

Foreword



It gives me a great pleasure and happiness to release the First News Letter of the Project 'Monitoring for Environment and Security in Africa' (MESA). Successful implementation of the project 'African Monitoring of Environment for Sustainable Development' (AMESD) by the Mauritius Oceanography Institute (September 2009 - June 2013) gave tremendous boost to the Indian Ocean Commission (IOC), which declared MOI as the 'Regional Implementation Centre' for the second time to execute the IOC Thematic Action THEMA on "Marine and Coastal Management under MESA in the IOC Region.

I am convinced that cooperation would be promoted within the IOC region and across African countries and that the MESA Programme would help institutions and policy makers of the IOC member states and the neighbouring countries of the Mozambique Canal to make better use of Earth Observation Data for an improved management of marine and coastal areas.

Dr. M. V. RAMANA
Director



INDIAN OCEAN
COMMISSION



Preface by Gina Bonne



Access to earth observation satellite data has improved significantly in the region. In some countries, these technologies have proven to be useful and successful, for instance, in the management of disasters. While recognizing the significant progress and achievement made in the region, taking into account the findings of the IPPC report, today more than ever, the Indian Ocean region requires upgraded technologies and need to put in place surveillance systems to meet the challenges of climate change. Indeed, these challenges are impacting on the rich and fragile ecosystems, treating livelihood, development and economies of the islands and coastal States, which depend largely on tourism and fishing.

The member States of the Indian Ocean Commission collectively called for strengthening joint effort to combat climate change, and to promote disaster risk reduction and effective management of the marine resources. The Secretary General of the Indian Ocean Commission, Mr Jean

Claude de l'Estrac, at the launch of the MESA project in Mauritius on the 23rd of June 2014 reminded that the Indianoceanic region is one of the world's which is at greatest risk from natural disasters and the effects of climate change. He stated that "Accessing updated, reliable and relevant scientific data is a prerequisite for the formulation and implementation of efficient public policies on sustainable development. This is the very challenge of the MESA Project, which aims at putting the most appropriate scientific and technological tools at the service of decision makers."

Sustaining the acquired technology and continuously accessing satellite imagery requires a significant investment from our States. These investments may not be affordable to most therefore such programs as AMESD and MESA with regional focus offer added value to our countries.

The joint effort of the Mauritius Oceanography Institute and the IOC during the implementation of AMESD has proven to be successful. With the experience acquired, we look forward for the implementation of this ambitious MESA Project which should contribute to close the technological gap of our continent.

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About MESA

The Monitoring for Environment and Security in Africa (MESA) programme is an EU-funded project under the 10th EDF with a budget of 37M EURO. It is managed by the African Union Commission and will reinforce the framework and expand the long-term cooperation and exchange between European and African stakeholders for the development of operational services based on satellite and in situ EO data that support environmental management and security in Africa at continental, regional and national levels. The aim of this programme is to ensure continuity of past investments on the use of Earth Observation data in Africa (e.g. PUMA and AMESD) and to provide an initial contribution to the GMES and Africa Initiatives. Beneficiary Countries of MESA are 48 ACP countries of five African Regional Economic Communities: CEMAC, ECOWAS, IGAD, IOC and SADC.

IOC - MESA SERVICES

The Mauritius Oceanography Institute (MOI) has been entrusted, as was the case during the African Monitoring of Environment for Sustainable Development (AMESD) project, to be the Implementation Centre for the Indian Ocean Commission (IOC) THEMA which constitute of IOC member states and neighbouring countries of the Mozambique Canal. MOI will focus on the theme **Marine and Coastal Management** and deliver the following Information Services:

Service 1: Marine Resources Management:



Under this service, the MOI will further improve the AMESD operational services in place. Charts for the detection of Potential Fishing Zones will be generated coupled with additional oceanographic data such as current patterns, sea surface wind and mixed layer depth. The service will build-up on what has been initially developed under the AMESD programme to produce enhanced bulletins for the monitoring of both biological and physical oceanography parameters on a monthly basis.

Service 2: Monitoring of Coastal Environment

This service is about monitoring the coastal environment of the island states of the Indian Ocean Commission, so as to address the issues related to coastal erosion. It is proposed to deploy wave data buoys in selected areas. The idea is to acquire operational marine information to allow monitoring, evaluation, prevision and mitigation of the oceanographic risks such as sea level rise, swells and storm surges that may lead to coastal hazards. Also a sensitivity/vulnerability assessment of the coastlines of the IOC countries (Mauritius, Comoros, Madagascar and Seychelles) will be initiated using historical and archived data. The maps produced will indicate the level of vulnerability. Through the use of a coastal vulnerability index, sites more susceptible to erosion will be identified within each country for monitoring purposes.



EVENTS

LAUNCHING OF THE "MONITORING FOR ENVIRONMENT AND SECURITY IN AFRICA (MESA)" PROJECT FOR THE IOC REGION



The Mauritius Oceanography Institute (MOI) and the Indian Ocean Commission (IOC) officially launched the Pan-African "Monitoring for Environment and Security in Africa (MESA)" project for the South West Indian Ocean region at the Hennessy Park Hotel in Ebène, Republic of Mauritius on Monday 23rd June 2014. The Minister of Environment and Sustainable Development, the Honourable Mr. Devanand Virahsawmy, the Secretary General of the IOC, Mr. Jean-Claude de l'Estrac, Mrs. Corinne Paya, Project Manager and Representative of the Delegation of the European Union to the Republic of Mauritius, for the Union of the Comoros and the Republic of Seychelles and the Director of MOI, Dr. Mangipudi Venkata Ramana were present at the opening ceremony.

In his opening speech, Mr. Virahsawmy, recalled that climate change is having serious repercussion on the economic competitiveness of Small Islands Developing States (SIDS) and is affecting them on their respective sustainable development pathways. In that context, Mr. Virahsawmy pointed out that the pooling of resources and the exchange of information at regional and sub-regional levels in line with the principles of AMESD-MESA are of utmost importance. "It is crucial for our countries to facilitate access to Africa-wide environmental information derived from Earth observation technologies", he said.

For his part, Mr. de L'Estrac, said that the MESA project forms part of a technological upgrading of sustainable development in Africa, while adding that the MOI and the IOC have been mandated by the African Union Commission (AUC) to steer and monitor marine resources management through Earth satellite data. Through MESA, several countries would be able to collaborate together thus creating a network of centres of excellence with regards to sustainable development.

Dr. M.V. Ramana, Director of the MOI, in his welcoming address mentioned that the overall objective is to help institutions and policy makers of the IOC member states and the neighbouring countries of the Mozambique Canal to make better use of Earth Observation Data for an improved management of marine and coastal areas. He further stated that he is convinced that cooperation would

be promoted within the IOC region and across African countries.

Mrs. Paya emphasized on the willingness of the European Union to support Africa and Indian Ocean countries. She added that there is a need for regional organisations to maintain a strong involvement in the oversight and decision-making processes as well as to ensure that mechanisms are put in place for future sustainability in their respective regions.

Besides introducing the project to all key stakeholders, the meeting gave an overview of the services and products proposed under the MESA-IOC-MOI thematic action and also provided opportunities to meet with the different regional partners. Themes on the agenda included an overview of the MESA

programme, the Marine and Coastal Management THEMA, improved tools for detection of potential fishing zones, introduction to Integrated Coastal Zone Management, roles and responsibilities of participating institutions, and coastline change survey by remote sensing.

Some 60 participants coming from Comoros, Mauritius, Madagascar, Mozambique, Kenya, Reunion Island, Seychelles and Tanzania attended the workshop including high officials from the Ministry of Environment and Sustainable Development and the Mauritius Meteorological Services. The meeting was also attended by representatives of the Ministry of Fisheries, the National Coast Guard, University of Mauritius, L'Université de la Reunion and Fisheries Research Institutions participating in the project.



FIRST IOC - MESA REGIONAL STEERING COMMITTEE

The first MESA Regional Steering Committee for the Indian Ocean Commission (IOC) region was held at the seat of the IOC on the 24th June 2014 in Ebène. This meeting which was chaired by the IOC, gathered the National Focal Persons of the participating states, representatives of the Mauritius Oceanography Institute, the Regional Implementation Centre, as well as the representative of the MESA Technical Assistant Team.

Several presentations covering the following topics were delivered during the meeting: the *Overall MESA Programme with a focus on policy framework strengthening*; the *Terms*

of Reference for National Focal Point and the setup of national networks; the outcome of the AMESD project and other national initiatives on Earth observation; the Indian Ocean Commission regional grant and the outcome of the technical meeting and finally the actions and involvement of la Réunion.

Some of the points raised during the discussions included: the importance of user feedback, the role of National Focal Points, the support to be expected from MOI, the use of existing structures for national networks, technical problems with AMESD stations and MESA components which will involve Eastern and Southern African coastal countries.

A set of recommendations and conclusions were formulated at the end of this one-day meeting.



REGIONAL TECHNICAL WORKING COMMITTEE WORKSHOP

The 1st MESA-IOC-MOI Regional Technical Working Committee Workshop was held in Mauritius from the 3rd to 7th November 2014 at the Mauritius Oceanography Institute in Quatre Bornes, Mauritius.

The objectives of this workshop were:

- To troubleshoot and/or solve problems on the AMESD Stations for countries which are still facing challenges with their AMESD Stations
- To meet with the ex-AMESD focal points to discuss the constraints and challenges in using AMESD services and products and propose possible solutions

- To introduce and explain new parameters that will be used to enhanced the existing Potential Fishing Zone maps

12 delegates from Comoros, Madagascar, Mauritius, Kenya, Mozambique, Seychelles and Tanzania attended the workshop. With the support of the MOI staff, they managed to get their AMESD station functional again.

The MOI team also provided training on how to use sea surface currents as a new parameter for generating more refined advisories. A session dedicated to collecting feedback from the regional stakeholders on challenges in using and implementing AMESD services was organised in collaboration with the Indian Ocean Commission.



COOPERATION BETWEEN ECOWAS AND IOC REGIONS

It is foreseen under MESA to “Improved cross-fertilisation (geographically and thematically) and cooperation, both among regions on the African continent and with European partners, in the interest of synergised, efficient, and integrated information services on a continental scale.”

Considering the successful implementation of the marine THEMA by the Mauritius Oceanography Institute during AMESD, the Economic

Community Of West African States (ECOWAS), specifically requested for a similar service during the implementation of ME-SA.

As part of MESA “cross-fertilisation” efforts, the Mauritius Oceanography Institute is collaborating with the University of Ghana, the designated ECOWAS Regional Implementation Centre (RIC) for providing EO services for managing coastal and marine resources in West Africa.

Transfer of MOI-IOC-AMESD Services to the ECOWAS region

3 MOI staffs (Mr. Eric Martial, Mr. Vimal Ramchandur and Mr. Arshad Rawat) were invited by the University of Ghana (UG), the Regional Implementation Centre of the ECOWAS region to support the University personnel in adapting AMESD-IOC services to the West Africa region. During the visit from the 19th to 23rd May 2014, the MOI team provided technical support to their counterparts

on “e-Station Systems configuration and Administration”, “Potential fishing zone mapping” and the “Physical Oceanography” components of the AMESD-IOC Services. The UG staff exchanged with MOI methods for generating primary productivity using VGPM – models and introduced to the MOI team the methodology used for developing coastal vulnerability indices in Ghana and transferable to the IOC. The MOI is pleased to announce that the mission in Ghana was a success.



VISITS

Dr. G. Wiafe, Dr. M. Niane and Mr. I. Williams from the University of Ghana, the ECOWAS Marine THEMA RIC, visited the Mauritius Oceanography Institute (MOI) from the 7th to 11th April 2014. The purpose for their visit was to understudy the services implemented by MOI during AMESD and discuss their transfer to the ECOWAS region.

During this visit, they had the opportunity to meet with Dr. M.V. Ramana, the Director of MOI and the MOI AMESD staff to better understand the services developed and discuss the modalities of a mission



from MOI to Ghana to provide technical support to University of Ghana with the implementation of the services dealing with fisheries management and the monitoring and forecasting ocean conditions.