Session 01

SST patterns and dynamics of the Southern Senegal-Gambia upwelling center

Siny NDOYE[1,*], Xavier CAPET[2], Philippe ESTRADE[1], Bamol SOW[3], Dominique DAGORNE[4], Alban LAZAR[5], Amadou T. GAYE[1] and Patrice BREHMER[6]

[1]Laboratoire de Physique de l'Atmosphère et de l'Océan Siméon Fongang (LPAO-SF/ESP-UCAD), BP 5085 Dakar Fann, Sénégal
[2]CNRS- LOCEAN/IPSL Laboratory, 4 Place Jussieu, Paris 75252, France
[3]Laboratoire d'Océanographie, des Sciences de l'Environnement et du Climat (LOSEC) Département de Physique - UFR Sciences & Technologies, Université de Ziguinchor BP 523 Ziguinchor, Sénégal
[4] Institut de Recherche pour le Développement (IRD) - US IMAGO BP 70 29280 Plouzané, France
[5]CNRS-IRD-Sorbonne Universités (UPMC Univ. Paris 6)-MNHN, LOCEAN/IPSL Laboratory, 4 Place Jussieu, Paris 75252, France
[6]Institut de Recherche pour le Développement (IRD), ISRA/Centre de Recherche Océanographique de Dakar-Thiaroye (CRODT), UMR 195 LEMAR, BP 1386 Dakar, Senegal

*Correspondance: Tél: (+221) 77 76 00 287; Courriel: ndoyesiny@yahoo.fr (S. NDOYE)

Reçu le 09/12/2014; publié le 15/05/2015
AWA © MS WP1_S1_10_104

Abstract

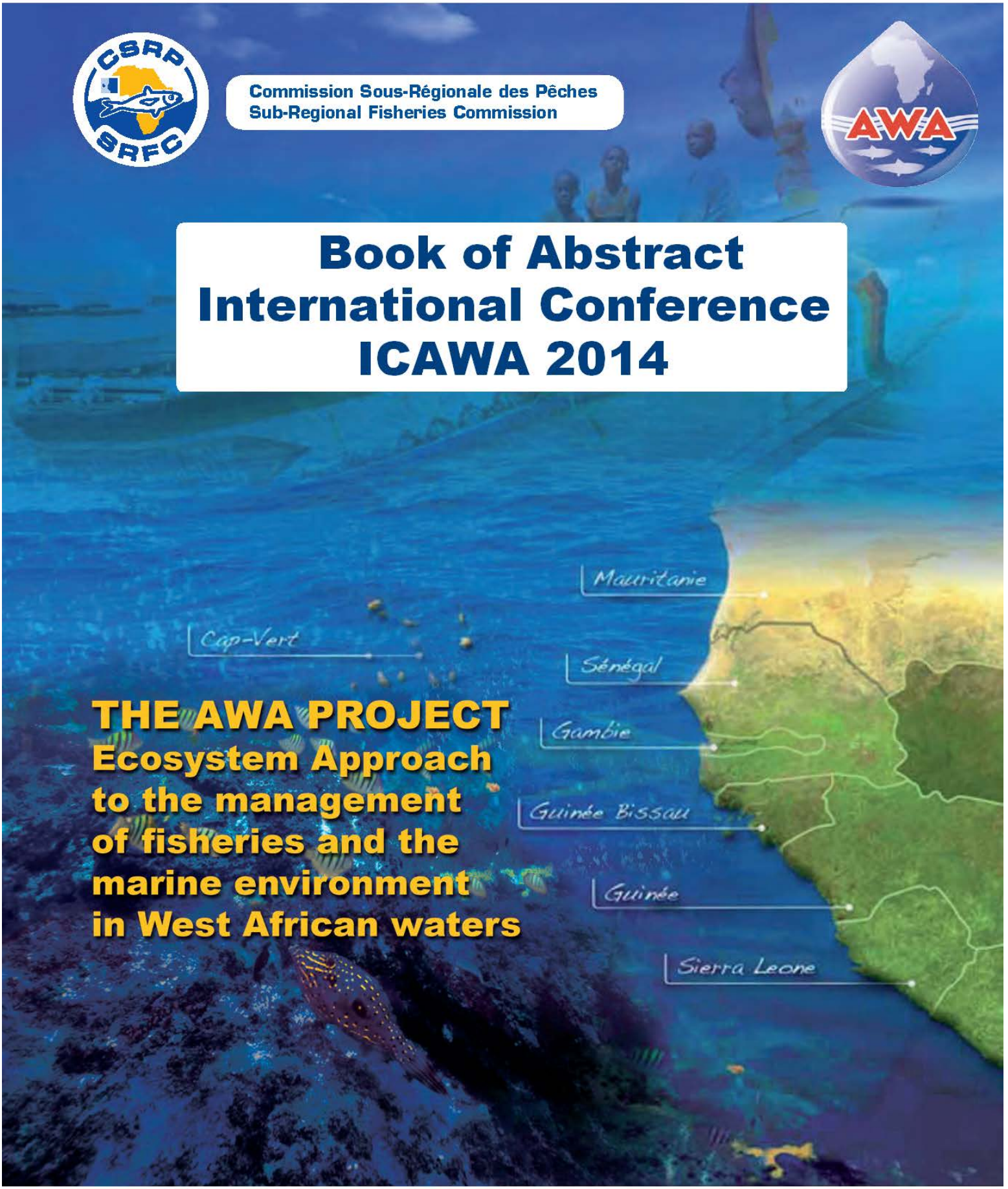
The southern end of the Canary current system comprises an original upwelling center that has so far received limited attention, the Southern Senegal-Gambia Upwelling Center (SSUC). We investigate its dynamical functioning by taking advantage of favorable conditions in terms of limited cloud coverage. Analyses and careful examinations of over 1500 satellite images of sea surface temperature scenes contextualized with respect to wind conditions confirm the regularity and stability of the SSUC dynamical functioning (as manifested by the recurrence and persistence of particular SST patterns) but also reveal subtle aspects of its upwelling structure: shelf break cooling of surface waters consistent with internal tide breaking/mixing ; complex interplay between local upwelling and the Mauritanian current off the Cape Verde headland ; complexity of the inner-shelf/mid shelf frontal transition. The amplitude of the diurnal cycle suggests that large uncertainties exist in the SSUC heat budget. Study limitations underscore the need for continuous in situ measurement in the SSUC, particularly of winds.

Keywords: SST; Southern Senegal, Gambia, Upwelling, CCLME.

.

Commission Sous-Régionale des Pêches
Sub-Regional Fisheries Commission

Book of Abstract International Conference ICAWA 2014



THE AWA PROJECT
Ecosystem Approach to the management of fisheries and the marine environment in West African waters

Bundesministerium
für Bildung
und Forschung

IRD
Institut de recherche
pour le développement

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
Ministère des Affaires étrangères et du Développement international
Ministère de l'Enseignement Supérieur et de la Recherche

Trilateral German-French-African research initiative

ISBN :978-2-9553602-0-1

Edited by:

Patrice Brehmer (IRD) & Hamady Diop (SRFC/CSRP)

With the collaboration of:

Marie Madeleine Gomez, Ndague Diogoul, Viviane Koutob, Peter Brandt, Bamol Ali Sow, Alban Lazar, Xavier Capet, Heino Fock, Carlos F. Santos, Eric Machu, Hamet Diadihou, Didier Jouffre, Ibrahima Diallo, Joern Schmidt, Amadou Gaye, Mahfoudh ould Taleb Sidi, Yves Gouriou, Rafael Almar, Moussa Sall, Dominique Duval Diop, Modou Thiow, Ross Wanless, Jacob Gonzales-Solis Bou, Ibrahima Ly, Dienaba Beye Traoré, Marie Bonnin, Werner Ekau.

ISBN: 978-2-9553602-0-0

Cover design: AWA (BMBF – IRD) project

Logo and flyers: Laurent Corsini (IRD)

Sponsors ICAWA 2014