MDG 10: Ocean Acidification in NW Madagascar

Keywords: ocean acidification, climate change, carbon uptake, coral reefs

Primary actors

Madagascar: CNRO (Mamy Rajaonarivelo)
UK: NOC (Val Byfield), SatOC (David Cotton)

Stakeholders / End Users

CNRO, IH.SM, DGM

Marine ecologists; MPA managers

Introduction / Statement of the Problem

Understanding potential future impacts of ocean acidification on the health coral reefs is an important priority for Madagascar and the wider Western Indian Ocean. Satellite data can contribute, in conjunction with selected in situ measurements and ocean models.

Case study description

The case study will involve the following activities:

- Analysis of SST, chlorophyll, and wind data from satellites, using established models to relate these parameters to ocean uptake/release of CO2, and from this to pCO2 and pH.
- Analysis of available in situ data from CNRO (pH, alkalinity, pCO2, temperature, salinity) combining this with the satellite data to map seasonal variability in ocean acidity.
- Combine the maps with mapped coral reef locations to assess potential vulnerability of coral reefs to ocean acidification caused by increasing concentrations of atmospheric CO2.

Expected Impacts

Long Term Primary Impact: After end of Project (> 2020)
Marine scientists, MPA managers and policy makers responsible for climate change adaptation sustainable development of marine living resources will gain improved understanding of ocean acidification and its potential impacts on Madagascar's coral reefs, resulting in better management of this important marine ecosystem.

Secondary Impact: CRISE Case study report March 2019, CNRO research activity in this area will continue into subsequent years.

CNRO will benefit from increased capacity to carry out research into ocean acidification and assess its potential impacts on Madagascar's coral reefs.

SDG 14.2, 14.3