

CLIVAR REPORT

Climate and Ocean: Variability, Predictability, and Change



Report on the Fourth Session of CLIVAR Eastern
Boundary Upwelling System Research Foci (EBUS RF)

Meeting Report

20-21 July 2019, Trieste, Italy

December 2019

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List of Actions

Action 1: Ryan to check with SCOR WG chair if the tentative agenda of the SCOR EBUS Conference could be shared among CLIVAR EBUS RF members (Ryan);

Action 2: Co-chairs of EBUS RF to check with Salvatore Arico (S.Arico@unesco.org) from IOC-UNESCO to confirm if IOC will organise a separate EBUS conference in 2020 or the IOC will merge its conference with the SCOR EBUS conference in 2021. Also, if there is any opportunity for CLIVAR EBUS RF to co-organise the conference (Ryan, Alban & Thomas);

Action 3: To check with the German funding to support students to attend EBUS related conferences. (Martin).

Action 4: Lead authors will coordinate with co-authors involved in each chapter to prepare and submit the first draft of the manuscript for the EBUS perspective-style paper by 15 September 2019, with an exception of chapter one lead by Thomas, which is expected to be completed by mid of October.

Action 5: To set up a doodle poll and send to all EBUS RF members to check their availability to the next EBUS RF meeting.

1. Background

The Fourth Session of CLIVAR Eastern Boundary Upwelling Systems Research Foci (EBUS RF-4) was held on 20-21 July 2019, at Trieste, Italy, hosted by the Abdus Salam International Centre for Theoretical Physics (ICTP), right after the ICTP-CLIVAR Summer School on Oceanic Eastern Boundary Upwelling Systems, jointly organised by CLIVAR EBUS RF and ICTP, on 15-19 July 2019. Ten EBUS RF members and an invited participant attended the EBUS RF-4 (see Annex 1 for List of Participants). The meeting was focused on the brainstorming and discussion on the EBUS perspective-style paper. The updates from SCOR WG-155 and discussion on next EBUS RF meeting were also covered by the meeting (see Annex 2 for Agenda).

2. Update on SCOR activities on EBUS

Being also the associated member of SCOR WG-155 on Eastern boundary upwelling systems (EBUS): diversity, coupled dynamics and sensitivity to climate change, Ryan Rykaczewski, one of the co-chairs of CLIVAR Eastern Boundary Upwelling System Research Foci (EBUS RF) briefly introduced the two upcoming events on EBUS planned by SCOR WG-155.

SCOR Open Science Conference on EBUS (Lima, Peru, 05 -10 September, 2021)

Open Science Conference on Eastern Boundary Upwelling Systems (EBUS): Past, Present and Future & Second International Conference on Humboldt Current System will be organised from 5 to 10 September 2021 at Centro de Convenciones de Lima, Peru. It is not clear whether this conference is the one originally initiated by IOC or not. CLIVAR is currently not a co-organiser of the conference, but listed as a potential sponsor only.

Actions:

- (1) Ryan to check with SCOR WG chair if the tentative agenda of the SCOR EBUS Conference could be shared among CLIVAR EBUS RF members (Ryan);
- (2) Co-chairs of EBUS RF to check with Salvatore Arico (S.Arico@unesco.org) from IOC-UNESCO to confirm if IOC will organise a separate EBUS conference in 2020 or the IOC will merge its conference with the SCOR EBUS conference in 2021. Also, if there is any opportunity for CLIVAR EBUS RF to co-organise the conference (Ryan, Alban & Thomas);
- (3) To check with the German funding to support students to attend EBUS related conferences. (Martin).

SCOR summer school of EBUS (Dakar, Senegal, 4-12 May 2020)

The SCOR Summer School on EBUS will be organised on 4-12 May 2020 at Ecole Supérieure Polytechnique in Dakar, Senegal, focusing on the changes in coastal upwelling systems. The overall budget estimation is 175,000 USD.

3. Discussion on EBUS Perspective Paper

The major focus of the EBUS RF-4 was the brainstorming and discussion on the EBUS perspective-style paper, which was proposed during the EBUS RF-3 in Washington D.C. USA, in December 2018. A draft outline was prepared before the EBUS RF-4, which formed the basis for the discussion. Six chapters for this paper have been formulated as below, with the brainstorming on content and figures for each chapter.

- (1) What controls the position/strength/seasonality of EBUSs? (Lead by **Thomas**, participate by Alban, Paquita & Martin)
- (2) How well do we understand the impact of topography/geometry/bathymetry upon EBUS? (Lead by **Paquita**, participate by Thomas, Ryan, Ivy, Annalisa & Martin)
- (3) How well do we know about the interaction with EBUS? (ecological, physical) (Lead by **Martin**, participated by Alban, Art, Paquita, Ivy, Uwe, Ryan & Annalisa)
- (4) Do the EBUSs affect climate? (do it upscale?) (Lead by **Alban**, Participated by Ivy, Ryan, Thomas, Rene, Thomas, & Art)
- (5) What is the sensitivity of EBUS to large scale climate variability changes & anthropogenic changes? (Lead by **Art**, participated by Martin, Alban, & Thomas)
- (6) What are the relative roles of fishing practices VS physical/geochemical processes? (Lead by **Ryan**, participate by Fei, Ivy) (Discussion point: resilience)

Timeline: 15 September 2019; mid of October for Chapter one led by Thomas.

Start with key outlines for each chapter:

- Why this is a question?
- What we know and what we don't know?
- What can we do to make a progress?
- Double-spaced two-page plus reference

Action 4: *Lead authors will coordinate with co-authors involved in each chapter to prepare and submit the first draft of the manuscript for the EBUS perspective-style paper by 15 September 2019, with an exception of chapter one lead by Thomas, which is expected to be completed by mid of October.*

4. Next EBUS RF meeting

The next (and final) EBUS RF meeting was proposed to be organised right after the 2020 Ocean Science Meeting, in San Diego, USA. The date is tentatively set on 22-23 February 2020. Art Miller and Uwe Send, members of the EBUS RF, expressed their willingness to be the local host for this meeting.

Action 5: *To set up a doodle poll and send to all EBUS RF members to check their availability to the next EBUS RF meeting.*



Figure: Group photo of the 4th Session of CLIVAR EBUS RF (Trieste, Italy)

Annex 1: List of Participants

Name	Institution	Country	Role
Ryan Rykaczewski	University of South Carolina	USA	Co-chair
Thomas Toniazzo	University of Bergen	Norway	Co-chair
Alban Lazar	LOCEAN-IPSL/Sorbonne Université	France	Co-chair
Annalisa Bracco	Georgia Institute of Technology	USA	Member
Art Miller	Scripps Institution of Oceanography	USA	Member
Paquita Zuidema	University of Miami	USA	Member
Uwe Send	Scripps Institution of Oceanography	USA	Member
Rene Garreaud	Universidad de Chile	Chile	Member
Martin Schmidt	Leibniz Institute for Baltic Sea Research Warnemünde	Germany	Member
Ivy Frenger	GEOMAR	Germany	Invited
Jing Li	International CLIVAR Project Office (ICPO)	China	ICPO Staff

Annex 2: Agenda

20 July 2019 (Saturday)

09:30	Update on SCOR activities on EBUS	Ryan
10:00	Overview of progress of the ‘perspective-style’ article on key uncertainties in EBUS research	Alban
11:00	Formulate the chapters of the EBUS ‘Perspective-style’ article	All
12:30	Lunch	
14:00	Discussion on questions to be included in each chapter	All
18:00	Adjourn	
19:30	Group dinner	

21 July 2019 (Sunday)

09:30	Discussion on the figures for the EBUS ‘Perspective-style’ article	All
11:00	Discussion on lead/co-authors for each chapter, timelines and format of the EBUS ‘Perspective-style’ article	All
12:00	Discussion on Panel business	Ryan, Alban & Thomas
13:30	Adjourn	