



geodynamics and petroleum geology of the western indian margins



This non-exclusive study examines the geodynamics and petroleum geology of the western margins of India.

This study is an evaluation of the tectonostratigraphic evolution of the Western Indian passive margin basins and the key issues of source, reservoir and seal development and maturation history.



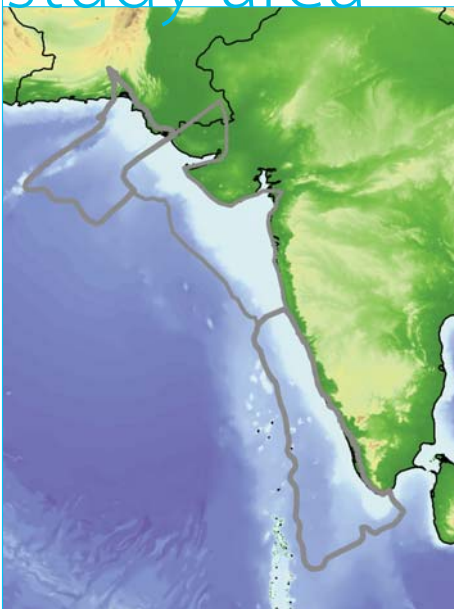
project rationale *and objectives*

The study builds on GETECH's unique global gravity and magnetic data and our Structure and Tectonics of Southern Asia study. These form the basis for the mapping of eight critical palaeogeographic and palaeolandscape timeslice reconstructions. Aided by an analysis of the modern day drainage, the study reviews the landscape evolution and likely effects on sediment dispersal. It also contains a review of the geochemical literature, new geochemical modelling, a synthesis of the stratigraphic framework and a basin-by-basin petroleum systems review. All these have been used to generate new insights into the petroleum systems of the western Indian margins.

Some key issues addressed in the study include:

- What is the relative timing of the rifting between the Indian, Madagascar and African plates?
- Can off-shelf prospectivity in the west coast basins reach the levels seen on the eastern margins of India?
- How do the shapes of the continental leading edges affect the landscape evolution during the Indian-Eurasia Collision?
- Are the petroleum systems of the Bombay Basin suitable analogues for the unproven Konkan-Kerala Basin to the south?
- How is source potential affected by the rapid northward movement of the Indian plate through various climatic zones?
- How have the Deccan volcanics changed the position of the drainage divide?
- What are the internal structural architectures of the basins and how has this effected sediment dispersal?

study area



BASINS COVERED

Kachchh
Mumbai-Saurashtra
Konkan-Kerala
Offshore Indus

TIMESLICES

Middle Permian
Late Jurassic
Early Cretaceous
Late Cretaceous
Late Palaeocene
Middle Eocene
Late Oligocene
Middle Miocene

deliverables

The study is delivered as:

A multivolume A3 Report, with accompanying A0 enclosures (hardcopy and pdf)

GIS project (ArcGIS 9.x)

Executive Summary and Introduction

Structure and Tectonics; Geophysics Interpretation

*The report will contain a summary for the report area of the key implications from GETECH's **Structure and Tectonics of Southern Asia Study**. This will consist of:*

Re-evaluation and testing of published structures
Structural interpretation of the gravity and magnetic data
2D gravity and magnetic profiles
Plate Modelling
Images of the gravity and magnetic data including derivatives and transforms to illustrate key features

Drainage and Landscape Analysis

Palaeogeography and Palaeolandscape

Eight palaeogeographic reconstructions (maps of rotated data locating palaeoenvironments, tectonophysiographic terrains and lithologies)
Palaeoelevation interpretation and derived palaeo-digital elevation models
Palaeodrainage reconstruction (including drainage basin geometry and evolution through time)

Petroleum Geochemistry

Source rock characterisation and evaluation
Burial history modelling
Correlation of available source rock and oil data

Petroleum Systems Identification and Evaluation

Key Exploration Issues

Conclusion, References and Appendices

Ten A0 Enclosures

the GIS project

A series of .mxd files illustrating:

Potential Field Data

Images of gravity and magnetic data and derivatives

Structural Framework

Structures and tectonic boundaries

Palaeogeographies

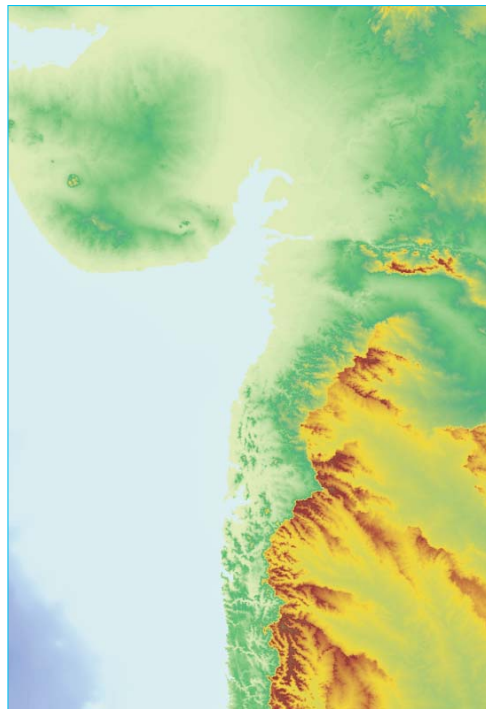
A series of maps for each of eight timeslices:

- Palaeoenvironments and tectonophysiographic terranes
- Palaeotopography
- PalaeoDEM (digital elevation model)
- Palaeodrainage

Modern Day Drainage

Landscape analysis grids and shape files

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STUDIES

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other products

structure and tectonics of southern asia

Following on from GETECH's Structure and Tectonics of Southeast Asia this is the second in an ongoing series of studies to re-evaluate the fundamental structural interpretations and tectonic models that underpin worldwide hydrocarbon exploration. Our aim is to 'return-to-basics' to re-establish the underlying principles of exploration geology utilising GETECH's gravity and magnetic datasets and depth of expertise.

gravity and magnetic data

The underlying digital grids of gravity and magnetic data which have been utilised in our studies are also available separately or as a complementary dataset to the study.



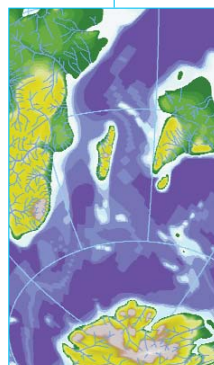
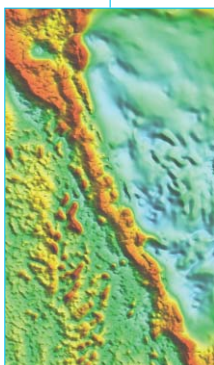
Multi-disciplinary teams of technical experts



Including the world's largest gravity and magnetic library



A global portfolio of focussed exploration reports



GLOBAL EXPLORATION STARTS HERE