

CONCEPT NOTE

Ocean Acidification- East Africa Special Session - 1 Day

11th WIOMSA Symposium in Mauritius
(1-6 July 2019)

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General Introduction.

The ocean has been surrounding us for more than billions of years and yet it is only now that we have started to uncover the vast array of biologically diverse resources that it possesses and as such commenced our journey towards understanding its role, functions and importance in our lives and its interactions with the Earth's system. However, our ocean is threatened by global changes which is exerting multiple stresses on marine ecosystems. In addition to warming and sea level rise induced by climate change, chemical changes as a result of increasing atmospheric carbon dioxide (CO₂) are also occurring. The chemical changes associated with the increase of CO₂ in the ocean is often referred to as ocean acidification.

Today's and future socioeconomic development will be affected not only by the level of ocean acidification itself, but even more by the rate of change, which is nearly ten times faster than any time in the past 50 million years, outpacing the ocean's capacity to restore oceanic pH and carbonate chemistry within the next century. The rapid pace of change limits marine organisms, marine ecosystems, and humans to adapt, evolve, or otherwise adjust to the changing circumstances. Recent studies show that at the end of the century 'business as usual' CO₂ emission will result in an average 100-150% increase in acidity in surface ocean as compared to preindustrial values.

In 2015, the United Nations adopted the 2030 Agenda and a set of 17 Sustainable Development Goals (SDG), including a goal dedicated to the ocean, SDG 14, which calls to '*conserve and sustainably use the oceans, seas and marine resources for sustainable development*'. Measuring process to achieve its target 14.3 ("*Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels*") and its related indicator 14.3.1 ("*Average marine acidity (pH) measured at agreed*

suite of representative sampling stations”) needs data and information. And though Africa and in particular the countries part of WIOMSA highly rely on ocean resources, little is known about ocean acidification in the region and its impacts on ocean and human health. This together with the current declines in ocean assets, and future population and economic growth, provide a profound challenge to the Blue Economy’s future in Africa.

Yet, the Global Ocean Acidification Observing Network (GOA-ON), which is supported by multiple organizations such as IOC-UNESCO, the OA-ICC of the IAEA and IOCCP, as well as in collaboration with the Ocean Foundation has already started the process of establishing the technical and human capacity for ocean acidification measurement. However, only one platform in the Eastern African region is currently registered as providing data.

Recently, WIOMSA in partnership with IOC-UNESCO, OA-ICC and GOA-ON, supported six projects along the Eastern African Coast to support ocean acidification observation systems in the field, the implementation of the SDG 14.3.1 indicator methodology, the investigation of biological response to ocean acidification using experimental set-ups in the laboratory, or a combination of both. The objectives of this initiative comprise:

- Establish Ocean Acidification observation and research in the Western Indian Ocean to help countries to achieve the target 14.3 minimizing the impacts of ocean acidification
- Create a community of practice in the Western Indian Ocean for ocean acidification and other stressors on the marine environment
- Relate the ocean acidification observation to species and ecosystems of socioeconomic importance to make the science relevant for society

Summary

East Africa is expected to grow exponentially within the next 30 to 40 years and investment is being attracted in all regions of the continent. The OA Strategy is to ensure that East Africa will grow in a sustainable manner through the coordinated effort of all Member States. A primary theme arising from the strategy is the sharing of information, utilizing Member States resources and skills to advance a maritime agenda through coordinated efforts.

The 30 million square km of ocean off the coasts of east and southern African countries supports some 60 million people living within 100km of the shore. The annual economic output of the ocean is estimated to come forth in line behind the region’s biggest economies – South Africa, Mozambique, Kenya and Tanzania. It produces more than \$20.8 billion in goods and services every year. Beyond economics, the ocean is also providing countless other services directly and indirectly related to human health and wellbeing. However, the health of the ocean is approaching a turning point. Many principal ocean assets are already declining as a result of over-exploitation (e.g. 35% of the fish stocks assessed in the Western Indian Ocean are fully exploited and 28% are over-exploited). As the use of ocean resources is accelerating, new strategies need to be developed to ensure sustainability, especially in the context of

emerging stressors such as OA that will add more pressures on already challenged ecosystems.

A well-defined OA strategy for East Africa is urgently needed. It is time for East Africa to invest in new projects with the context of a sustainable blue economy with the intention to protect its coast, alleviate poverty, provide job opportunities and promote scientific research and development on the continent. The participation of stakeholders in achieving this vision is critical to provide different skills and expertise in finding concerted solutions. As such WIOMSA and OA- East Africa strategy must endeavor to engage Member States, industry players, and the private sector organizations through mechanisms that would enhance trust and the commitment of key actors. A subgroup of the OA-Africa network is currently working on such a strategy that will be presented in a white paper for the Eastern African region. A session during the WIOMSA meeting would allow to present the white paper to a wide audience and develop new ideas.

Why WIOMSA and OA- East Africa?

WIOMSA and OA- East Africa aims to raise awareness to Ocean Acidification. This is crucial to ensure protection and sustainable development of the South West Indian Ocean and East Africa from this emerging threat.

This event will offer an opportunity for East African relevant stakeholders to understand challenges associated with CO₂ mitigation while maintaining ecosystem health as well as livelihoods for local communities. Research and monitoring priorities for the conservation and management of the ocean and its resources will be highlighted through unique themes.

1. To motivate government, stakeholders and civil society to change their attitudes toward CO₂ emissions and the Ocean through a better understanding of the relationship between actions (or lack of), CO₂ emissions, OA and consequences for the Ocean and Human health.
2. To promote research, innovation and development to minimize and anticipate impacts of OA.
3. To present the OA White Paper for East Africa to a wide audience and include new concepts and ideas.

Recommendation

The 11th WIOMSA symposium at the University of Mauritius (1-6 July 2019) is a timely event to organize such a session. This would allow to invite key experts from a wide range of disciplines from social to natural sciences and relevant local stakeholders to discuss how to address this key challenge. Planning for such an event requires sufficient time for organization and sharing of responsibilities. However, we can prepare a press release, make use of the OA-Africa and WIOMSA websites and Facebook pages.

Target Audience

The participants will include international experts and partners, universities and colleges involved in WIOMSA OA Projects, government line ministries that are concerned with the management and protection of the marine and coastal environments, civil society, development partners and East African and international private sector.

Potential Partner Institutions

1. Ocean Acidification (OA) – Africa Network
2. Global Ocean Acidification- Observing Network
3. IAEA-OA-ICC
4. WIOMSA
5. The Ocean Foundation
6. IOC-UNESCO
7. NOAA
8. The Centre for Collective Action Research (CeCAR)

Session Program

The 1-day OA session will offer an opportunity for East African relevant stakeholders attending the 11th WIOMSA symposium at the University of Mauritius on 5 July to understand OA challenges while maintaining ecosystem health as well as livelihoods for local communities.

OA Research and monitoring priorities for the conservation and management of the ocean and its resources will be highlighted as below:

1. To motivate government, stakeholders and civil society to change their attitudes toward CO₂ emissions and the Ocean through a better understanding of the relationship between actions (or lack of), CO₂ emissions, OA and consequences for the Ocean and Human health.
2. To promote research, innovation and development to minimize and anticipate impacts of OA.
3. To present the OA White Paper for East Africa to a wide audience and include new concepts and ideas.

(Morning Session) 11.30- 13.00

We shall present the OA East Africa White Paper for the morning session and lead the discussions for different current and future WIOMSA OA projects under SDG 14.3 to create a community of practice in the Western Indian Ocean for ocean acidification and other stressors on the marine environment and relate the ocean acidification observation to species and ecosystems of socioeconomic importance to make the science relevant for society.

Lunch Break- 13.00-14.00

(Afternoon session) 14.00-18.00 (Coffee Break 16.00- 16.30)

We will spend the other half a day on the socio economic importance and set up an OA Working Group for WIOMSA with members working on OA Projects and both WIOMSA and OA- East Africa will aim to raise awareness to Ocean Acidification on the communication aspect in line with GOA-ON through platforms and newsletter (PIs under WIOMSA) and identify further sources of funding under WIOMSA to cover this aspect.

We will extend the invitation to key experts from a wide range of disciplines from social to natural sciences and relevant local stakeholders and to discuss how to address this key challenge for those attending the 11th WIOMSA Symposium.