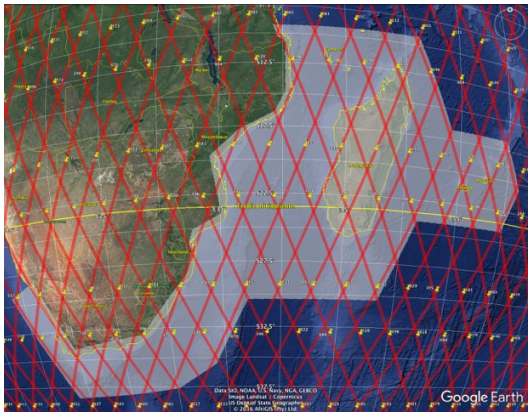
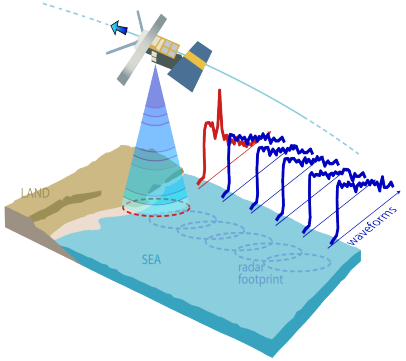
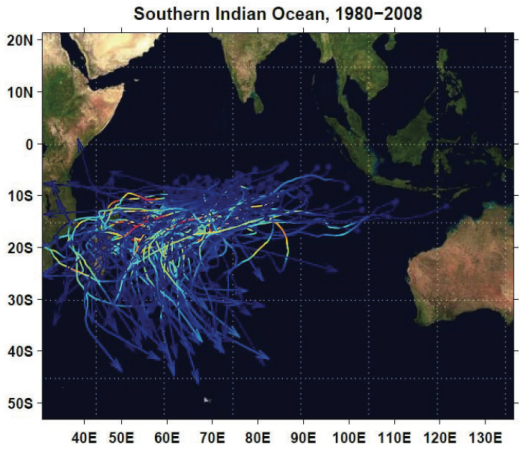
CRISe – Coastal Risk Information Service

UKSA International Partnership Programme







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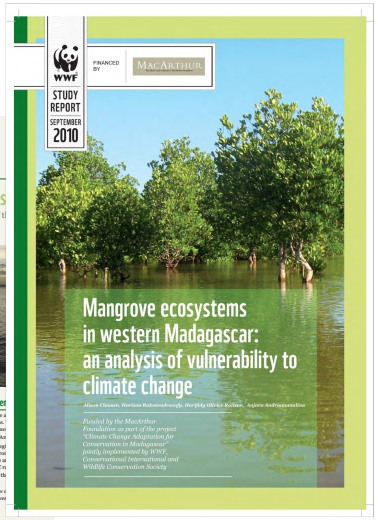

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CRISe Kick Off Meeting - Objectives

- To introduce the UK Space Agency's International Partnership Programme and the C-RISe project.
- To understand the interests, requirements of our partners, and the local resources available.
- To review the plans, and adjust if necessary. In particular looking to:
  - Specify the data products, CRISe service content and Case Study details
  - Establish training requirements
- Agree next steps
- Get to know each other!

UKSA International Partnership Programme

IPP is:

- A *5 year programme* run by the UK Space Agency.
- Objective is to deliver a *sustainable, economic or societal benefit* to undeveloped nations and developing economies.
- Required to *be fully ODA compliant* and to be delivered in line with *UN sustainability goals*.
- Seeks to *maximise the practical impact* on lives of people living in developing countries by partnering with these countries to use space solutions to solve their specific development challenges, and so increase their capacity.
- The projects within IPP span a whole range of themes; *reducing deforestation, disaster response, land-use monitoring, reducing maritime problems and deploying renewable energy.*

C-RISe Overview: Objectives

- **C-RISe:** A 3 year project to develop, deliver and evaluate a Coastal Risk Information service to South Africa, Mozambique and Madagascar
- Project Objectives:
  - Deliver a **Coastal Risk Information service**, providing satellite-derived information about sea level, wind and waves to support coastal vulnerability assessment and hazard management efforts.
  - Apply and evaluate the C-RISe service through a set of **Use Cases**, applying the C-RISe products to end use applications that address local priorities.
  - Build **local capacity** to use satellite data to provide **scientific decision support** for strategy development, governance and management of coastal areas to increase resilience to coastal hazards

C-RISe: Timing

The main C-RISe programme will run over three years: Dec ‘16 – Nov ‘19, in three phases:

Phase 1 - Preparation Phase (Dec ‘16 - Nov ‘17):

Service and Use Case Specification; Data Identification, Acquisition and Processing; Training Preparation**;** Regional Kick Off Workshops

Phase 2 - Delivery Phase (Nov ‘17- Nov ‘18):

Service Implementation & Delivery; Product Validation; Use Case Application & Evaluation; Training Workshops.

Phase 3 - Review and Roadmap Phase (Nov ‘18- Nov ‘19):

Evaluation; Review; Regional Showcase; Road Map and Business Case

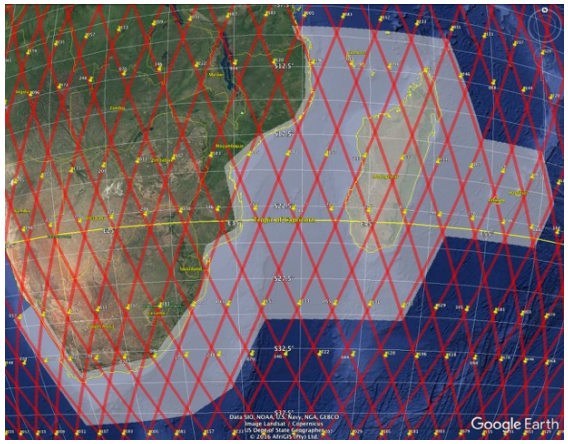
Plus a 4 month **Follow Up Review phase**: (Aug ‘20 – Nov ‘20)**:**

Follow up visit to C-RISe partners to review ongoing take up and benefits

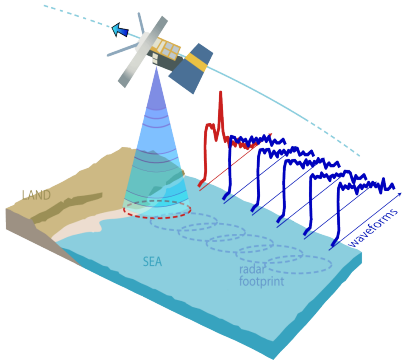
C-RISe: Products

- **What Products / Information will CRISe deliver?**

- Satellite-derived data on sea level, wind speed and wave heights, together with statistics derived from these data, and from local tide gauge data.
- Validation against local data sources and analyses of regional, seasonal and inter-annual variability.
- Delivered through a regional geo-spatial information tool: CSIR's OCIMS (Oceans and Coasts Information Management System)



Parameter	Description	Time Coverage	Satellites
Total Water Level Envelope, significant wave height, surface radar backscatter	Along track data from the NOC coastal processor	2002-2016	Jason-1, Jason-2, Jason-3
Significant Wave Height and Wind Speed Climatologies	Monthly, 1° x 1° gridded climatologies, from Globwave	1992-2014	ERS-1, ERS-2, Envisat, Topex, Jason-1, 2,3
Significant Wave Height, wind speed	Near Real Time along track data	Daily updated	Jason-2,
Wind speed and wind direction	Near Real Time data across scatterometer swath (25km resolution)	Daily updated	Metop/ ASCAT-A



C-RISe Use Cases

- Use Cases will provide the basis for practical implementation and the Monitoring and Evaluation of the CRISe service in each partner country – testing the usefulness and benefits of the service in real life application
- The Use Cases are now being revised following the input received during discussions with regional partners in February 2017

C-RISe: Capacity Development and Knowledge Exchange

- A key objective of CRISe is to develop local capacity to use coastal altimetry data in combination with other data sets and information sources, at two levels
  - Scientific Researchers
  - Non-Government and Government Organisations and their advisors

- Three sets of workshops are planned

  Workshop 1 (Nov 2017): C-RISe introduction, data analysis and validation.

  Workshop 2 (Feb 2018): Training for Tools to apply satellite data to coastal risk. Timed to support the implementation of the Use Cases.

  Regional Conference and training day (Feb 2019). Present C-RISe products and validation results, Use Cases, Monitoring and Evaluation outcome

- Training material will include Bilko software and tutorials, and software tools for display and analysis of C-RISe data and coastal/marine data

- Communicate project knowledge to the wider space & development sectors.
  - Project web-site
  - Presentations at conferences & to potential users in wider Asia-Pacific region

C-RISe: Project Team and Contributions - UK

- **Satellite Oceanographic Consultants Ltd**
  - Lead partner.
  - Leads WP1000 (Service Specification), WP7000 (Project Management)
  - UK Lead to WP3000 (CRISe Portal Implementation and Delivery)
  - Contributes to WP2000 (Data Processing, Product Generation and Validation), with wind and wave climatologies, and Near Real Time wind and wave data.
  - Also contributes to WP4000 (Use Cases), WP5000 (Capacity Development), WP6000 (Monitoring and Evaluation), and WP8000 (Knowledge Exchange)

- **National Oceanography Centre**
  - Technical / Scientific Lead
  - Leads WP2000 (Data Processing,…), WP4000 (Use Cases), WP5000 (Capacity Development), WP6000 (Monitoring and Evaluation), and WP8000 (Knowledge Exchange)

- **Bilko Development Ltd**
  - Contributes to WP5000 (Capacity Development), by developing the Bilko software to include routines needed to access and analyse the C-RISe data and other satellite data required for use case development.

C-RISe: Project Team and Contributions – International

- **CSIR** (Council for Scientific and Industrial Research, South Africa): Lead for WP3000, integrating the C-RISe data sets into OCIMS. Leads use case WP4100, contributes to WP1000 and WP6000.
- **INAHINA** (Mozambique Hydrographic Office): Provide tide gauge data, and additional data sets for validation (e.g. wave buoy data, hydrodynamic model output. Participates in training, data validation, and co-delivers a use case.
- **Universidade Eduardo Mondlane** (Mozambique) hosts Mozambique training courses. Will supervise undergraduate and graduate level projects using the data and work with INAHINA on a use case (WP4500).
- **DGM** (Madagascar Met Office) will contribute data from coastal met stations. Will lead a use case on the impact of an accurate tidal prediction service. Will facilitate wider dissemination of the C-RISe data through relevant government channels.
- **CNRO** (Madagascar Oceanographic Research Centre) will host the Madagascan training courses and supervise undergraduate and graduate level projects using the data and work with DGM on their use case. CNRO will contribute Hajanirina Razafindrainibe's time as the central co-ordinator in Madagascar for the project.

C-RISe: Project Team and Contributions – International

- **IH.SM** (Marine and Fisheries Reseach Institute within the University of Toliara) will provide students with opportunity to participate in the project. IH.SM host the National Data Centre and will make available any relevant data for validation and also hold a copy of the final products as a national data set.

- **WWF Madagascar Country Office** will provide input to the data inventory and lead WP4200, a use case in at least one of the coastal ecosystems of their three priority seascapes. WWF staff will participate in training in satellite data use and meetings/workshops held during the project.

- **Conservation International** will apply sea level, wind and wave climatology data to ongoing management of Ambodivahibe MPA. CI will contribute to the user specifications, assist with M&E activities, and take part in the in-country training.

C-RISe: Year 1 – Meetings

Meeting	Objective	Who	Where	Date	
Kick Off	Administrative Project Kick Off	UKSA, SatOC, NOC	UK	12/ 16	0.5d
Regional Kick Off	Regional Kick Off Workshop: Project Introduction Requirements Review, Use Case Planning, Data resources review,	SatOC, NOC, Local partners (TBD)	RSA, MOZ. MDG.	02/17	3 x 3d
Service Specification and Products Review	Presentation and review of Service Specification. Review of Use Case plans Report on C-Rise products delivery status	SatOC, NOC, UKSA, Regional partners by webex as poss	UK	08/17	1 d
C-RISe Implementation and Validation workshops	Workshops: • Deliver & present C-RISe processed data • Deliver resources necessary for use cases • Provide training for validation of C-RISe products by local scientists • Implement C-RISe service locally • Review and confirm local evaluation actions	NOC, SatOC, Local partners (Met Offices, INAHINA, Students)	RSA, MOZ. MDG.	11/17	3 x 5d