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Mesozoic Plate Tectonic Controls on Rift Basin Development in North Central Africa: A Major Cretaceous Basin System

Now that the Chad-Cameroon oil pipeline is about to become a reality, oil companies are likely to review their exploration interests of the central African region. Oil has been known to be present in the central African basins for decades but has not been exploited due to the remoteness of the region. These basins form part of the Mesozoic 'Central African Rift System' that extends from the Atlantic coastline of Nigeria and Cameroon through Chad, Central African Republic into Sudan. These fault zones do not continue all the way across Africa but dissipate their shear displacement into perpendicular orientated extensional rift basins. The Benue Trough, of Nigeria, is a sinistral wrench basin, which extends from the Niger Delta in a NE direction to Lake Chad where it transforms into a predominately NW trending extensional basin system through Niger. The Central African Fault Zone can be traced from Cameroon via southern Chad and Central African Republic into central Sudan where it transforms into a series of SE trending basins through Sudan and Kenya to the Somali basin of the Indian Ocean.

Plate tectonic opening of the Atlantic and NW Indian Oceans have played a major role in the development of the African basins. For the Atlantic Ocean, the linking of the Central and South during the Cretaceous, was responsible for a major phase of basin development in Central African Rift System. Subsequently, this rift system has acted as a weak zone within the African plate and has absorbed subsequent changes in plate movements resulting from plate interactions elsewhere (e.g. Africa colliding with Europe and India colliding with Asia).