, as scientists. We need to have meeting whereby we bring together various stakeholders such as politicians, community leader and so on to tell them about the enormous and precious resources that they can use to protect their future but which they are instead destroying because of their shorts-sightedness.

Dominique Benzaken: In terms of embedding cost of restoration to a broader blue infrastructure project. It is quite important, but you can also link it to revenue streams, tourism, and fisheries as well because their restoration will get a number of benefits that will flow to particular economic activity. So, revenue flow will be there but in an integrated project, you can actually demonstrate the value of coastal restoration, which might be driven by a conservation mindset initially but at the end, it will be a of bigger sustainable blue economy approach and when we look at revenue flow, there is quite to get from tourism or fisheries but there are also the savings that you make for more efficient coastal protection for example. So, it is just a matter of thinking how to structure projects.

Seychelles: To get insurance in carbon markets, for instance if there is a fire or natural disasters that come through your mangrove area, what should the community do and how they do they handle the situation given that mangroves are the primary source of income in that area. In Seychelles, there are a lot of problems with sea level rise impacting on coastal areas, which are often flooded or having sand wash away. There are investigation to having the coral reefs restored through the use of hard engineering structures, with coral re-growing on these engineered structures. How do you go about financing such type of projects? Government may not be willing to despite that there are benefits. How can we get funding for that project? How can we map seagrasses and how can we get finance for that?

Torsten Thiele: to put that in context, less than 20% of the coast are insured around the developing world. This is a huge opportunity for the insurance industry to come up with more products. James can explain how specifically you can insure carbon concession but from my point of view it is just like any other business. Anything can be insured if the right context of insurance is in place, if the transaction cost are reduced through smart insurance type of structure. This is what we have explained to the insurance industry and this is why we launched the Ocean Risk with the insurance industry and there is a lot of discussion around reef insurance. For the example, on the Mexican coast, it gets into quite a lot of complexity around how this would reduce the potential premium that someone would pay but that is not the argument I am making but the complex argument around the benefits and how the insurance company will calculate the benefits. Insurance is a commercial activity that makes sense in any kind of context and that is the real growth. It sets the risks and put prices onto that risk and that price information is hugely determined by the economic decision because the insurance will tell us that this house will be flooded 100% certain in the next five years and the insurance will cost you huge amount of money but that is the best indication that it is not a place where our house should be but instead a great place for mud flat or seagrass bed or for mangrove restoration. You will certainly see the opportunity cost changes and all of a sudden, an area that because it is a flat plane and it is at risk, has no longer traditional economic value but it has alternative economic value in this understanding of this nature-based part. The discussion around blue infrastructure allows us to think more creatively about us. For example, we plant a lot of wind plant on the sea floor. If we look at the economics of offshore winds, it is quite expensive to build a wind farm offshore. It is still viable because the wind characteristics are quite stronger, but what we have discovered is that if you can think of additional benefits you can actually improve the economy of the wind farm. We were saying to them how about using the hard

structure to put an oyster bed. In Seychelles' context, if you need hard structure, an offshore wind infrastructure may be the place where some coral rebuilding could make sense. Thinking about the natural solutions. I would prefer the corals to come back naturally but where you do need the physical hard infrastructure, think about how it can be linked without the activities that you need to plan in any case. The thinking forward are important and when you see the opportunities, obviously the challenges are sea level rise but try to see the opportunities. The strong argument from nature-based solution is this type of change. Mangroves can move with sea level rise.

Dominique Benzaken: There is an issue of coastal planning and regulation. For example, in Seychelles, there is a regulatory issue that need to be taken into account. From insurance point of view, Seychelles will have trouble in getting insurance if you do not have in place proper standards and you need to ensure that the regulations and the policy are there. There are examples, where there is an insurance mechanism for fisheries in the Caribbean, but it is conditional to have in place a fisheries management. There is actually conditions that can be put into the insurance instrument as well.

James Kairo: For the mangrove areas, when we are dealing with the natural system where human is the driver. Some insurance talks about the risk and how to manage the risk. Regarding seagrasses, apart from replicating to other sites, we want to expand seagrass bed under the Blue Forest project because they are helping us to think beyond mangroves because for most the carbon, these systems work together. There is more activity in seagrasses so the approach to it is to encourage the community to establish locally marine managed areas which are managed by the people, but the focus should be on fisheries. When they can regulate their fishing activities and they are using the right gear, the seagrass will come, and when the seagrass cover come, that will be an incentive. Most of the benefits are non-carbon based but you will need to look at the benefits of the seagrasses, not in terms of blue carbon, but if you can have full securities through fisheries, you can have several activities being enhanced. Our next project will be to expand Mikoko Pamoja to include seagrases.

Leah Glass: Insurance is very important. There is the risk that protects investors, but currently there is not any insurance mechanism for the communities and project participants. Regarding the aspect of sea level rise, some projects that are insured, do you account for that in your project accounting? Particularly in some areas which are facing high level of sea level rise, the mangroves and seagrasses are moved inland.

Andy Steven: You can briefly outline what the alliance is doing with respect to nature-based activities.

Torsten Thiele: Two main arguments that we have developed for the insurance. To think of the ocean in the ocean systems and the changes in ocean risk, are so relevant, whereas the values sit on coastal real states. They are making much more informed efforts now to get that sort of information. The insurance are the best informed to talk about this because they protects storms and hurricanes and there are lots of insurance based on that. The second argument is to drive that into information and products in the communities and that have been in the past very must around the cost of delivering the insurance product. The arguments that we are making is like

mobile phones. I remember financing mobile phones in Asia and Africa and the initial challenge was the subscription was expensive and how to get that. But when we broke that further down, now mobile phones coverage are essentially pretty much everywhere. So, if you can deliver the insurance products in the way we delivered mobile phone credits it is a way to bring it in a completely different pricing framework and a country like Kenya has been very elevated around using mobile phones as an infrastructure for banking and so on. Now insurance needs to do the same thing. So, the ocean risk and resilience action alliance is really an attempt to get more insurance companies to engage with these processes. It got launched as a consequence of the first summit and supported by the G7 and it is now a broader alliance and has the implementation partners. So, it works with others beyond the insurance world to have this dialogue on new products around. Regarding the example that I talked about is more complex, for example can you insure a natural infrastructure and the point is in the context of particular disaster kind of situation, how do you make a payoff for a natural insurance from that mechanism rather than assessing the impacts of events, which is the traditional ways to get somebody to check for various components. So, you moved to the process where all that need to be known is an easily measurable variable like storm intensity. So how can I know if a category 6 is pay out and the amount of the payment is also pre-fixed. You can pay out not only to private commercial companies, but to different bodies like government, regional operator. The next context that means if you have that storm, the government immediately gets the payment that it can use for instance to support fishermen fishing in that area. Thus, you get real engagement. A fund has been set-up to invest in insurance company and their focus is for example to invest in an insurance in Africa that deliver this type of local insurance products for sustainability. Resilience is relevant because the concept of resilience and risk are concept for the people from that world are very familiar.

Shaheena Nojib-Jahangeer: Regarding Dominique's presentation on what IORA can do, there is a need to identify synergies and what can be done at regional level to take forward the blue carbon synergies that have been identified so far. One proposal would be that the outcomes of this think-tank be presented to the IORA Working Group on the Blue Economy (WGBE), which already has a Work Plan with specific projects. The Working Group could identify synergies and propose regional projects. That would also be an opportunity for Member States, which are interested in taking the leading on blue carbon to express interest.

Aris Wanjaya: James, can you elaborate more on the monitoring system of your project and how you raised the first investment for the project before transforming it into common project. Dominique, you mentioned about the international institutions. Now my organisation is helping to get a green farm and one of the obstacles is to get accredited partners. How do see the importance of extra party that, maybe they are already partnering with government, or partner with some particular jurisdiction but what happens if the jurisdiction do not have accredited partners? I have also worked with some impact investment and one of their rigid requirements is the environmental and social impacts. Before they need to see of the project can provide environmental and social impacts. How do you see this application into bonds?

Torsten Thiele: To answer the last part of the question. Environmental and social impacts are key and one of the tools that we have developed is the Impact Assessment Tool for the Indian

Ocean Commission (IOC) and that covers those blue space and you can check the website on www.bluenaturalcapital.org. We provide technical guidelines on blue bonds, which can help you to go through the process of the steps that you need to put in place. The accreditation process is a key and there has been much progress made to have more parties involved and be it accredited IOC, they are not just the big financial institutions and I think that this is a way forward to find these bonds.

James Kairo: On monitoring system I am raising the initial investment. Dominique talked about the Blue bond, it has to be aligned with the Environmental, Social, and Governance (ESG). In a carbon project, a sustainable one has to satisfy the CCB. There should be climate, community and biodiversity. So, in your monitoring, you need to monitor what is the carbon benefit, the biodiversity and community benefits. This should be done annually for you to meet the specification of the signed document. Mikoko Pamoja has a monitoring plan for biodiversity, community and social benefits. From a science-based institution in a marine and fisheries institute, we apply for funds to develop carbon project and the initial funding came from ESPA to develop carbon finance project. We were able to get about 200,000 pounds along with funding from other banks to develop Mikoko Pamoja. After that we got a lot of interest to expand, we need the Blue Forest and this one was an output of a research project. If there are prospects from the blue carbon project, you need the initial finance and before the initial financing, you need the building block for the project to be sustainable. For Mikoko Pamoja, the building blocks are the government is willing, the community is supportive, the science is right, and we have the international network for blue carbon. Some people concentrate on science and what they end up doing is having a carbon stock and people do not care about the amount of stock if the stock is not moving them forward. The Government and the financers are always willing if you have you with good idea. Science is here with the IPCC and the Blue Carbon Initiative and I cannot see any problem with science, but the major challenge is the community. The community is very dynamic and whoever is working on blue carbon project, you always have to face that challenge. Science will always be there because they always get interest from people but the community, if you do not meet their basic needs, which is food, security and livelihood, and you do not address that then you have to forget about blue carbon.

Dominique Benzaken: I presented on readiness, which is looking at what we need to do to be able to develop or raise a bond or look at any donors. It is all these about preparatory and facilitate developing the right type of financial instrument for what you need. This is really critical and important to do that. The GCF has a readiness to help countries to actually get to that point where they are ready to look at larger financial opportunities.

Andy Steven: We have not talked about the role of governance in enabling the conditions around investment, blue infrastructure and its translation to the communities. What are the key things that government should be doing around enabling conditions in connection between financing and on the ground restoration?

Dominique Benzaken: Government has got a huge role in helping the enabling environment. Government sets laws and regulation and that is the bottom line and beyond that you will get financing mechanisms and all that. There is also government ways like taxes and when you

look at return on investment, the government is the mechanism for which you can generate returns and fees. It can set rules for private sectors and investors. It is not just private sectors or government or third parties, but it is a partnership across.

James Kairo: About the regulation, when we talk about blue bond, many countries will have to do that. If you establish a marine protected area, in some country it is really political because it is very sensitive, and people depend on the sea. They can do that through MSP, through regional awareness. They need to set the platform and the problem is that the companies do not understand. So, we need to support the government. Most of the countries in the region has integrated marine sector, NDCs. In the high-level panel during the Ocean Conference in Spain, one of the highlights is ocean-based climate action and we are looking at how can we as government use the ocean in climate mitigation and adaptation. It is very difficult because everybody wants to get their money back but not everything gives you the money immediately. The government is working to integrate the marine sectors in its plan

Torsten Thiele: Each country needs to make sure that their marine component is part of your NDCs because that allows us to define these blue carbon ecosystems as a valuable component. All your government are part of financial institutions and using that existing expertise of the relevant financial institutions, multilaterals that have already worked on those past strategies, your government will be able to make sure that is activated.

Main outcomes/ Recommendations

- To encourage shared regional priorities for investment among IORA Member States;
- To promote sharing of expertise, knowledge, tools, capacity building;
- To promote/communicate best practice financing/pilot projects;
- To strengthen regional cooperation by collaborating with regional institutions in the IORA region; and
- To encourage trans-boundary / common interest projects; policy harmonisation

1.4.5 THEME 4: DE-RISKING AND BLENDED FINANCE

Moderator: Doug Trappett, Department of Foreign Affairs & Trade, Australia

1.4.5.1 Leveraging private finance through public financial resources for blue carbon development by Bilal Anwar, Commonwealth Climate Finance Access Hub

Mr Anwar started his presentation by mentioning that Blue carbon has a climate change component and mentioned that this subject is already well grounded in International Climate Policy, including the Kyoto Protocol, Paris Agreement, Climate Change Convention, among others. He also stated that Blue carbon is also included in the Nationally Determined Contributions (NDCs), making reference to the NDC Registry. He pointed out the financing challenge, including low scalability potential, economic value of conserving coastal ecosystems are not fully realised and potential carbon value often not sufficiently lucrative, among others. He mentioned that public finance can mitigate risks for Blue carbon development to a certain

extent through its leveraging power and explained about leveraging private finance/investment and how it is measured. Regarding the policy incentives, he mentioned that Private Sector investments into Blue Carbon initiatives is highly policy dependent providing the following: clarity, stability and Predictability; right risks-rewards ratios; and availability of financial incentives and instruments. He listed the risk mitigation and reduction tools, including loan guarantees, policy insurance, foreign exchange liquidity facilities, pledge funds and public-private partnerships. He provided detailed information on the role of climate and carbon finance and highlighted the need for: the Incorporation of Blue Carbon values into national sustainable development strategies (SDG 14); provision of capacity enhancement and institutional support for national data collection, reference emissions levels and methodologies for quantification; development of standardised methodologies, standards and protocols and their implementation at the national level; development of global and regional carbon markets and integration of Blue Carbon products; and preparation and promotion of demonstration Blue Carbon and marine ecosystem protection based projects. He concluded his presentation by providing suggestions and recommendations for the way forward. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1bkJRvWhIuSDUtgbdjyBF3J-hTvxIta5p/view?usp=sharing

1.4.5.2 Trust funds and the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) by Stuart Laing, SeyCCAT Finance Committee and University of Seychelles

Mr Laing started his presentation by providing an overview on Seychelles, including the establishment of SeyCCAT, the structure of its funds, and its operational structure and projects. He mentioned that the Nature Conservancy and Government of Seychelles identified an opportunity for Seychelles to decrease its debt burden and identified impact investors for loan capital and philanthropists to provide grant funds but in return, Seychelles was obligated to fulfil certain commitments. These include: 30% of waters in protected areas (400,000 Sq. Km); 15% of waters in no-take zones (200,000 Sq. Km); adopt the recently completed Marine Spatial Plan to guide updating of coastal zone management/fisheries/marine policies. He listed the outcomes resulting from the loan and grants received by Seychelles and provided detailed information on the SeyCCAT project and the Seychelles Debt Swap. He further explained about the SeyCCAT's model in terms of the Debt Swap and Blue Bond. He highlighted the Blue Funds and Strategic Objectives and pointed out a few projects funded by SeyCCAT. He mentioned that other funding streams are being explored and referred to a survey that was carried out regarding the same. He informed the meeting about the Ocean and Climate Nexus, which is a new project by SeyCCAT in partnership with Pew Charitable Trust, which will include blue carbon assessments of marine habitats, focusing predominantly on seagrass. Data collected during this project will inform Seychelles' nationally determined contribution (NDC) of 2020 and Theme 4 panel discussion, questions from the floor. A copy of the full presentation can be accessed at: https://drive.google.com/file/d/1IXpzRjO7N_yZuURAHoGjEEyIsaDREsvE/view?usp=sharing

1.4.5.3 Theme 4 panel discussion, with questions from the floor

Panel members: Bilal Anwar, Stuart Laing
Moderator: Doug Trappett, Department of Foreign Affairs & Trade, Australia

Patrick Karani: SeyCCAT is subject to either domestic or international regulatory mechanisms. Given that we are thinking of domestic financial institutions, what happens is that SeyCCAT is going to crowd out since it is very favourable in terms of providing these funding with high returns. Even if you get a grant of USD 5 million to leverage revenue, you will still get benefits. The financial mechanism which is favourable to SeyCCAT may not come out of the US domestic financial regulatory mechanism. Is SeyCCAT regulated financially in terms of financial standards?

Stuart Laing: SeyCCAT is able to distribute to a large grant of SCR 1 million over a two-year period. I do not think it is going to be crowding out because Seychelles is dividing the grants and SeyCCAT and the Seychelles Development Bank are the administering bodies. Seychelles Development Bank is going to have larger loans, with interest and so on. SeyCCAT's Blue Grants Fund is there for individuals to test their projects, with Seychelles Development Bankas a follow-up type of funding.

Bilal Anwar: I do not think it can evolve at the level of crowding out other actors because as far as the mandate is clearly drafted and investment of loan, grant and the types of funding are, and they are provided in the original mandate, that will provide opportunities to the developers, NGOs and other institutions to look at the benefits of it. The projects and activities under SeyCCAT are conventional and traditional, which are not going to be supported by other banking institutions or other institutions, but I think these projects are implementable once the financial and capacity building gaps is bridged up. It gives encouragement to other institutions.

Thomas Krimmel: Regarding SeyCCAT, I do not understand how a low funding will function, unless the governments gives loans and grants for these initiatives because this climate change guide for the population, who is paying that loan if not government or mapping of corals or fish or fisheries restriction zones, I do not know who would pay for that as a private sector company unless this is purely government. Maybe you can provide more explanation on this. Is SeyCCAT a private sector companies or government initiatives? If it is a government initiative, government gives grants for climate change guide for the population or for the mapping of corals and fisheries and so on. So, who are the projects proponents, who select these and who is paying the loans?

Stuart Laing: The proponents are any Seychellois - NGO, individual, and anybody with an idea, they apply to SeyCCAT. There is a grants call and there is a grant committee to review the applications. From that perspective, it is individual. So, for the projects that they undertake, the government should be funding many themselves, but they do not have to because these projects are being done by individuals and the government is benefiting from that. In terms of paying back the loan, government is paying SeyCCAT, who is paying back The Nature

Conservancy. Government is paying a lot for the 10 years and they can make additional interest on the loan when they are paying back.

Doug Trappett: Stuart, in your presentation you took us back to where Seychelles was, in terms of its economy, in 2008 and you said that there was a structuring package. These things are usually politically controversial and citizens get very anxious about it. And then, with a USD15 million loan lifelong, to what extent was that embraced by Seychellois or not?

Stuart Laing: I would not be able to talk too much on that because I have been in Seychelles for a short period of time. The re-structuring took place in 2008 and graduated to having a market-based company around 2013 and the Debt-for-Nature swap started to be integrated in 2014-2015. I do not know what the status was like in the country and how they felt about it.

Seychelles: We need to make sure that communication to the population is made correctly. Once people understand what is happening, it is easy to embrace what is going on. SeyCCAT is turning 5 years old and the main thing is that only Seychellois can apply for the blue bond fund but they can work with foreigners or expats along the way. SeyCCAT is one of its kind in the world and it has done amazing things both internationally and for the country and if anybody would want more information on SeyCCAT, you can check its website on www.seyccat.org, where you can find our objectives. Each project that applies for the blue bond funds has to include these objectives in their projects. The website also contains information on all the projects that have been funded. If there is anything similar that you want to replicate, you will have all the details of the projects, including its funding, the aims and objectives of the project, and so on.

Doug Trappett: Dominique recommended what IORA can do in her presentation. Bilal, do you have any comment?

Bilal Anwar: IORA can do lots of things once they partner with other organisations in the region. IORA can work only within its mandate but can look into climate change and blue carbon projects. The next stage is for IORA to provide technical assistance to countries in terms of translating their climate action into the countries mandated and commercially viable activities. This is what we are doing at the Commonwealth and many countries of the Commonwealth are IORA countries. There are certainly a potential because IORA has expertise, but Commonwealth has its own expertise as well. I think collaborating with each other help not only for projects but for the countries as well. CSIRO is doing a wonderful work in terms of this development and that is being transmitted to some static policymaking and the countries have identified the concrete actions and including the same into policies, NDCs and so on.

Main outcomes/ Recommendations

- To explore expanding the scope of mitigation activities through inclusion of Blue Carbon into NDCs – inclusion into revised NDCs;
- To develop standardised approaches and methodologies for quantification, monitoring, reporting and verification;

- To expand the research agenda and scientific findings for different methodological and technical aspects of CEMs;
- To improve accessibility of scientific data, knowledge and findings to the end-users.

1.4.6 CLOSING PLENARY: THE BUSINESS CASE FOR BLUE CARBON BY ANDY STEVEN, CSIRO OCEANS & ATMOSPHERE

Andy summarised the 2-days meeting. He pointed out the main points that were discussed and the key messages and opportunities. He mentioned that we did not only talk about blue carbon but also about blue carbon ecosystems, which need to be framed within the evolving Blue Economy Paradigm. He mentioned that the meeting talked much more than just financing. Financing is part of the process but there is also community engagement, project management and verification processes, which are important. He highlighted the importance of private and multilateral funding for businesses and nature-based solutions. One of the challenges is to have projects of right scale and delivery to investors in a form that meets financing criteria. He stated that the key opportunity that came out of that meeting is that there is great work in blue carbon ecosystems around the Indian Ocean and there may be opportunity for IORA to lead the world in terms of blue carbon ecosystems. The meeting also discussed about: blue financing; standards and verification; project design and delivery; and community benefits. The links among these themes were made. He briefed the meeting about the development of an IORA Blue Financing White (Discussion) Paper, including its structure, processes and audience. A copy of his presentation can be accessed at: https://drive.google.com/file/d/1Nh6VS08LEwXDnX_tNeLPJqreYFcTneGT/view?usp=sharing

1.4.7 GROUP DISCUSSION AND THE WAYFORWARD:

Andy Steven informed the participants that the group discussion is aimed at identifying the challenges and opportunities in blue carbon financing. Participants were also requested to provide recommendations on the way forward and inputs to be included in a proposed whitepaper. The 20 minute discussion session comprised of four table-based groups, with facilitators drawn from presenters/ speakers/ experts. At the end of each session, one representative from each group was requested to report back on the main outcomes that were discussed. The guiding questions were as follows:

- Identify Challenges and Opportunities for Blue Carbon Ecosystems in Member States
- Recommended Actions / Activities to IORA for regional-level support for Blue carbon ecosystem (BCE)
- What should be included in White Papers?

1.4.8 CHALLENGES, OPPORTUNITIES AND RECOMMENDATIONS:

1.4.8.1 Challenges:

- Knowhow and data
- Financing structures
- Institutional strengths

- Demographic pressures on ecosystems
- Capacity building needs
- There is existing expertise, but more is required
- Governance structure (Madagascar)
- Size/scope for blue carbon initiatives
- Need for further research
- Data for decision-makers
- Data availability for BCE
- Population and economic growth
- Climate change vulnerabilities
- Knowledge-based tools (includes communication and learning, technical assistance, capacity building)
- Not having required scientific knowledge for policy development
- Policy and financing
- Political will
- Exploitation, conversion and conversation of blue carbon ecosystems
- High dependency BCE
- BCE expertise
- BCE ownership/custodianship
- Mobilise provincial/local government
- Community support

1.4.8.2 Opportunities:

- Networking at national and international level, including at IORA level
- Availability of international funds (for e.g. GCF, etc)
- Opportunity to learn from best practices, for example from Seychelles and Kenya
- Positive political will / agenda- IORA could drive political agenda to unlock bureaucracy towards financing
- IORA carbon markets
- Preservation of carbon ecosystems and explore funding potential for ecosystem services maintenance and enhancement
- Awareness of benefits
- Poverty alleviation
- BCE in developmental agenda
- Existing BCE projects/ pilot projects
- IPBC
- Restoration / blue carbon development and implementation plan 2014-2024 (Indonesia)
- Community networks

1.4.8.3 Recommendations/ Activities to IORA for regional-level support for Blue Carbon Ecosystem (BCE)

- Matchmaking between projects and financial institutions
- Link SME finance with BCE projects

- IORA policy for fund from flights for BCE
- Have national think tanks for national projects
- IORA to commission science/ research for BCE
- Catalyse learning on BCE examples
- Coordinate regional research
- Coordinate regional matchmaking between institutions/ entities
- Organise capacity building opportunities/training for technical expertise
- Online Knowledge Hub platform that will list development / projects within blue carbon to allow replication in other Member States
- Develop sustainable mechanisms to comply NDCs and explore the possibility of adopting relevant NDC where applicable
- Develop common methodologies to understand carbon stock potential in the IORA region
- Develop and harmonise legislation regionally to address regional realities
- Develop technical and financial assistance mechanism(s) for IORA Member States
- Map status and condition of BCE
- Identify common interest of Member States
- IORA guidance/ IPBC guidance and common methodology for blue carbon assessment
- Share best practices/ knowledge (technical, policy and resource mobilisation)
- IORA, in collaboration with Dialogue Partners, to promote pilot project to support BCE in the blue economy
- IORA Member States to advocate BCE in international fora
- Bi-monthly or quarterly newsletter/mailing/online portal list with updates on financing/ finance projects in IORA
- Develop best practices for seagrass exploration/ mapping and share lesson-learnt
- Have explanatory document or collection of options for financing and the relevant target scale project
- To develop market mechanisms, research is needed to inform policy or that will lead to policy articulation and formulation, which will then increase access to technology.

1.4.8.4 <u>What should be included in the whitepaper</u>

- Turn actions into recommendations
- Gap analysis for policies
- Discuss full value chain of blue carbon
- Climate change impact assessment on BCE
- Identify external funding sources
- Encourage start-ups for BCE
- Regional cooperation
- Sharing of resources
- Funding opportunities
- Extent of BCE in the region/ threats/ value
- BCE value in regional economy
- Current work and role of BCE in the region

- Consensus position – blue carbon in NDCs
- Community participation and engagement
- Financing BCE needs

1.5 ANNEXURES

1.5.1 LIST OF PARTICIPANTS

Member States	Name of Participants	Designation	Ministries/ Institutions	Email	Phone
Australia	1. Dr Mat Vanderklift	Director	IORA Blue Carbon Hub, CSIRO	mat.vanderklift@csiro.au	
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	4. Mr Doug Trappett	Director, Indian Ocean	Department of Foreign Affairs and Trade	doug.trappett@dfat.gov.au	
	5. H.E Mrs Jenny Dee	Australian High Commissioner	AHC – DFAT	ahc.portlouis@dfat.gov.au	
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1.5.2 ANNEXURE B: AGENDA

IORA Blue Carbon Hub inaugural think-tank
Blue carbon finance

25 – 26 February 2020 | Preskil Island Resort, Mauritius

Room : La Croix du Sud

Agenda

	DAY 1 – 25 February 2020
09:00	Arrival and registration
09:30	Opening statement: HE Dr Nomvuyo N Nokwe, Secretary General, Indian Ocean Rim Association
09:40	Welcoming statement: HE Jenny Dee, High Commissioner to Mauritius
09:55	Welcoming statement: Hon Mr Sudheer Maudhoo, Minister of Blue Economy, Marine Resources, Fisheries and Shipping
10:10	Mat Vanderklift, IORA Blue Carbon Hub *Why do we need blue carbon finance?*
10:40	Tea break
11:10	Opening plenary: Torsten Thiele, London School of Economics *Sustainable finance for the blue economy*
	Theme 1: Payments for ecosystem services and carbon markets
11:50	Steven Lutz, Grid Arendal *The Blue Forests economy*
12:10	Leah Glass and Lalao Aigrette, Blue Ventures *Voluntary carbon markets: Madagascar*
12:50	Lunch
14:00	*Theme 1 panel discussion, with questions from the floor* Moderator: Mat Vanderklift Panel members: Leah Glass, Lalao Aigrette, James Kairo, Steven Lutz
	Theme 2: From carbon markets to sustainable trade
15:00	Amy Schmid, Verra *Linking carbon credits with environmental and social benefits*
15:20	Paolo Bifani, Blue BioTrade *Blue BioTrade and the challenge of marine ecosystem services valuation*
15:40	Aris Wanjaya: Sustainable Trade Initiative *Sustainable mangrove business models: examples from West Kalimantan, Indonesia*
16:00	*Theme 2 panel discussion, with questions from the floor* Moderator: Andreas Hutahaean Panel members: Amy Schmid, Paolo Bifani, Aris Wanjaya
17:00	Close

18:30	Dinner: Rendez Vous Restaurant

	DAY 2 – 26 February 2020
09:00	Arrival
09:10	Recap: Mat Vanderklift
09:35	A touch of Mauritian blue carbon Shashi Chummun, EcoSud *Blue Bay Marine Park*
09.45	James Kairo, Kenya Marine and Fisheries Research Institute *Potential of blue carbon as a sustainable financing mechanism for mangrove conservation in the IORA region*
	Theme 3: Bonds
10.15	Dominique Benzaken, Australian National Centre for Ocean Resources and Security *Blue bonds*
10:45	Tea break
11:10	*Theme 3 panel discussion, with questions from the floor* Moderator: Andy Steven Panel members: Torsten Thiele, Dominique Benzaken
12:00	Lunch
13:30	Theme 4: De-risking and blended finance
13:30	Bilal Anwar – Commonwealth Climate Finance Access Hub *Leveraging private finance through public financial resources for blue carbon development*
14:00	Stuart Laing *A case study: Seychelles' Conservation and Climate Adaptation Trust*
14:15	Theme 4 panel discussion, questions from the floor. Moderator: Doug Trappett, Department of Foreign Affairs & Trade, Australia Panel members: Bilal Anwar, Stuart Laing
15:10	Tea break
15:40	Closing plenary: Andy Steven, CSIRO Oceans & Atmosphere *The business case for blue carbon*
16:00	Group Discussion and the way forward
16:30	Close

1.5.3 ANNEXURE C: OPENING STATEMENT BY HE DR NOMVUYO N NOKWE, SECRETARY

Remarks by

H. E. Ambassador Dr Nomvuyo N. Nokwe, Secretary General of IORA

Secretary General of Indian Ocean Rim Association

For

IORA Blue Carbon Hub 'Think Tank' on Blue carbon Finance, 25-26 February 2020, Mauritius.

Hon Mr Sudheer Maudhoo, Minister of Blue Economy, Marine Resources, Fisheries and Shipping
H. E. Ms Jenny Dee, Australian High Commissioner to Mauritius and Seychelles and Ambassador to Madagascar and Union of Comoros

Excellencies, Distinguished Delegates, Ladies and Gentlemen,

Good morning!

First of all, allow me to convey my deep appreciation and extend a warm welcome to all the distinguished invitees present here today at the IORA Indian Ocean Blue Carbon Hub inaugural think-tank, on Blue Carbon Finance jointly organised by the Indian Ocean Rim Association (IORA) and the Commonwealth Scientific and Industrial Research Organization (CSIRO). I sincerely hope that this meeting will explore ways of deepening our collaboration to enhance knowledge on Blue carbon and explore ways in financing its development.

Ladies and Gentlemen,
The IORA Indian Ocean carbon Hub was announced by the Australia's Foreign Minister at the Third IORA Blue Economy Ministerial Conference in September 2019 in Dhaka, Bangladesh. This hub aims at building knowledge and capacity to protect and restore blue carbon ecosystems throughout the Indian Ocean. In so doing, this would enhance livelihoods, reduce risks from coastal hazards, and help mitigate climate change. This Blue carbon finance think tank is the first meeting of a set of short 'think tank' meetings that will target the most promising areas for accelerated action.

As you are aware, mangrove forests, seagrass meadows and salt marshes have long benefited coastal communities and fisheries, and in recent years have been recognized internationally for their

significant capacity to sequester and store carbon, that is 'blue carbon'. In fact, the rates at which they sequester carbon surpasses those of tropical forests. These Blue carbon ecosystems play an important role in contributing to food security, supporting economic self-sufficiency and protection of coastal communities and livelihoods, for example, through buffering the effects of storms and tsunamis.

However, despite of their crucial role, these ecosystems are among the most threatened ecosystems on Earth and are highly at risk due to conversions, industry, aquaculture and infrastructure development, which can in turn lead to the release of huge amounts of coastal blue carbon in the atmosphere contributing to the effect of global warming and climate change. Financing mechanisms, emission markets and appropriate policy framework can be a solution to this problem and can help in reversing this loss, but these are still in an early phase of development. Therefore, I urge Member States to explore existing or new funding mechanisms that would make carbon in coastal habitats eligible for payments, as well as make blue carbon ecosystems a good source of income, especially for developing countries and Small Island Developing States.

I wish to stress and emphasise on the need of Member States to focus on the restoration and protection of these Blue carbon ecosystems because of the high amounts of carbon they store and their high rates of carbon sequestration. In addition, the restoration and protection of these ecosystems has high potential to contribute to emission reduction commitments, which might provide a potential avenue to finance those activities.

Ladies and Gentlemen,

At the level of the IORA, the establishment of the IORA Indian Ocean Blue Carbon Hub, which fulfils the role of an IORA Centre of Excellence, aims to build knowledge and capacity for protecting and restoring blue carbon ecosystems throughout IORA Member States, in a way that enhances livelihoods, reduces risks to marine biodiversity and coastal protection, and helps mitigate climate change through sequestering of carbon. We had a first Indian Ocean Blue Carbon Symposium in March 2018 in Perth, Australia and since then, this topic is gaining increasing interest from IORA Member States. As a follow-up of this first initiative, Madagascar hosted a Workshop on "Improving Knowledge For Research On Blue Carbon In The Western Indian Ocean" last year. I understand that the Blue carbon Hub will undertake a series of meeting related to Blue carbon with the current one focusing on Blue carbon finance, which is a topic that is being addressed for the first time in IORA. I also wish to mention that Blue carbon is also included in the Work Plan of the Working Group

on the Blue Economy, and with the help and assistance of CSIRO and the Blue carbon Hub, this topic will be taken forward in the future.

I am confident that the IORA Blue carbon Hub will enhance Member States' capacities, knowledge and technical knowhow on this topic. I urge Member States to explore financial mechanisms, appropriate policy framework that are needed to facilitate relevant actions, as well as to explore opportunities for investment in blue carbon.

Ladies and Gentlemen,

I sincerely hope that this two-day conference will result in concrete recommendations as the way forward to further enhance Member States' capacities and experience on Blue carbon and its financial mechanisms. I also wish to emphasise the need for action-oriented outcomes for the future development of the Indian Ocean region.

Excellencies, Ladies and Gentlemen,

I again wish to express my sincere appreciation to your participation to this meeting, and I wish you a fruitful deliberation.

I Thank You.

1.5.4 ANNEXURE D: WELCOMING STATEMENT BY HE JENNY DEE, HIGH COMMISSIONER TO MAURITIUS

IORA Blue Carbon Inaugural think tank Blue Carbon Finance
25 February 2020
Preskil Island Resort, Mauritius
Room: La Croix du Sud

Honourable Mr Sudheer Maudhoo, Minister for Blue Economy, Marine Resources, Fisheries and Shipping
Her Excellency, Dr Nomvuyo N Nokwe, Secretary General, IORA
Dr Andy Steven, Research Director, Coasts, Oceans and Atmosphere, CSIRO
Dr Mat Vanderklift, Indian Ocean Blue Carbon HUB Director
Bilal Anwar, Commonwealth Finance Access Hub
Ladies and Gentlemen

. I am very pleased to be here today, to be representing the Government of Australia at this very important first event of the IORA Blue Carbon Hub Inaugural think tank on Blue Carbon finance.

. 'Can humans use the ocean as a tool for lifting people out of poverty, all the while protecting its valuable ecosystems' was the question raised at the first-ever Sustainable Blue Economy Conference, held in Kenya in November 2018. In reaction, that conference saw the creation of the High Level Panel for a sustainable Ocean Economy – bringing together various leaders from across the world – including the Australian Prime Minister Scott Morrison.

. The Panel is focusing on the protection of, production from, and investment in the Ocean, and will demonstrate how transitioning to a Sustainable Ocean Economy is critical to achieving the Sustainable Development Goals related to hunger, health, jobs, energy, sustainable communities and global partnerships.

. The urgency of the Panel's work is driven by the knowledge that failure to take rapid action on marine pollution, overfishing, climate change and habitat loss will lead to failure to realize the SDG vision of a peaceful, prosperous, sustainable future.

. Australia has been active in recent years promoting the Blue Economy and, more recently, the protection of Blue Carbon (encompassing mangroves, sea grasses and tidal marshes) in the Indian Ocean.

. These issues are key concerns to the Australian Government who see the Blue Economy as one of the key priorities for development, especially for Island nations. The biodiversity

of our oceans is a significant resource, and our sustainable development is connected to the health of the oceans.

- A blue economy encompasses practices that bring economic and social benefits that are efficient, equitable and sustainable. It is said that world fisheries support 170 million jobs and more than 1.5 billion people rely on marine resources for their protein intake. Marine and coastal tourism, aquaculture and other uses of Marine Environments also provide livelihoods for millions of people across the globe.

- Australia's Prime Minister, Mr Scot Morrison said in his September 2019 speech to the United Nations General Assembly, Protecting our oceans is one of the world's more pressing environmental challenges.

  As an island continent, Australia has the world's third largest maritime jurisdiction, stretching from the great Southern Ocean to the vast Pacific and Indian oceans. Over 85 per cent of Australia's population lives within just 50 kilometers of the coast. Australia's Indigenous peoples have been linked to the land and sea for more than 65,000 years. Our oceans connect Australia with the world. Ninety nine per cent of Australia's trade by volume is carried by sea and by 2025, marine industries will contribute around $100 billion each year to our economy.

- In order to ensure a sustainable Blue Economy, Australia developed the National Marine Science Committee (NMSC), an advisory body to focus on promoting high quality marine science and growth of Australia's blue economy. NMSC provides a mechanism for co-ordination and information sharing between research institutions, universities, Australian Government departments, State/Territory Governments and the broader Australian marine science community.

- In 2015, the NMSC launched the National Marine Science Plan (2015-25) to Support Australia's Blue Economy.

- According to the Committee, by 2025 Australia's marine industries will contribute around $100 billion a year to our economy, with our ocean and coasts providing another $25 billion worth of ecosystem services, such as carbon dioxide absorption, nutrient cycling and coastal protection.

- This marine economy is projected to grow three times faster than Australia's gross domestic product over the next decade, more than doubling its 2012 contribution of $47.2 billion.

- As Australia is coming to understand the benefits of the blue economy so to are others. The UN Department of Economic and Social Affairs in 2017 said that global ocean

economic activity was estimated to be in the realm of USD $3–6 trillion, and fisheries and aquaculture contribute $US200 billion per year and about 260 million jobs to the global economy. This includes employment, ecosystem services provided by the ocean, and cultural services.

- The economic potential of the world's oceans is significant; countries and businesses are increasingly thinking about how to tap ocean resources for economic growth and investment.

- However, on the other hand, unchecked economic ocean activity poses a real threat to the ecological health of the world's oceans. And our oceans are increasingly under stress.

- Australia has been active in recent years promoting the Blue Economy and, more recently, the protection of Blue Carbon (encompassing mangroves, sea grasses and tidal marshes) in the Indian Ocean
  - since 2013 – when Australia announced the Blue Economy as a cross-cutting priority area of IORA – we have spent around $4 million on blue economy-related initiatives within IORA
  - more recently at the 3rd IORA Blue Economy ministerial conference in Dhaka in September, Minister Payne announced the establishment of the IORA-CSIRO Blue Carbon Hub in Perth, located within the Indian Ocean Marine Research Centre
    - the Hub is a $600,000 investment over 3 years, focusing on three main areas: Young Scientists; think tank seminars; and meeting data collection gaps within the region – I am proud to be a part of the hubs first activity –at the Blue Carbon Finance think tank here today.
    - this followed our hosting of an IORA Blue Carbon Symposium in Perth in March 2018 and the IORA Blue Carbon workshop in Tulear in May 2019.
  - more broadly, Australia has been a leader on blue carbon internationally, founding the International Partnership for Blue Carbon (IPBC) at COP21 in Paris.

- Protecting the marine environment and contributing to climate change mitigation has been a key focus of our efforts
  - but we have also been mindful that promoting the blue economy and blue carbon is a top priority of IORA member states, given the critical role of fisheries, reefs and tourism in the economies and livelihoods of all member states
  - in this sense, the blue economy and blue carbon are important building blocks for the broader strengthening of IORA and regional architecture.

- Australia sees that efforts in blue carbon in the Indian Ocean can be taken even further, by harnessing public and private finance, and ensuring that the Indian Ocean region and IORA assume a lead role globally in achieving this

- seems appropriate that IORA and the Indian Ocean region lead in this space, given that the Indian Ocean is estimated to be the home of 50 per cent of the world's blue carbon stocks

. We hope the think tank meeting will identify a definite path forward for how IORA member states can access public and private finance, and the challenges therein, and how Australia can help achieve this

. A blue economy is one which strikes the right balance between reaping the economic potential of our oceans with the need to safeguard their longer term health. A blue economy is one in which our ocean ecosystems bring economic and social benefits that are efficient, equitable and sustainable. To do this we recognize the importance of working with partners – it is after all the Ocean that links us all together, and in Australia, we recognise that we also need to be innovative in our thinking to tackle the challenges that lay ahead.

. We know that public/private finance can work, for example.

Innovation for the Blue Economy

. My Department, the Australian Government Department of Foreign Affairs and Trade through our 'innovationXchange' together with the CSIRO hosted an Innovation for the Blue Economy Workshop in August 2015 which assembled Blue Economy experts from around Australia to discuss challenges and barriers to economic growth in our oceans as well as uncover highly innovative ideas that promote sustainable development in the Blue Economy.

. Following the workshop, CSIRO and the Department of Foreign Affairs and Trade's innovationXchange ran a $3m Blue Economy Aquaculture Challenge. We received over 220 innovative ideas from more than 40 countries that uncovered 10 innovations that have potential to transform aquaculture practices.

. I am very pleased to say that one of the ten winners was Indian Ocean Trepang in Madagascar, which continues to be an excellent project. Indian Ocean Trepang grows, processes and sells sea cucumbers to consumers worldwide, using a unique, low-tech, environmentally-sound model that gives low-income fishermen access to a growing and lucrative global market. They also partner with local fishing villages, to return sea cucumber farming back to its natural spot, in the sea, and away from expensive facilities. I am pleased to say the innovation is going very well, and our Post continues to collaborate with IOT when we visit Madagascar.

Indian Ocean Region

. I am the High Commissioner to Mauritius and Seychelles, and the Australian Ambassador to Madagascar and Comoros. Thus I see the great value in working with regional organisations like IORA who can bring together so many nations.

. Countries within the Indian Ocean Rim region account for 30 per cent of the world's population. For these nations, especially the small island states, the blue economy offers the potential to address key developmental constraints, such as energy, food security and fisheries management in a sustainable manner.

- At a bilateral level we also warmly welcome under the Commonwealth that Australia, Belize and Mauritius are spearheading the protection and restoration of coral reefs by committing to the Blue Charter as a champion on reefs (with Mauritius and Belize as co-champions). The next meeting of the Blue Charter all champions is in Cyprus from 21-24 March. We note Dr Andy Steven, is the Australian delegate on the Blue Charter mangrove action group led by Sri Lanka, and will be at the Cyprus meeting

. As you may know, Australia is home to the Great Barrier Reef. Australia knows the GBR is a critical national asset, it protects Queensland's coastal infrastructure, supports 64,000 jobs and provides $6.4 billion a year to the economy. The Great Barrier Reef is the world's largest living structure and a global natural icon and we are committed to protecting it, including through the Reef 2050 Plan.

. We also know that innovation and science are key to future employment opportunities and will use these to find new tools and technologies to protect the reef. We also acknowledge the interconnectedness of blue carbon and coral reef health and we look forward to working with partners in this important area, for the benefits of not only our economies but also in addressing climate change.

. Australia's 2017 Foreign Policy White Paper recognised that the challenges posed by climate change will deepen over the next 10 years and with changing environmental conditions, rising temperatures and sea levels and increasingly frequent and severe weather events and natural disasters in many countries in Australia's region, and that small island states will be increasingly effected. That is why Australia is the largest provider of overseas development assistance to Small Island Developing States – the largest provider in the OECD at USD857 million (July 2017 figures).

. Australia also runs through our earmark aid program in Africa, our Australia Awards, and as part of the program: our short course awards. One of the Short Course Awards (last run in May 2019) involved the Australian National Centre for Ocean Resources and Security (ANCORS) of the University of Wollongong, to run a course on "Ocean management- sustainable fisheries governance" that included a component in Mauritius.

The International Partnership for Blue Carbon

. The International Partnership for Blue Carbon, launched by Australia in December 2015 at COP21, recognises the globally significant role of coastal blue carbon ecosystems (Blue Carbon is the carbon captured by the world's oceans). It seeks to protect and restore these ecosystems for climate change mitigation and adaptation through building awareness, sharing knowledge and accelerating practical action. There are 28 formal partners (including 10 governments).

. Partner countries of the IPBC are able to gain access to a wide network of researchers, and non-government organisation (NGO) and government experience to support blue carbon policy and activities

- Seychelles, Madagascar, UAE and Indonesia are members of ICRI and we encourage all IORA members to sign up to the Initiative. At ICRI's next meeting in Manado in April, CSIRO will be co-host a workshop on mangrove restoration together with Indonesia.

. In October 2017, the Australian Government announced almost half a million dollars in support for CSIRO to take forward blue carbon initiatives in the Indian Ocean region. This was complemented by the Australia Awards Fellowship program in 2017, which supported 11 fellows from Madagascar, Seychelles and Mauritius to go to Australia and build their understanding and knowledge of the blue economy (with a focus on blue carbon). Subsequently in March 2018, CSIRO with DFAT and DoEE, hosted a Blue Carbon Conference in Perth for Members and Dialogue Partners of the Indian Ocean Rim Association. This collaboration has been so successful that the Australian Government is now supporting the IORA Blue Carbon Hub, led by CSIRO scientists.

Commonwealth

. Australia, along with many of the countries represented here today, are members of the Commonwealth, and this is another Organisation we work with through the Commonwealth Climate Change Finance Access Hub, who play an important role in continuing to advocate for climate vulnerable states and help them untangle the red tape around climate financing, and in helping them make successful applications to the international funds that address climate change.

. I won't talk too much about the Access Hub, as Bilal will speak to you tomorrow. I would like to say though that Australia is proud to be providing funding to the HUB for their excellent work.

On that note, I would like to congratulate the Hub on its Blue Carbon Inaugural thing tank Blue Carbon Finance and I wish you a very successful Workshop.

Thank you

1.5.5 WELCOMING STATEMENT: HON MR SUDHEER MAUDHOO, MINISTER OF BLUE ECONOMY, MARINE RESOURCES, FISHERIES AND SHIPPING

Minister's Speech on IORA Blue Carbon Hub inaugural think-tank

Blue carbon finance

Ministry of Blue Economy, Marine Resources, Fisheries and Shipping

Her Exellency Dr Nomvuyo N Nokwe, Secretary General, Indian Ocean Rim Association
Her Excellency Ms. Jenny Dee, High Commissioner to Mauritius
Distinguished Guests,
Dear Participants,
Members of the press,
Ladies and Gentlemen

It gives me great pleasure to be amidst you this morning in the context of IORA Blue Carbon Hub inaugural think-tank meeting.

I would, at the very outset wish to thank the CISRO and IORA for hosting such an important workshop in our Country Mauritius.

This is indeed a laudable initiative given that worldwide, it has been recognized that blue carbon has a crucial role in reducing impacts of global climate change.

I understand that this year, the Indian-Ocean Rim Association (IORA) Blue Carbon Hub aims to build knowledge and capacity in protecting and restoring blue carbon ecosystems throughout the Indian Ocean. All this in a way that enhances livelihoods, reduces risks from natural disasters, and helps mitigate climate change.

The government of Mauritius is committed to make the Blue economy one of its economic pillars and the blue carbon forms an important component.

The Blue carbon is emerging as an industry in its own right that is assisting the nations worldwide to progress towards 'low carbon' economies whilst creating economic and livelihood opportunity and options.

Ladies and Gentlemen
Blue Carbon refers to organic carbon that is captured and stored by the oceans and coastal ecosystems, particularly by vegetated coastal ecosystems namely Seagrass meadows, tidal marshes, and mangrove forests.

As we are all aware, the coastal ecosystems of mangroves, tidal marshes, and Seagrass meadows provide numerous benefits and services, including:

(i) Coastal protection,
(ii) Provision of habitat for commercially important fisheries and
(iii) Food security for many coastal communities.

Additionally, these ecosystems sequester and store significant amounts of coastal blue carbon from the atmosphere and ocean and hence are now recognized for their role in mitigating climate changes.

It is to be noted that Seagrass, mangroves and saltmarsh, account for only 2% of the world's seabed area, but are responsible for 50% of the carbon that is captured and stored in ocean sediments. Moreover, a single hectare of Seagrass can store twice the amount of carbon that a hectare of tropical forest can store.

Ladies and Gentlemen
Despite these benefits and services, coastal blue carbon ecosystems are some of the most threatened ecosystems on Earth, with an estimated 340,000 to 980,000 hectares being destroyed each year.

When degraded or destroyed, these ecosystems emit the carbon they have stored for centuries into the atmosphere and oceans and become sources of greenhouse gases.

Experts estimate that as much as 1.02 billion tons of carbon dioxide is being released annually from degraded coastal ecosystems.

The main causes of conversion and degradation of blue carbon ecosystems vary around the world but are largely driven by human activities. Common drivers are agriculture, mangrove forest exploitation, terrestrial and marine sources of pollution and industrial and urban coastal development. These impacts are expected to continue and be exacerbated by climate change.

Ladies and Gentlemen
The main critical ecosystems in Mauritius include mangroves, Seagrass beds and coral reefs. One of the visions of my Ministry is the conservation and protection of marine ecosystems including Seagrass, mangrove and coral ecosystems which have a crucial role in carbon sequestration.

Mangrove forests are considered as a climate-change-mitigation option around the world. Scientific records accentuate the fact that mangrove forests are good carbon sinks and their propagation would help combat climate change by fostering a relatively low net carbon dioxide concentration in the atmosphere.

However in the 1990s the mangrove forests' coverage in Mauritius experienced a drastic decline. In this respect my Ministry, with the collaboration of NGOs started a mangrove propagation programme, in 1995, so as to protect and restore the denuded areas. Since June 1995, many propagules have been planted on the west, north, south and east coasts and the mangrove covers for Mauritius and Rodrigues amount to an area of about 181 hectares as at date.

Seagrass ecosystems have been recently recognized to act as an important carbon sink. In this context, my Ministry has initiated the protection and conservation of Seagrass ecosystem. A project is currently on-going to map and monitor the Seagrass around Mauritius with the goal to determine the carbon sink potential of these Seagrass areas in Mauritius to make informed-based management decisions.

My Ministry has 8 proclaimed MPAs that include six fishing reserves and two marine parks, namely Balaclava and Blue Bay with a view to protect marine ecosystems which serve as carbon sinks. Coral farming in ocean based nurseries for rehabilitation of degraded coral reefs is being undertaken.

Furthermore the Ministry through the Mauritius Oceanography Institute is currently monitoring the changes in carbon dioxide in the marine environment in Mauritius under the project "Oceanic Carbonate Chemistry Observatory".

This project aims to monitor ocean acidity caused by increasing levels of carbon dioxide in the atmosphere, to help mitigate the effects of climate change.

The next phase of the project is to determine whether Mauritius is emitting or absorbing carbon dioxide. This project may thus also help in developing adaptive measures for Mauritius in the field of blue carbon financing.

Thus inefficient management and protection of marine ecosystems could release all this carbon dioxide into our immediate environment, thereby posing considerable threat to both marine organisms and the Mauritian society.

It is thus very important for us to measure and assess the amount of blue carbon in Mauritius and to take measures to protect, if not increase, the carbon sequestration in the marine ecosystem, by increasing the coverage of mangroves, Seagrass and wetlands.

Ladies and Gentlemen
I am positive that this Workshop will be highly beneficial to all participants and help to build capacity and will trigger new projects in blue carbon.

Allow me, Ladies and Gentlemen, once again to express my appreciation to the CISRO and IORA for their unflinching support and assistance.

I now have the pleasure to declare this workshop open.

Thank you very much for your kind attention.