Side Event Concept Note

Liberia and the Ocean Acidification Africa (OA-Africa) Network

As part of the IAEA Ocean Acidification International Coordination Center (OA-ICC) and The Ocean Foundation (TOF) Support for Ocean Acidification Awareness and Research in Africa

Date: **8.1.**2021

Venue: Monrovia, Liberia

Title of Side Event

Ocean Acidification Awareness and Research in Africa

1. Introduction

Ocean acidification often referred to as "the other CO_2 problem", is a significant threat to marine ecosystems worldwide, and is the focus of the United Nations Sustainable Development Goal (SDG) 14.3. Ocean acidification has the potential to drive ecological and socio-economic consequences. It is one global manifestation of Ocean Change, along with adding to multiple stressors on ocean ecosystems, including other climate-driven changes (e.g., ocean warming, sea-level rise, and deoxygenation) and local pressures from pollution, overexploitation, and habitat destruction.

Approximately one-fourth of the carbon dioxide (CO_2) released into the atmosphere from anthropogenic activities is absorbed by the ocean.[1] However, this vital service is not without consequence: when carbon dioxide enters the ocean, it changes seawater chemistry, resulting in increased seawater acidity. That chemical change has the potential to impact biological processes, with potentially profound socio-economic impacts severely.

The long-term control and management of ocean acidification depend foremost on the reduction of emissions of carbon dioxide into the atmosphere. In this regard, ratification and effective implementation of the Paris Agreement by countries in this region of Africa region will be instrumental in OA work in the region. Even if carbon dioxide emissions were to be reduced immediately, there would still be a lag time before the acidity levels of oceans normalize, mainly as more acidic surface ocean waters mix with deep water over a cycle that lasts hundreds of years. Therefore, it is critical to building the resilience of ocean ecosystems and of the people that depend on them for their livelihoods to the effects of ocean acidification and climate change adaptation.

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[1] Le Quéré, C., T. Takahashi, E. T. Buitenhuis, C. Rödenbeck, and S. C. Sutherland (2010), Impact of climate change and variability on the global oceanic sink of CO2, Global Biogeochem. Cycles, 24, GB4007, doi:10.1029/2009GB003599.

2. Objective

The objective of the OA-Africa side event is to promote and facilitate a community of awareness around ocean acidification to communicate, develop, and facilitate international activities on ocean acidification, including science, capacity building, and communication. We find that the work on ocean acidification is better appreciated when scientists, industry practitioners, and policymakers collaborate and speak a common language. We hope participants will be able to strengthen existing collaborations and develop new ones by:

- **Improving Capacities in Developing Countries:** Improving capacities in the African region to undertake further research is urgently needed. This would include not only training future scientists but also strengthening capacities of research, scientific, oceanographic and socio-economic institutions in Africa. Technical cooperation with and assistance to regional institutions with relevant experience would be a good step forward.
- **Raising Awareness.** While ocean acidification is now known among scientists, the general public and even many policymakers are still mostly unaware of it. Awareness-raising efforts should build on the support of scientific endeavours and could include preparation of easy-to-understand technical reports written for the layperson, documentaries and publicity in related events and fora including highlighting options to avoid adverse impacts of ocean acidification on marine life and ecosystems.
- **Information Generation and Dissemination**. Recent reviews of changing ocean chemistry include the recently submitted Assessment of Assessments by the Group of Experts set up by the General Assembly, the Climate Change Science Compendium by UNEP and the Fourth Assessment of the Intergovernmental Panel on Climate Change (Chapter 5 of Working Group 1). Regular systems for monitoring changing ocean chemistry are urgently needed. Furthermore, the scientific study of ocean acidification and impacts on marine ecosystems, biodiversity and marine life is still in its infancy and critically needed to develop and implement adaptation solutions. The full range of possible environmental and socio-economic impacts of ocean acidification is also not well understood, and research on these topics, scant at best, is just as important.
- **Contribute to the development of information and data products** that would inform policy and the public concerning ocean acidification and the implications for the overall ecosystem health of the impact. To understand the chemistry of ocean acidification, to an extent, one needs data on temperature, salinity, oxygen, pressure (depth), and carbonate system constraints (i.e., pH, pCO_2, Alkalinity, DIC). Linking chemical changes to impacts on marine ecosystems and associated services requires biological observations and experimentations. Collection of these data, nonetheless, represent a significant public investment in developing the needed capacity and infrastructure. It is critically essential that researchers and industry practitioners can readily access and use ocean acidification information.
- Providing input to future **case studies** for monitoring and research projects to fill gaps in knowledge and data.

3. Description of the Event

The Global Ocean Acidification Observing Network (GOA-ON) was established in 2012 to monitor the status and impacts of ocean acidification. Since its inception, this global network has grown to over 750 scientists from 100 countries, with seven regional hubs, including the OA-Africa Regional Network which was launched in 2015. The OA-Africa Network acts as a regional hub representing scientists in Africa working on ocean acidification, and a platform to foster scientific collaborations with actors and partners, share challenges and opportunities, and raise awareness on ocean acidification.

The IAEA Ocean Acidification International Coordination Centre (OA-ICC) promotes international collaboration on ocean acidification. The OA-ICC organizes training courses in the Member States and provides access to data and resources to advance ocean acidification research. The Centre promotes the development of data portals, standardized methodology and best practices. The OA-ICC works to raise awareness of the issue among various stakeholders and inform about the role that nuclear and isotopic techniques can play in assessing its impacts. To achieve these objectives, the OA-ICC works with many international partners and supports global and regional ocean acidification networks, including the OA-Africa Regional Network.

Future Earth Coasts (FEC) is a Global Research Project of Future Earth supporting sustainability and adaptation to global change in the coastal zone. Drawing on over 20 years of international scientific experience and applied research, FEC builds and connects diverse forms of knowledge, engaging science, society and policy. In pursuit of its objectives, FEC works with and supports various activities and networks, such as the OA-Africa Regional Network.

The Ocean Foundation (TOF) launched the OA Day of Action on the 8 January 2018, or **8.1**, which represents the current average pH of the ocean. For the past two years, TOF has celebrated the OA Day of Action as an event in Washington DC for government representatives from embassies to learn more about OA and to encourage to build both technical and financial capabilities to address the effects of OA.

This side event would showcase the scientific efforts being made to monitor and research ocean acidification throughout Africa, by OA-Africa members. This event will increase awareness about ocean acidification and current status of research efforts in Africa and foster a dialogue with scientists, policymakers and industry practitioners attending the OA Day of Action in Monrovia, Liberia. OA-Africa will host the side event in partnership with The Ocean Foundation, the IAEA OA-ICC, Future Earth Coasts, Environmental Protection Agency of Liberia, National Fisheries and Aquaculture Authority, and the Liberia Maritime Authority.

The Ocean Foundation, the IAEA OA-ICC, and Future Earth Coasts would provide graphics and social media posts for this event to share and utilize their channels to distribute information on the event and its outcomes. Besides, the OA-Africa Regional Network would plan a Facebook Live coverage of the event for 8th January to highlight OA-Africa work on OA and tell our stories about why we became interested in it.

4. Approach

In advance of the OA-Africa side event in Monrovia, experts will collaborate to develop presentations on critical issues regarding ocean acidification, particularly in the African region.

A preliminary agenda for the side event is annexed to this concept note.

Based on the discussions and recommendations of the side event, OA-Africa will coordinate the participation of 40-50 participants (in-person) at a local venue in Liberia, comprising mostly of local actors and partners. However, the wider ocean acidification community would be invited to participate online via Microsoft Team or Zoom. The side event will be live-streamed via Facebook, with a shared link for live coverage on the OA-Africa website (https://www.oa-africa.net/about-oa-2/)

5. Expected Outcomes

We hope that the OA-Africa side event will result in an ongoing community of awareness on ocean acidification with policy experts, industry practitioners and scientists. The Government of Liberia will be the first to champion OA awareness fully in the region with the three lead institutions in the maritime domain: National Fisheries and Aquaculture Authority; Environmental Protection Agency; and Liberia Maritime Authority, to share a common language on the topic at the national level. Differences of opinion will remain, but they will be founded in a common understanding of the issues.

We anticipate that the side event will produce a resolution to build on past training and research to promote and develop ocean acidification research in Africa. The resolution would serve as a signpost to let members know what to do next based on priorities. The OA-Africa Network would work towards setting up an office in Africa with a minimum of two staff to coordinate the activities of the Network in association with the Co-chairs, Steering Committee Members, and the Advisory Panel.

The side event would contribute to strengthening national, regional and international partnerships, including the scientific community, that will focus efforts on monitoring and understanding the impact of OA on the environment and human well-being.

6. Provisional Agenda

OA-Africa Regional Network Side Event
OA Day of Action
Monrovia, Liberia, 08 January 2021

Start	End	Agenda Item	Suggested Lead
8:00	8:30	**BREAKFAST**	
8:30	9:00	Arrival & Registration	
9:00	9:45	**Welcome Remarks** • Liberian High Officials ○ National Fisheries and Aquaculture Authority (NaFAA) ○ Environmental Protection Agency (EPA) ○ Liberia Maritime Authority (LiMA) • **Video Address** ○ OA-Africa Regional Network ○ IAEA Ocean Acidification International Coordination Center (OA-ICC) ○ The Ocean Foundation (TOF) ○ Future Earth Coasts (FEC) ***Official Side Event Opening:*** *Ms. Emma Metieh Glassco* *Director-General, NaFAA*	Roshan Ramessur
GROUP PHOTO			
-	10:00	**COFFEE BREAK**	
10:00	10:40	**Setting the Scene: Expert Panel Discussion** 1. Introduction of ocean acidification and OA-Africa (in-person presentation 8 mins) 2. The significance of OA research and capacity building in developing countries (video presentation 8 mins) 3. The importance of OA data, i.e., related to marine life and informing policies (video presentation 8 mins) 4. Sustainable management of the fisheries sector: The Liberian experience (in-person presentation 8 mins) 5. Regulating the marine environment: The Liberian experience (in-person presentation 8 mins)	Sheck Sherif The Ocean Foundation AEA OA-ICC Yevewuo Subah Jefferson Nyandibo
10:40	11:40	**Overview Presentations**	

		• GOA-ON, Pier2Peer Program and GOA-ON kits (video presentation 8 mins) • UN SDG 14.3 process, UN Communities of Ocean Action, the OA-ICC and other international initiatives (video presentation 8 mins) • Natural and Social Science Interaction in OA-Africa Research (video presentation 8 mins) • Current status of OA capacity in Africa (video presentation 8 mins) • Future Earth Coasts' efforts to address OA (video presentation 8 mins) Questions & Answer (20 mins)	Nayrah Shaltout Peter Swarzenski Patrizia Ziveri Sam Dupont Kai Schulz
11:40	12:10	1. Overview of the BIOTTA (Building Capacity in Ocean Acidification Monitoring in the Gulf of Guinea) Network (video presentation 10 mins) ○ Innovation ○ Capacity Development ○ Awareness & Outreach 2. Ocean Acidification Monitoring and Biological Impacts (video presentation 10 mins) Questions & Answers (10 mins)	Edem Mahu Carla Edworthy
12:10	13:00	Status of OA in the African region: New findings and results • West Africa – *Gulf of Guinea* (10 mins video presentation) • North Africa – *Atlantic Coast* (10 mins video presentation) • East Africa – *WIOMSA* (10 mins video presentation) • Questions and Answers (20 mins)	Adekunbi Falilu Mohammed Idrissi Eric Okuku
13:00	14:00	**LUNCH** ***& Vote of Thanks***	