

Assessment of Heavy Metal Concentrations in Mangrove Sediments along the Zanzibar Coast

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Introduction

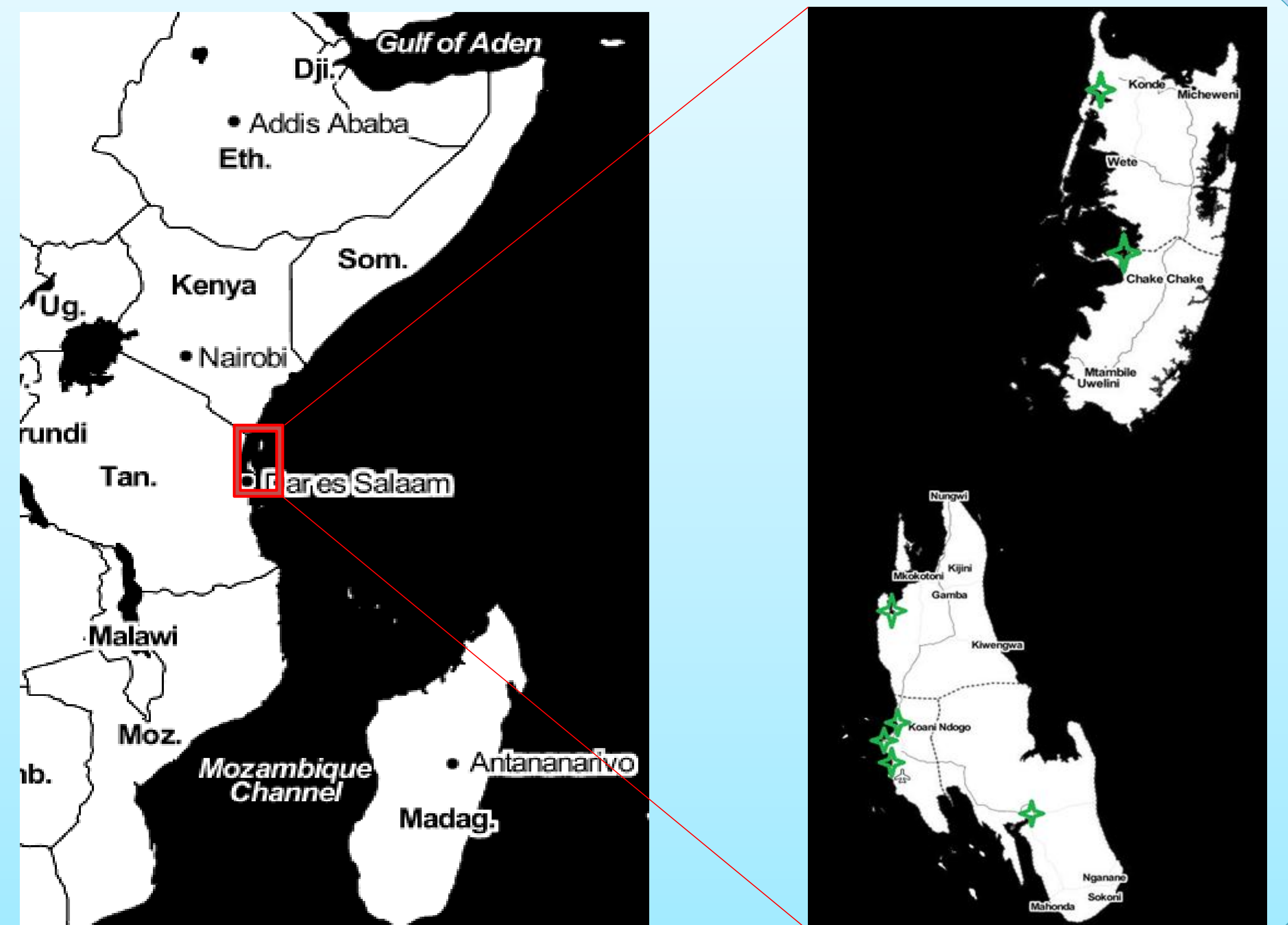
- Mangroves are among the most productive ecosystems, and dominate the shorelines in the tropics.
- They are an important sink of suspended sediments and also have a high capacity to retain heavy metals.
- Mangroves in the vicinity of populated areas are impacted by urban and industrial run-off.



Objectives

To investigate :

- the distribution patterns of heavy metals in mangrove sediments.
- anthropogenic influence on metal concentrations by using pollution indices.
- bio-accumulation of metals in a commonly occurring species.



Methodology

Sample Collection

Sediments were collected and frozen, tissue samples were stored in ethanol.

Labwork

Sediment grain size distribution.
Organic matter content analysis.
Heavy metal analysis of sediments & tissue.

Evaluating contamination using pollution indices

Enrichment factor (E_f),
Index of geoaccumulation (I_{geo}),
Contamination degree (Cd) & Pollution load index (PLI)

Results

Analysis will reveal:

- the spatial distribution of heavy metals in the sediments
- their relation with physicochemical variables.
- the extent of heavy metals readily available in exchangeable fractions
- implications for bio-accumulation occurring in organisms.

References

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