

# FIELD SCHOOL ANNOUNCEMENT

## Affordable and standardized practices for coastal water monitoring (COLaB)



A training course in Kenya from September 8 to 14th, 2024

**A Joint action between COLaB (Coastal Observation Lab in a Box) and international research project VOKCE (Vulnerability of Kenyan Coastal Ecosystems)**



The VOKCE project is pleased to announce a training field camp to be held in collaboration with the Centre National de la Recherche Scientifique (CNRS), the Kenya Marine and Fisheries Research Institute (KMFRI), the University of Nairobi (UoN) and the COLaB international initiative that aims to provide low-cost tools and standardised methods for determining essential physical, biological and chemical variables in coastal waters. The aim of this training field camp is to build scientific expertise, share experiences, strengthen capacities and build partnerships on environmental monitoring of coastal socio-ecosystems. The broader aim of the training is to address SDG 14 of the United Nations 2030 Agenda and the challenges of the UN Decade of Ocean Science for Sustainable Development.

**Motivation.** Kenyan coastal ecosystems, as in other part of the world, are suffering from climate change (marine heatwaves, de-oxygenation), acidification, pollution, erosion among others. Kenyan coastal regions are also transitioning due to anthropogenic activities linked to the economic development and growing coastal cities leading also to the exposure of coastal ecosystems to multiple non-climatic stressors.

The oceans hold the key for projecting future likely scenarios to help policy makers on climate adaptations and mitigation. Most studies on climate change have been undertaken in the northern hemisphere with only a few studies in the south. The Indian ocean in particular, is also known to be the least studied ocean basin while warming at a faster rate than the global ocean, hence hindering our understanding of global and regional climate interrelationships in the context of temperature rise.

The coastal zone also suffers from anthropogenic activities, through the continuous discharge of chemical waste and occasional oil spills that contribute to enhanced contamination of the coastal zone. Among other chemical hazards, plastics have also raised concern due to their increased production and use over more than 60 decades, poor management of waste and subsequent ubiquity in coastal and oceanic regions. Growth and development of coastal cities that is being accelerated by the interest in blue economy is leading to unprecedented coastal pollution from all kinds. Assessing and documenting marine pollution in terms of extent, type and likely sources will provide data and information useful for policy makers thereby fulfilling SDG14.1.

**During this summer field camp participants will be exposed to COLaB** low-cost tools and standardised methods for determining essential physical, biological and chemical variables in the coastal area. These will be accompanied by in-person and online training, in order to develop marine science capacity multi-skilled oceanographers in under-resourced countries. The proposed field course includes water and sediment sampling methods, and a range of physical (CTD and current) and biogeochemical methods (e.g. water quality assessments in the water column for pigments, nutrients, pH, and microplastics across a salinity gradient in a coastal Kenyan embayment. It will include comparison of commercial and low-cost, open-source instruments, and is intended to demonstrate that high-quality oceanographic data can be collected without need of a formal research vessel or fully-equipped laboratory. Data presentation methods will also be explored.

**Collaborators:** Researchers from Kenya (KMFRI and UoN), United Kingdom (University of Edinburgh) and France (Centre National de la Recherche Scientifique, CNRS).

**Goal:** To unravel the impacts of climate and non-climate stressors on blue coastal ecosystems; To demonstrate essential techniques for characterising physical and biogeochemical properties of coastal environments.

**Objectives:** i) Build capacity in environmental variables monitoring in Kenya ii) Develop an assessment protocol for non-climate stressors such as Suspended Particulate Matter, nutrients, chlorophyll, pH, hydrocarbons, microplastics, etc....

**Outcome:** Data and information useful in informing policy including contribution of information for marine spatial planning (MSP); Skills development in coastal oceanographic samples and data collection.

**Purpose of this call:** Invite students to apply for consideration for a 1-week field camp from September 8 to 14<sup>th</sup>, 2024

**Venue of the field camp:** The camp and courses will be conducted at KMFRI, Mombasa, Kenya. The program will run for 1 week and selected students will be expected to attend the full week of training. The training will cover various issues related to climate change and marine pollution to which coastal ecosystems are exposed. The field school is targeting Masters students undertaking environmental studies with an interest in marine science. The students should be in their proposal writing stage as this field camp can serve as an opportunity to identify a researchable topics of their study.

**Application:** If interested in the summer school submit your application to:

[amuthumbi@uonbi.ac.ke](mailto:amuthumbi@uonbi.ac.ke)

[juku988@gmail.com](mailto:juku988@gmail.com)

[marie-alexandrine.sicre@locean.ipsl.fr](mailto:marie-alexandrine.sicre@locean.ipsl.fr)

By the **April 30<sup>th</sup>, 2024** and provide the following:

1. Current Curriculum Vitae
2. Letter of admission to the course you are doing,
3. Certified copy of your BSc certificate,
4. Certified copy of fourth year transcripts,
5. Certified copy of transcript for the 1<sup>st</sup> year of Master of Science course or a letter of introduction from the head of the department.
6. Draft concept on the topic of interest that you would like to pursue for your research work.

Expectations: At the end of the training, students will be expected to provide a refined concept for their research proposal as per the requirements of their Master of Sciences study program.

Selection criteria: MSc students who have completed 1<sup>st</sup> year of study (coursework) and intend to start the second year of study (research and thesis writing). They must be following a course in an environmental/marine-related program.

