



Workshop to Orient Undergraduate Students to the Coastal and Regional Ocean Community (CROCO) model

1. Introduction

Dr. Majuto Clement Manyilizu (PhD), Lecturer at College of Informatics and Virtual Education at the University of Dodoma, and team member for International Research Group with Southern countries (GDRI-Sud) project funded by the Institut de Recherche pour le Développement (IRD) program in France. The project targets to consolidate partnership for users/developers for the Coastal and Regional Ocean Community (CROCO) model in Southern countries and IRD program. Furthermore, the project targets to consolidate collaboration and contribution of CROCO to the current multi-institutional French Research Group (GDR-CROCO) with individual experts, as well as universities/laboratories in the Southern countries.

The University of Dodoma is a new public university established in February, 2007 to enhance academic situation in Tanzania and the region. It established different undergraduate programmes including those related to marine sciences/aquaculture. However, these undergraduate students appear to lack knowledge on coastal and ocean models as well as computing techniques as they work on their final year projects. Furthermore, these students lack proper orientation towards further studies so that they can develop their careers in coastal and ocean sciences particularly in modeling and computation. Since development of careers of these students is crucial for them and the field related to ocean/marine sciences, this project organized the Workshop to Orient Undergraduate Students at the University of Dodoma to the Coastal and Regional Ocean Community (CROCO) model under the GDRI-CROCO support. The three days' workshop was conducted at the College of Informatics and Virtual Education, University of Dodoma in Tanzania from 9 to 11th November 2021 for about 27 undergraduate students interested in coastal and regional ocean models.

2. Objectives

The objectives of the workshop were:

- i. To provide participants an understanding of the ocean models, the Coastal and Regional Ocean Community model (CROCO) as well as data computational language

- ii. To enable graduate students at the University of Dodoma to analyses and interpret their research results.
- iii. To provide participants an understanding to interact with different scientists in ocean science in the country
- iv. To provide awareness and overview of the Coastal and Regional Ocean Community model (CROCO)
- v. To enhance collaboration among people work the ocean science in Tanzania.

3. Expected outcomes

At the end of this workshop, the expected outcomes were;

- i. Participants gained skills on the ocean models, the Coastal and Regional Ocean Community model (CROCO) as well as data computational language
- ii. Participants were aware with the Coastal and Regional Ocean Community model (CROCO) as they can use it by becoming members
- iii. New scientific collaborations have developed among participants and between the IRD which has funded the “Groupement d’Intérêt de Recherche International” (GDRI) Sud CROCO and the University of Dodoma;
- iv. support initiatives for organizing local workshops is be achieved
- v. Participants were motivated to joining Masters and PhD in ocean sciences

4. Workshop Operations and Contents

The Workshop to Orient Undergraduate Students at the University of Dodoma to the Coastal and Regional Ocean Community (CROCO) model was conducted at the College of Informatics and Virtual Education, University of Dodoma in Tanzania from 9 to 11th November 2021. Prof. Leonard Mselle, Principal of the College of Informatics and Virtual Education at the University of Dodoma officially opened the workshop. About 27 undergraduate students who are interested in coastal and regional ocean models attended the workshop for fully participation in all three days. Figure 1 shows a group photo for opening the workshop. Figure 2 shows workshop sessions for day 1 as Dr. Majuto Manyilizu, the Project and workshop Coordinator as well as Lecturer from College of Informatics and Virtual Education at the University of Dodoma in Tanzania presenting about Introduction to Coastal and Regional Ocean Community (CROCO) model (Figure 2, Top photo). In the same day, Dr. Issufo Halo from Department of Forestry, Fisheries and Environment (DFFE) in South Africa virtually presented on the topic entitled “The Concepts of Ocean Models, Processes and Numerical Mathematics” (Figure 2, Bottom photo).



Figure 1: Workshop opening group photo in day 1 on 9 November 2021

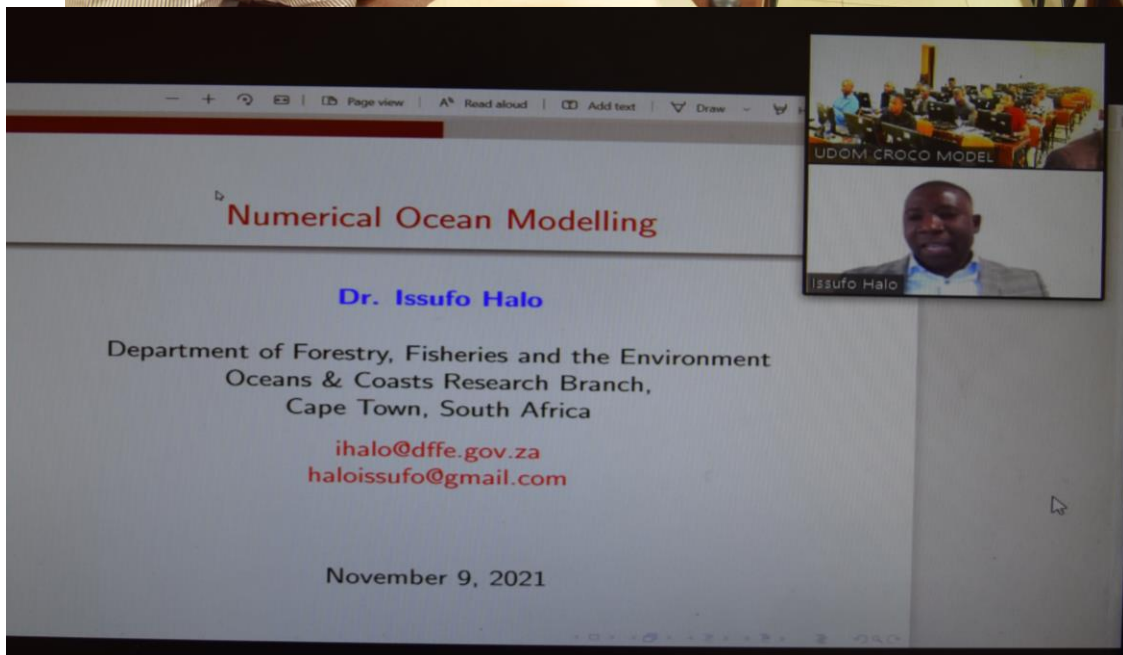


Figure 2: Photos for the workshop sessions in day 1 on 9 November, 2021 with Dr. Majuto Manyilizu (top photo) and Dr. Issufo Halo (bottom photo)

The workshop sessions in day 2 and day 3 focused on ocean computing languages and satellite data in addition to their practical related to CROCO models. In day 2, Dr. Edward Moto from Department of Biology, College of Natural and Mathematical Sciences at the University of Dodoma presented on Introduction to Ocean Satellite Data (Figure 3, top photo). In the same day, Dr. Siajali Pamba from Department of Aquatic Sciences and Fisheries Technology, School of Aquatic Sciences and Fisheries at the University of Dar es Salaam presented on Introduction to Ocean Computing Language (MATLAB) as shown in Figure 3 (bottom photo). Extensive hands-on activities were conducted to all participants under supervision of all facilitators in the rest of day 2 and in day 3.

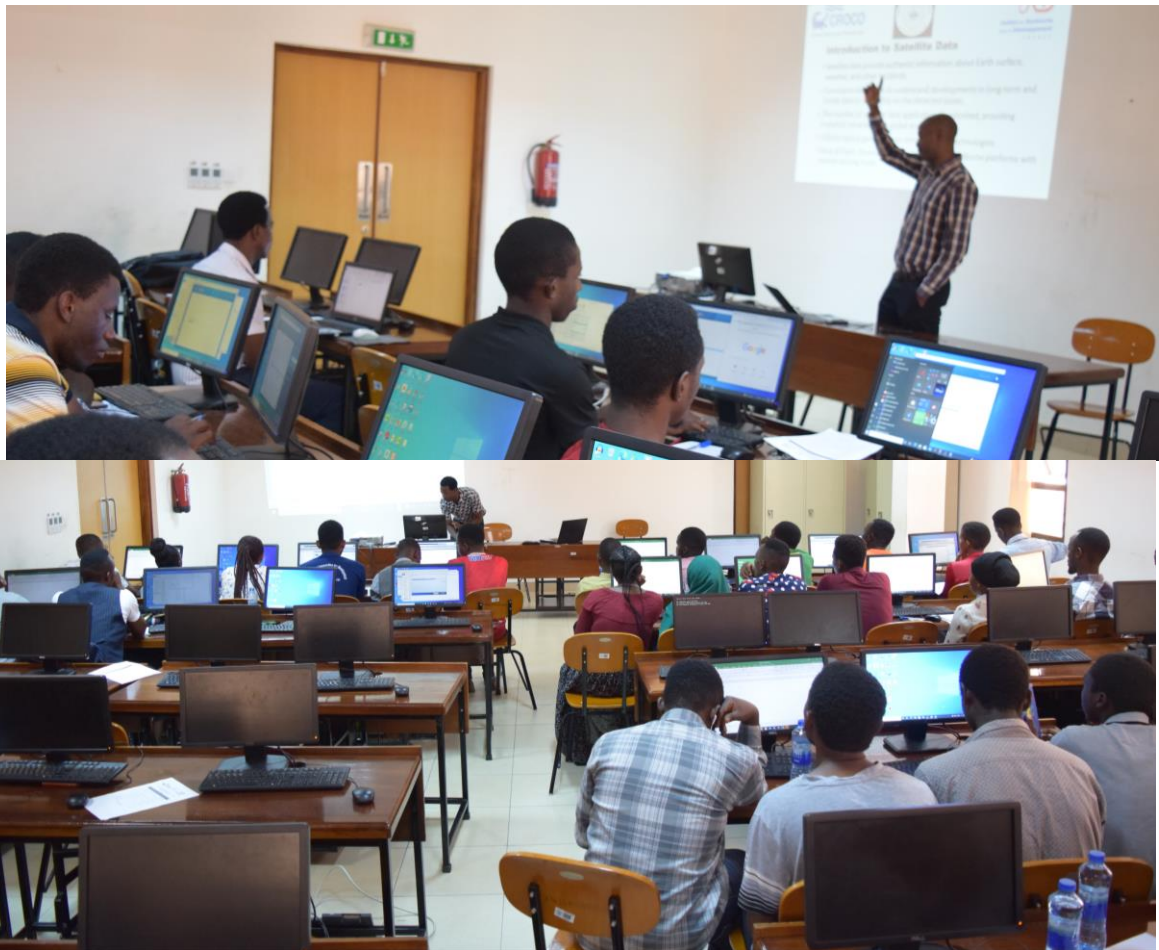


Figure 3: Photos for the workshop sessions in day 2 and day 3 ton 10 and 11 November, 2021 with Dr. Edward Moto (top photo) and Dr. Siajali Pamba (bottom photo)

Workshop evaluation and exploring opportunities in the career and professional development for the participants as well as workshop closing were done in the third day of the workshop on 11 November 2021. All participants enjoyed the workshop in terms of contents, presentation styles, learning environment, food, drinks, software and hardware which used. The participants suggested to have more workshops of such kind frequently. After evaluation and discussing opportunities, Dr. Majuto Manyilizu who is the Workshop Coordinator invited the

Guest of honor to close the workshop (Figure 4, top photo). Dr. Ambrose Kessy, Director of Research and Publications at the University of Dodoma was the workshop closing Guest of honour (Figure4, middle photo). On behalf of the University of Dodoma, Dr. Kessy gratefully thanked the Workshop Coordinator, facilitators, participants and Institut de Recherché pour le Développement (IRD) for facilitating this workshop. He encouraged the organization of more workshop at the University of Dodoma as they paly vital roles in capacity building of staff and students. Thereafter, workshop facilitators, participants and closing Guest of honour took a group photo for record keeping (Figure 4, bottom photo)



Figure 4: Photos for the workshop closing session in day 3 on 11 November, 2021 with Dr. Majuto Manyilizu (top photo) inviting Guest of Honour Dr. Ambrose Kessy to close (middle photo) and closing group photo (bottom photo)

5. Challenges and Benefits

The workshop was conducted well during the time. However, there were some challenges before and during workshop as well as benefits. As this is the first GDRI Sud-CROCO Tender call, the challenges regarding this project are as follows:

- i. Project currency exchange as the University of Dodoma doesn't have an account for Europe currency to which the original budget was proposed, the transferred amount in US dollars was directly changed the currency symbol only with the same amount. Such conversion led to financial deficit in budget caused re-budgeting of the received money.
- ii. Time and processes after project being accepted appear to be not clearly defined, as there were more additional requirements in order to accomplish project requirements as well as fund transfer. Such issues led to extension of project time.
- iii. There was commitment of the project steering committee in IRD to support third party/person to facilitate in the project. For this project, Dr. Issufo Halo was proposed to offer face to face facilitation during workshop. Project Coordinator requested for invitation letter, however, it seemed that there was no communication between the proposed facilitator, Dr. Halo and IRD. Thus, I decided to involve him virtually in order to fulfil the official invitation from the University of Dodoma
- iv. There was a large number of participants who were interested to participate in the workshop and even others decided to participate without prior notification as the number became 27 instead of 20. This increase in number of participants also affected the budget.

Benefits

- i. Participants gained skills on the ocean models, the Coastal and Regional Ocean Community model (CROCO) as well as data computational language
- ii. Participants became aware with the Coastal and Regional Ocean Community model (CROCO) as they can use it by becoming members
- iii. New scientific collaborations were developed among participants and between the IRD which has funded the "Groupement d'Intérêt de Recherche International" (GDRI) Sud CROCO and the University of Dodoma;
- iv. support initiatives for organizing local workshops was achieved as the University of Dodoma and University of Dar es Salaam participated to the workshop
- v. Participants were motivated to join Masters in further studies especially in ocean sciences in support of Coastal and Regional Ocean Community (CROCO) model.

6. Conclusion and Recommendation

The Workshop to Orient Undergraduate Students at the University of Dodoma to the Coastal and Regional Ocean Community (CROCO) model under support of the International Research Group with Southern countries (GDRI-Sud) project funded by the Institut de Recherché pour le Développement (IRD) program in France was conducted successfully. All participants, facilitators, and Management of University of Dodoma considered it positively. Major recommendations are to have more such projects which enhance collaboration especially between the University of Dodoma and International Institutions. Furthermore, the University of Dodoma would like to have Memorandum of Understanding (MoU) between the University and the Institut de Recherché pour le Développement (IRD) in France for long time and sustainable development collaboration in different aspects. Attached with this reports are relevant documents related to the workshop including timetable, budget, attendance sheet, payment sheets and some photos taken during the workshop.