

EA12

A New Stratigraphic Model for Tanzania: Insights from Deep Water Exploration

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Summary

The Coastal Basin of Tanzania has historically been one of the best-studied areas of the East African margin, with a stratigraphic succession that records the evolution from the Gondwana breakup phase, through transform and passive margin phases to the East African Rift phase. However, published stratigraphic columns based on onshore exposures and wells show considerable variation regarding the recognition and duration of major unconformities, the completeness of the succession and the age and correlation of some lithostratigraphic units. The recent upsurge in deep water exploration on the Tanzanian slope has provided a wealth of 3D seismic and well data. These data have calibrated the more complete offshore succession and revealed in detail the complex depositional architecture resulting from the interaction of turbidite and contourite systems on the Tanzanian slope for the first time. This study presents new information on the offshore stratigraphy, including ages of key unconformities and reservoir units, and integrates the offshore and onshore successions to provide a new stratigraphic scheme for Tanzania, comprising 9 unconformity-bounded tectono-stratigraphic megasequences. This scheme provides the first complete picture of stratigraphic evolution across the margin from the Jurassic to the Neogene, establishing Tanzania as the best-calibrated part of the East African Margin.

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Chronostratigraphy			Depositional architecture	Mega-sequences	
Neogene	Plio/Pleist			Ng2	
	Late Miocene			Ng1	
	Mid Miocene				
	Early Miocene				
Paleogene	Olig	Chattian		b	Pg2
		Rupelian		a	
	Eocene	Priabonian		c	Pg1
		Bartonian			
		Lutetian		b	
		Ypresian			
	Pal	Thanetian		a	
		Selandian			
		Danian			
Late Cretaceous	Maastrichtian			K3	
	Campanian				
	Santonian			K2	
	Coniacian				
	Turonian				
	Cenomanian				
Early Cretaceous	Albian			K1	
	Aptian				
	Barremian		b		
	Hauterivian				
	Valanginian		a		
	Berriasian				
Late Jurassic	Tithonian		c	J2	
	Kimmeridgian		b		
	Oxfordian		a		
Mid Jur	Callovian			J1	
	Bathonian				
	Bajocian				

Fig. 1. Sequence stratigraphy and depositional architecture of offshore Tanzania