

Inshore Oceanographic Monitoring Programme for Seychelles

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1.0 Background

As part of the development of a long term monitoring programme for the Indian Ocean Region, the nine participating countries under the ASCLME Project, will start to implement the Inshore Oceanographic Monitoring Programme (IOMP) to complement the ship-based offshore oceanographic works. The IOMP has been repeatedly requested by countries, especially those that fall within the exclusion zone of the Dr Fridjof Nansen cruises to enhance our understanding about the inshore ecosystem.

The first activity undertaken as part of the training towards the finalisation of the Seychelles' long term monitoring programme was the inshore oceanographic monitoring training course held in Mauritius in April 2010. The training was attended by participants from the ASCLME participating countries. The aim of the training was to enable participants to learn and have hands on experience on the deployment of the monitoring equipment, data collection and partly on data analysis. Each ASCLME country, including the Seychelles will now be provided with a set of basic oceanographic equipment - a YSI (for CTD measurements), a Niskin Bottle and a GPS to facilitate the initiation of national, shore based oceanographic monitoring programmes. The ASCLME Project will endeavour, where possible, to support the maintenance and expansion of the Underwater Temperature Recorder Network for the WIO region, initiated under the African Coelacanth Ecosystem Programme (ACEP).

2.0 Responsibility

2.1 Institution (s):

Seychelles Fishing Authority (SFA) is one of the institutions actively involved in undertaking oceanographic cruises under various Programmes. SFA has the experience and has been consecutively deploying its CTD unit and Doppler current Sensor at various sites under different projects. It is working closely with the National Park Authority, the focal institution under the project to implement the IOMP. These activities will be facilitated by using the SFA research vessel, R/V L'Amitie, which undertakes both fisheries and oceanographic research. SFA will be responsible for the equipment due to ease of storage and deployment (YSI for CTD measurements, a Niskin Bottle and a GPS).

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2.2 Personnel:

Ms. Kethsia Georges, ASCLME National Cruise Coordinator for the Seychelles, , will be responsible for the storage aspect of the equipment while Mr. Calvin Gerry, SFA's Fisheries Oceanographer will have the mandate to deploy and be to operate the equipment. The said personnels with liaise closely with the national focal point and the national COG.

3.0 Plan of action for the use of the equipment for 2010 and 2011:

3.1 Introduction

There are presently few ongoing marine monitoring programmes in the Seychelles which can also benefit from the use of the equipment. These programme include the "Seychelles Ocean Temperature Network" (SOTN), Reef Monitoring and Coral Bleaching Monitoring, amongst others among other local oceanographic- related projects/ programmes.

SOTN is a national programme that involves the use of temperature loggers to monitor ocean temperature nationally. The aim of the project is to enhance the local knowledge in the field of climate variability and climate change dynamics in

marine ecosystems. It also involves the collection of data, data mining (the process of extracting patterns from data) and then management of the data. The project is being done in collaboration of Government institutions and NGOs under an MOU which will be reviewed in 2011.

Seychelles National Parks Authority (SNPA) is the main organisation responsible for coral reef monitoring within the marine parks and its adjacent areas in the country. It is assisted by voluntary agencies such as Global Vision International (GVI) and Earthwatch. There are also other NGOs involved in reef monitoring at other locations outside the marine park such as Aride and Darros islands by Island Conservation Society and Darros Research Centre.

In addition, there is the NOAA coral Bleaching Monitoring Station which is carried out via remote sensing. This information is used as an indication of the status of thermal stress which the corals are exposed to at designated sites and this data is used by responsible Agencies dealing with coral related issues and Ocean Temperature data.

3.2 Objective

The Inshore Oceanographic Monitoring Programmes under ASCLME for 2010 will involve the participation of two main active monitoring programmes which are the; Seychelles Ocean temperature Network (headed by SFA) and Coral Reef monitoring/ Coral Bleaching aspects (headed by SNPA). Both monitoring programmes have support from NGOs and voluntary agencies such as ICS, Nature Seychelles, GVI etc...

The equipment will have different uses depending on the monitoring programme.

For the Seychelles Ocean Temperature Network the YSI will be deployed at the Site where there are existing Temperature Loggers for

- Validation
- Calibration
- Additional data

For the Coral Reef Monitoring the YSI will be deployed in the Marine Parks and other sites of significant biodiversity importance.

- Ocean temperature data to monitor reef status/recovery ...

3.3 Field Trip Date

SFA has scheduled a research cruise in November 2010 to download and undertake maintenance on temperature loggers around the inner islands under Seychelles Ocean Temperature Network Project. Thus the equipment will be used during this cruise. The cruise will involve the use of SFA's research vessel R/V L'Amitie for about 7 days.

| | | |
|-------|--|--|
| Day 1 | Departure | |
| | Download data and maintenance of loggers, and coral reef data at – South Mahe Is and Fregate Is | |
| | YSI Deployment | |
| | | |
| Day 2 | Download data and maintenance of loggers, and coral reef data at – Marianne Is | |
| | YSI deployment | |
| | Download data from TGR | |
| | | |
| Day 3 | Download data and maintenance of loggers, and collect Coral Reef data at – Aride Is and Curieuse Marine Park | |
| | YSI Deployment | |
| | | |
| Day 4 | Niskin bottle deployment demonstration | |
| | YSI Deployment | |
| | | |
| Day 5 | Download data and maintenance of loggers, and collect Coral Reef data at Cousin Is | |
| | YSI Deployment | |
| | | |
| Day 6 | Download data and maintenance of loggers, and collect Coral Reef data, and collect Coral Reef data at – North Is and Ile Cachee | |

| | | |
|-------|----------------|--|
| | YSI deployment | |
| | | |
| Day 7 | Spare Day | |
| | Back to Port | |

3.4 Sampling Plan

The YSI will be deployed at the sites where existing temperature loggers are found and at designated sites within the Curieuse Marine Park. The sampling method will be mainly profiling.

Niskin Bottle will be deployed as a training exercise to build the capacity of SNPA staff.

3.5 Data Storage

All the data collected by the equipment provided by ASCLME project will be submitted to the project's focal institution. In addition a copy of the dataset will be stored at SFA or submitted to the respective organisation which was involve in the data collection.

3.6 Cruise Personnel

The research cruise will be undertaken by the Seychelles Fishing Authority research vessel, R/V L'Amitie. The personnel on the vessel will be:

- SFA Research vessel crew

- Scientific Team

- SFA's Fisheries Oceanographer, Scientist and Technicians

- SNPA representative (s) and technicians

Representative from NGOs will also be involved in the cruise and will assist with the deployment and data collection.

Appendix 1: Sampling Areas

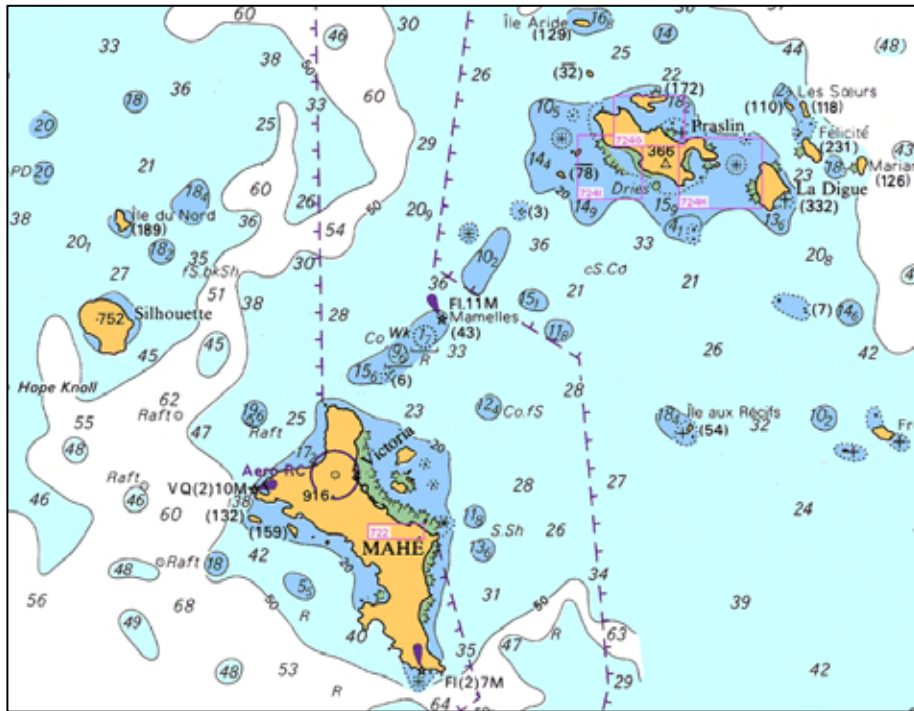


Figure 1: The inner granitic island region, the overall Sampling Area