



PROJECT INCEPTION REPORT

Collation and compilation of Multi-Scale and Multi-Resolution Bathymetric Data in the Western Indian Ocean (WIOBathy)

Compiled by:

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Table of Contents

1.0 PROJECT OVERVIEW	3
2.0 INCEPTION PHASE DISCUSSIONS AND ACTIVITIES	4
2.1 Project Introduction	4
2.2 Data QA/QC.....	4
Table 1: Forward Actions and highlights based on the Question and Answers Session.....	5
2.3 The Project Team and Roles	6
Table 2: Shows the main project team and their specific roles in the project.	6
2.4 Project Schedule	8
Table 3: Project Schedule and deliverable timelines.....	8
3.0 ANNEXES	10
Annex 1: Attendees.....	10
Annex 2: Meeting Programme	11



1.0 PROJECT OVERVIEW

The Western Indian Ocean (WIO) countries of interest in the WIOBathy project boast a combined EEZ covering over $6.0 \times 10^6 \text{ Km}^2$. Most of the maritime space in the WIO region is covered by minimal high-resolution bathymetry data. Several maritime states and joint expeditions have over time collected bathymetry data for various objectives within the Indian Ocean and the WIO region, and there have been numerous scientific expeditions and surveys carried out, yet little of this data has been made available for integration into the GEBCO map. The data collected are fragmented, hosted by different individuals and institutions, and mostly exist in hard copy paper format with limited access to raw data.

Therefore, the WIOBathy project seeks to conduct a regional data mining effort to identify existing bathymetry data and collect and consolidate it to produce the first-ever bathymetry map of the WIO region. The project leverages the Nippon Foundation - GEBCO Training Program Alumni network from the region and their established professional networks. The participating countries include Kenya, Tanzania, South Africa, Madagascar, Mauritius and Mozambique. Collaboration opportunities with WIO countries that do not have GEBCO alumni and neighboring countries to the West Indian Ocean are still open.

The overall methodology will involve:

- Compiling available multi-scale and multi-resolution data (SBES, MBES, LIDAR, crowdsourced data, SDB, etc.).
- Digitizing official paper charts to extract soundings (*.xyz) and contours (official navigation charts).
- Undertaking quality control (QC) per the Seabed2030 Atlantic and Indian Ocean Regional Center (AIORC) workflows.

On completion of the project, the expected outputs will include:

- A first WIO region compiled Bathymetry grid.
- Compiled and quality-controlled data.
- Enriched GEBCO grid through the addition of new data.

The two main products to be delivered by this proposed project are:

- Cleaned and curated national grids with accompanying metadata
- The first version of the WIO region (WIOBathy Version_1) gridded bathymetry chart

2.0 INCEPTION PHASE DISCUSSIONS AND ACTIVITIES

The Inception Workshop was conducted on the 6th of October 2023 to introduce the project to the partners, the perspective, and input to project components and activities as identified in the Project Document. The purpose of this workshop was to provide an opportunity to review the approved Project Document and seek stakeholder contribution to the overall approach, components, and activities that incorporate any new information.

2.1 Project Introduction

Dr. Amon Kimeli officially commenced the first WIOBathy project meeting by welcoming everyone on board. He then gave a presentation on the overview of the project as illustrated in the project proposal briefly, as most in attendance were already quite familiar with it. Referencing item in annex 2 below, he talked about the project scope which covers the WIO region countries, the motivation behind the project and the estimated project implementation period, the allocated budget, and the roles and responsibilities of each team member. He continued to highlight the main objective of the project, the general methodology that will be adopted, and the expected outputs.

2.2 Data QA/QC

Dr. Vicki Ferrini gave a brief overview of how data from different countries, sources, data types, and formats will be handled and put through quality control. The WIOBathy project will adopt the bathymetric data processing workflows developed at the AIORC to ensure that they meet the necessary quality control standards with the ultimate aim of being incorporated into the GEBCO grid. Some of the highlighted topics were;

- Assigning different weights to data acquired using different sources e.g. MBES vs SBES.
- Adopting tools used at AIORC for the WIOBathy project e.g. MBSsystem for processing swath files and GEOMAP APP for visualization and Quality control in the context of existing data on the GEBCO grid.

Table 1: Forward Actions and highlights based on the Question and Answers Session.

ID	Item Description	Responsibility
1	The team at AIORC led by Vicki will develop materials and conduct a webinar training on the workflows that can be adopted by the WIOBathy project. This training will aim to standardize the workflows across all the participating countries to consolidate data and develop a regional grid. It is expected the GEBCO Alumni have a working knowledge of working with bathymetric data.	Vicki Ferrini Tinah Martin
2	It was suggested that each country team should identify the types of data (based on acquisition methods) and formats that they have available and as such have the webinar training focusing on specific types of data.	All
3	The project provides for in-country working group workshops.	Amon Kimeli Daina Mathai
4	There is a provision for a 1TB external drive for data storage for each participating country.	Amon Kimeli Daina Mathai
5	The GEBCO contribution form and metadata sheet will be adopted and modified on a case basis (or based on each country's situation) to be used to request data from different sources.	All
6	The project lead will coordinate with Seabed 2030 to generate a letter for any country/institution that requires an MOU for access to their data.	Amon Kimeli
7	Any constraints on access to data such as the maximum resolution that can be publicly shared will be discussed case by case.	All
10	Establish contact with the hydrographic office of Tanzania for the possibility of collaboration as the office handles Tanzania's hydrographic data.	Fadhili Malesa Amon Kimeli
11	Create a common platform to share materials and information.	Amon Kimeli

	WIOBathy Google Drive folder and email list.	Daina Mathai
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2.3 The Project Team and Roles

Table 2: Shows the main project team and their specific roles in the project.

Country	GEBCO Alumni	Role
Kenya	Amon Kimeli	Project Lead & Coordinator
	Victoria Obura	Data Manager and Kenya Liaison
	Daina Mathai	Data manager/Logistics and Administrative Support
Tanzania	Fadhili Malesa	Data manager and Tanzania Liaison
Mauritius	Sattiaburuth Seeboruth	Data Manager and Mauritius Liaison
	Hemanaden Runghen	Data Manager
	Keshav Sauba	Data Manager
Madagascar	Tinah Martin	Data manager and Madagascar Liaison.
Mozambique	Noca Bernardo Furaca Da Silva	Data Manager and Mozambique Liaison
South Africa	Prof. Andrew Green	Data Manager

	Dr. Hayley Cawthra	Data Manager
Partners & collaborators		
Madagascar	Andry H Rasolomaharavo	Collaborator
South Africa	Rochelle Wigley	Collaborator
	Neil Tinmouth	Collaborator

Co-opted Team Members (None GEBCO Alumni)		
Country	Name	Roles
USA	Dr. Vicki Ferrini	Project Co-Lead, responsible for assisting the team through the sharing of tools and workflows. Will ensure the integration of data within the regional compilation built by the Atlantic and Indian Ocean Regional Center.
South Africa	Prof Andrew Green	Professor - University of KwaZulu-Natal, South Africa
South Africa	Dr. Hayley Cawthra	Council for Geoscience, and a Research Associate at the Nelson Mandela University in the African Centre for Coastal Palaeoscience.
Mozambique	Noca Bernado Furaca Da Silva	Lecturer - Eduardo Mondlane University, Mozambique

2.4 Project Schedule

Table 3: Project Schedule and deliverable timelines

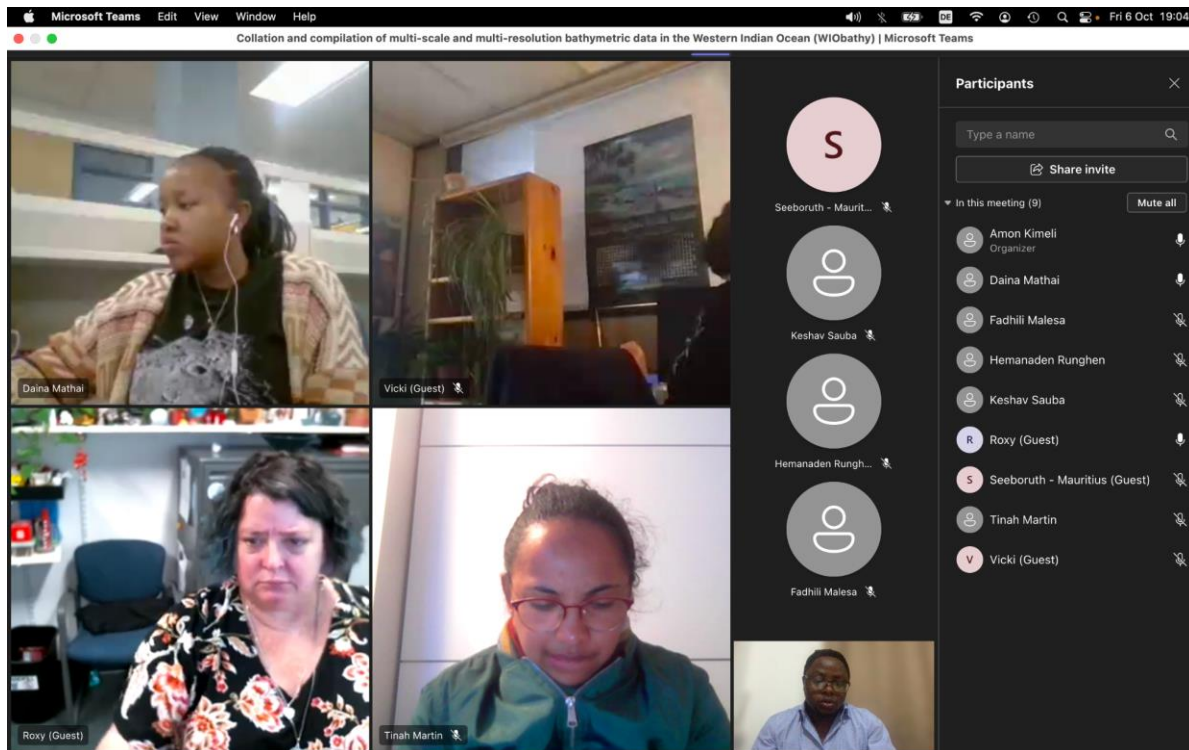
INDICATIVE OPERATIONAL PLAN								
PROJECT TITLE: Collation and Compilation of Multi-Scale and Multi-Resolution Bathymetric Data in the Western Indian Ocean (WIOBathy)								
				YEAR 1				
	Activity	Sub-activity		Q 1	Q 2	Q 3	Q 4	Responsible person [all = project partners responsible]
1.1	Regional inception meeting	Establish country teams		x				all
		Review, agree on, and finalize the role and responsibility, of various national participants for achieving their national & regional project outcomes		x				all
		Set up regional bathymetry working group		x				all
1.2	Regional Training	Training on tools available to collate and analyze bathymetry data		x				all
		Data analysis training		x				all
1.3	Identification of existing bathymetry data in the partner/collaborating countries	Identify key bathymetry data institutions		x	x			Country leads & all
		Officially request for data and seeking authorizations for data sharing						Country leads & PI
1.4	Assembling the country bathymetry data, sub-sampling	QA/QC			x			PI & country leads

	and generation of metadata							
1.5	Regional workshop to collate regional data and analyze	Combination of national bathy data to WIO bathy data			x	x		All
		QA/QC protocols for the national and regional data			x	x		Country leads and project coordinator
		Visualization of combined data			x	x		Country leads and project coordinator
		Generation of WIO bathymetry grid				x	x	PI and Seabed2030 Atlantic & Indian Ocean regional Office
1.6	Project finalization and product presentation workshop					x	x	Project coordinator
PROJECT MANAGEMENT ACTIVITIES								
1.7	Administrative steps, reporting			x	x	x	x	all

3.0 ANNEXES

Annex 1: Attendees

Name	Country	Attendance
Dr Amon Kimeli	Kenya	✓
Ms Daina Mathai	Kenya	✓
Ms Victoria Obura	Kenya	✓
Dr Rochelle Wigley	South Africa	✓
Mr Fadhili Malesa	Tanzania	✓
Mr Keshav Sauba	Mauritius	✓
Mr Sattiaburuth Seeboruth	Mauritius	✓
Dr Hemanaden Runghen	Mauritius	✓
Noca Bernardo Furaca Da Silva	Mozambique	✓
Ms Tina Martin	Madagascar/ AIORC	✓
Dr Vicki Ferrini	AIORC	✓
Prof Andrew Green	South Africa	Apologies
Dr Hayley Cawthra	South Africa	Apologies
Andry H Rasolomaharavo	Madagascar	Apologies



Annex 2: Meeting Programme

	Responsible	Time (EAT)
Introduction	Dr Amon Kimeli, Project Lead, KMFRI	
Project Introduction		
<ul style="list-style-type: none">• Project Scope	Dr Amon Kimeli (KMFRI, Kenya)	1905 hrs – 1920 hrs
<ul style="list-style-type: none">• Timelines		
<ul style="list-style-type: none">• Strategy		
<ul style="list-style-type: none">• Budget		
<ul style="list-style-type: none">• Finance management		
<ul style="list-style-type: none">• Roles & responsibilities		
Project Objectives		
<ul style="list-style-type: none">• Specific Objectives	Dr Amon Kimeli (KMFRI, Kenya)	1920 hrs -1925 hrs
<ul style="list-style-type: none">• Outputs		
Data QA/QC	Dr Vicki Ferrini (Head of Seabed 2030 Atlantic & Indian Ocean Regional center)	1925 hrs – 1940 hrs
Questions and Discussions	Plenary	1940 hrs – 2000 hrs