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**IOC Regional Committee for the Central Indian Ocean (IOCINDIO)**

**The Third Phase of Workshop Series on**

**The Effects of Climate Change on the Indian Ocean Marine Environment**

**20-22 February 2023**

**Tehran, Islamic Republic of Iran**

**09:00-16:30 (Iran Standard Time – GMT +3:30)**

1. **INTRODUCTION**

The Indian Ocean, as the third-largest body of water in the world, plays an important role in the economy, ecosystem and the weather from local to global scales. Many properties of the Indian Ocean, can be fundamentally influenced by climate change. Climate change is rapidly impacting the weather, ecosystems and life of more than two billion people. The impacts of climate change are putting increasing pressure on both marine and terrestrial environments, through more extreme weather conditions that also increase the likelihood of natural disasters.

Climate change is predicted to result in the increase in global temperatures, sea level rise, ocean acidification, more intense tropical cyclones and increase in frequency, intensity or duration of extreme weather events. It is predicted that climate change-driven disturbance will have a negative effect on: water supply; food security; health, industry, settlement and society, especially for those located in coastal areas and river flood plains. In addition, climate change would also impact on: natural systems and resources, infrastructure and labor productivity which may lead to reduced economic growth and increasing poverty and inequality. Therefore, investigation of climate change effect from different points of view, from marine environment/biodiversity to weather variation, is significant.

, **SUMMARY OF KEY POINTS**

* Deoxygenation and acidification
* Paleoclimatic studies
* Biogeochemical cycling
* Primary productivity and fisheries
* Sensitive marine ecosystems of the Indian Ocean
* Physical Oceanography and climate change
* Climate change and marine migratory species
* Atmospheric characteristics of the Indian Ocean

1. **PROPOSAL**

The importance of addressing the issue of climate change has long been recognized by the IORA Member States, which is now included in the Work Plan of the IORA Working Group on the Blue Economy (WGBE). To better understand the impacts of climate change on the marine environment, a workshop series entitled as "Effects of Climate Change on the Indian Ocean Marine Environment" are planned to be organized by the Regional Centre for Science and Technology Transfer (RCSTT) in cooperation with the Iranian National Institute for Oceanography and Atmospheric Science (INIOAS), and the Regional Education and Research Centre on Oceanography for West Asia (RCOWA) under the auspices of UNESCO in collaboration with the IORA Secretariat.

The workshop series will focus on the effects of climate change on the physical, chemical, biological and meteorological properties of the Indian Ocean and adjacent seas. The workshops will aim to bring together scientists and policymakers with an interest in climate change and marine environments. During the workshops, the scientists of climate change will present their latest findings, knowledge and information on different aspects of climate change, its impacts and also the related policies. Participants from IORA region will have the opportunity to discuss and formulate new issues and research areas.

**C. AIMS AND OBJECTIVES**

The aim of the workshop is to enhance the knowedge of Member States and share information on the impacts of climate change on the marine environment. The specific objectives are to:

* + - Promote sharing knowledge and findings on the effects of climate change on various aspects of the marine environment and ecosystem.
    - Enhance capacities and skills of IORA Member States on the sustainable management and
    - conservation of the marine biodiversity.
    - Encourage international research partnership to invest in the conservation and restoration of blue carbon ecosystems asan important component for mitigating the effects of climate change.
    - Increase awareness and resilience of IORA Member States on climate change driven disasters and damages.
    - Design an action plan to address the impacts of climate change on marine environment and ecosystems, as well as its implications on food security.
    - Motivate researchers to assess and validate their hypothesis on the climate change, leading to promotion of numerical climate prediction.
    - Introducing Marine and Coastal Adaptation and Mitigation Measures for Climate Change

**D. PROGRAMME TOPICS**

The topics to be presented in the workshop would be as follows:

* Long-term perspective of regional climatic changes of the Indian Ocean
* Changing biogeochemistry of the Indian Ocean and its ecosystem implications
* Climate change-driven dust storms and primary productivity within the Indian Ocean
* Marin ecosystems of the Indian Ocean under the changing climate
* Impacts of climate change on fisheries of the Indian Ocean
* Effects of climate changes on oceanographic eddies and currents
* Critical implications of climate change for marine migratory species
* Marine and Coastal Adaptation and Mitigation Measures for Climate Change

**E. TARGET PARTICIPANTS**

Experts from IORA Member States/Dialogue Partners, R&D institutions, scientists and students with wide interest and experience in climate change and marine sciences. Members of the Working Group on the Blue Economy (WGBE) and the Working Group on Science, Technology and Innovation (WGSTI) are encouraged to attend the event.

**F. FUNDING**:

The Workshop will be funded under the IORA Special Fund, and contribution from the local partners in Iran to the RCSTT. In case, the number of participants and the related expenses goes beyond the existing budget limits, RCSTT will seek financial assistance from the other potential donor organizations in the framework of IORA terms and references for such procedures.