Kamarel Ba, PhD

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SUMMARY PROFILE

Senior fisheries scientist with over 10 years of experience specializing in stock assessment and quantitative modeling. Demonstrated expertise in applying advanced Bayesian methods and integrated assessment approaches to both data-rich and data-limited fisheries. Proven track record leading international stock assessments for FAO-CECAF, with particular focus on small pelagics and demersal resources in West Africa. Strong capability in developing and implementing assessment models using JABBA, SPICT, LBB, LBSPR, Stock Synthesis 3, and other contemporary approaches.

PROFESSIONAL EXPERIENCE

Researcher (2019-Present)

Oceanographic Research Centre of Dakar-Thiaroye (CRODT), Senegal - Lead scientist for stock assessments of key commercial species in West Africa, including: - Small pelagics (*Sardinella aurita*, *S. maderensis*, *Ethmalosa fimbriata*, etc.) - Demersal resources (*Parapenaeus longirostris*, *Penaeus notialis*, *Epinephelus aeneus*, *Octopus vulgaris*, etc.) - Develop and implement advanced Bayesian state-space models (e.g. JABBA) and integrated assessment approaches - Design and conduct statistical analyses of fisheries data using R and specialized assessment tools - Help develop and implement an Ecosystem Modeling in CCLME region with a focus on *Sardinella aurita* - Provide scientific advice for fisheries management at national and regional levels - Lead yearly national stock assessment on deep shrimps (*Parapenaeus longirostris* and *Aristeus varidens*) in collaboration with stakeholders and Fisheries Directorate and help give management advice to the Fisheries Ministry - Collaborate with international organizations (FAO, ICCAT) on stock assessment working groups - Lead expert for analyzing tropical tuna tagging data in collaboration with ICCAT - Participate in international workshops on stock assessment methodologies and data-limited approaches

PhD Candidate and Research Assistant (2014-2018)

Cheikh Anta Diop University of Dakar, Senegal - Developed quantitative models for fisheries stock assessment - Conducted research on marine population dynamics - Implemented fisheries management simulations - Published peer-reviewed papers on fishing impact assessment and biological parameters

Research Assistant (2012-2013)

USAID/COMFISH Project, Senegal - Contributed to sustainable fisheries management initiatives - Collaborated with University of Rhode Island (USA) and University Institute of Fisheries and Aquaculture (Dakar) - Supported development of management strategies for coastal fisheries

EDUCATION

PhD in Quantitative Fisheries Science and Modeling (2018)

Cheikh Anta Diop University of Dakar, Senegal - Specialized in Fish Stock Assessment - Focus: Development of quantitative methods for fisheries management

Master's Degree in Fisheries Science (2013)

University Institute of Fisheries and Aquaculture of Dakar - Focus on sustainable fisheries management and marine resource conservation

TECHNICAL EXPERTISE

- **Stock Assessment Methods**:
  - Bayesian state-space models (JABBA) and Stochastic models (SPICT)
  - Integrated assessment (Stock Synthesis 3)
  - Data-limited approaches (LBB, SS-DL, LBSPR, LIME, TropfishR)
  - Production models (in R and Excel sheets), Virtual Population Analysis and Yield-per-Recruit
- **Statistical Analysis**:
  - Advanced R programming
  - Time series analysis
  - Bayesian methods
  - Model diagnostics
- **Software & Tools**:
  - R/RStudio
  - Stock assessment packages (ss3, r4ss)
  - StoX for acoustic survey analysis
  - RMarkdown, Quarto
  - Microsoft Office Suite

RECENT WORKSHOPS & TRAINING

- Workshop on Stock Synthesis 3 for sardinella assessment, FAO (Rome, 2024)
- ICCAT Workshop on Data Limited Stock Assessment Methods (Madrid, 2024)
- Training on biological sample processing for stock identification (Namibia, 2024)

- Workshop on abundance indices revision using StoX (Rome, 2023)
- Various FAO CECAF Working Group meetings on pelagic and demersal resources (2021-2024)
- Six-month training in Iceland (December 2019 - February 2020 and September to December 2021) on Data-Limited methods and Quantitative Stock Assessment
- Five-month training in Cadiz (Spain) (April to August 2022) on Standardization of commercial CPUE from deep shrimpers and Stock assessment using JABBA and SPICT

SELECTED PUBLICATIONS

1. Ba K, Thiaw M, Fall M, Thiam N, Meissa B, Jouffre D, Thiaw OT, Gascuel D. (2018). Long-term fishing impact on the Senegalese coastal demersal resources: diagnosing from stock assessment models. Aquatic Living Resources 31: 8.

2. Ba K, Thiaw M, Lazar N, et al. (2016). Resilience of Key Biological parameters of the Senegalese flat Sardinella to overfishing and climate change. PLoS ONE11: e0156143.

3. Baldé BS, Sow FN, Ba K, et al. (2019). Variability of key biological parameters of round sardinella Sardinella aurita and the effects of environmental changes. Journal of Fish Biology, 1–11.

LANGUAGES

- French: Very good
- English: Good
- Spanish: Beginner