

**AAPG International Conference
Barcelona, Spain
September 21-24, 2003**

Richard Barrett¹, Martijn Van Haaster¹, Susanne Witte¹, Stephen Collins¹, Stephano Baffi¹ (1) Shell E&P International, Rijswijk, Netherlands

The Evolution of the East Africa Passive Margin and Petroleum Systems

The East African passive margin is a vast geological domain spanning the coastlines of six countries (Mozambique, Tanzania, Kenya, Somalia, Madagascar, and the Seychelles). The present day margin is the product of an extended and dynamic Mesozoic-Cenozoic break-up history. Regional rift and drift forces fuelled the complex interplay of mega-tectonic movements and regional stratigraphic responses resulting in the creation of a large number of offshore sedimentary basins and a diverse assemblage of potential petroleum systems and plays ranging from shallow water carbonates to deepwater turbidites.

Initial breakup of Gondwana occurred in the Early Jurassic resulting in the formation of a narrow ocean between the east African continental margin (east Gondwana) and the Madagascar/Indian continent (west Gondwana). Early rift and anoxic restricted marine conditions locally provided favorable conditions for source rock development. Failed rift arms and structural lows along the continental margins provided significant regional catchments areas for sediment supply and conduits to the shelf and deepwaters where thick clastic successions are deposited. In some regions (e.g. northern Somalia) carbonate deposition predominated in areas of limited siliciclastic input between sedimentary feeder systems.

The tectonic history of the East African margin records a uniquely dynamic drift phase featuring nearfield transpressional responses to significant far field events - the drift south of Madagascar, the tortuous northward drift of India and the associated complex 'oceanic ridge jumps'.