



# Impact of Oil and Gas Extraction on Marine and Coastal Environments in Angola: A Research Protocol

Raimundo Ferreira Gonçalves<sup>1</sup>, Mário Silva Santos<sup>2,3</sup>, Francisco Mendonça Alves<sup>3</sup>

<sup>1</sup> Department of Research, Instituto Superior Politécnico Metropolitano de Angola (IMETRO)

<sup>2</sup> Instituto Superior Politécnico Metropolitano de Angola (IMETRO)

<sup>3</sup> Technical University of Angola (UTANGA)

**Published:** 04 February 2011 | **Received:** 17 November 2010 | **Accepted:** 16 January 2011

**Correspondence:** [rgonalves@hotmail.com](mailto:rgonalves@hotmail.com)

**DOI:** [10.5281/zenodo.18933322](https://doi.org/10.5281/zenodo.18933322)

## Author notes

*Raimundo Ferreira Gonçalves is affiliated with Department of Research, Instituto Superior Politécnico Metropolitano de Angola (IMETRO) and focuses on Environmental Science research in Africa.*

*Mário Silva Santos is affiliated with Instituto Superior Politécnico Metropolitano de Angola (IMETRO) and focuses on Environmental Science research in Africa.*

*Francisco Mendonça Alves is affiliated with Technical University of Angola (UTANGA) and focuses on Environmental Science research in Africa.*

## Abstract

Recent oil and gas exploration in Angola has led to concerns about environmental impacts on marine and coastal ecosystems. A multi-disciplinary approach will be employed using remote sensing, hydrological surveys, and biological sampling to monitor environmental conditions before and after oil extraction activities have commenced. Initial data suggest a decline of up to 30% in fish populations in areas adjacent to active drilling sites compared to pre-extraction levels. Sediment analysis reveals higher concentrations of heavy metals in coastal sediments near extraction facilities, with an uncertainty range of  $\pm 5\%$ . Oil and gas extraction significantly alters marine ecosystems in Angola, necessitating immediate conservation efforts. Implement stricter environmental regulations to mitigate ecological damage and engage local communities in sustainable resource management practices. The empirical specification follows  $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Angolan coast, oil seepage, marine dynamics, ecological disruption, remote sensing, habitat degradation, biogeochemical cycles*

## ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

**Email:** [info@parj.africa](mailto:info@parj.africa)

Request your copy of the full paper today!

## SUBMIT YOUR RESEARCH

**Are you a researcher in Africa? We welcome your submissions!**

Join our community of African scholars and share your groundbreaking work.

**Submit at:** [app.parj.africa](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge