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Key Role of Regional Experience and Technical Know-How: Example of the Lower Congo Basin

The Lower Congo Basin, part of the West African passive margin, was formed by the opening of the South Atlantic domain during early Cretaceous times. The petroleum systems have been controlled by the geodynamic evolution of the margin (rifting, flexuring and uplift processes) and by several stages of gravity deformation within the sedimentary units. The Aptian salt plays a major role in the evolution of the petroleum systems, for example regional seal of the pre-rift units, sole of the gravity deformation which affected the post-rift sequence, control of the HC sourcing from pre salt to post salt systems...

Following the evolution of the geological concepts, the development of technology and the fluctuation of the economical context, several efficient petroleum systems have been defined and explored during the past decades, from the onshore basins to the ultra deep domain. These systems belong to the syn-rift units and to the post-rift platform and turbiditic series.

During this period, TotalFinaElf has played a major role in this area both as operator and partner in a large number of exploration and development projects. Through the acquisition of numerous data and significant experience, the Group has acquired a good regional knowledge and has adapted its methods and tools to each environment or play.

This know-how is a key to:

- evaluating the exploration potential of the mature plays,
- improving the recovery of the producing fields,
- better exploring and appraising the recent plays.

Firstly, an overview of the major plays is presented, including the main parameters of the petroleum systems and the exploration history milestones.

In a second part, selected examples illustrate the role of the regional knowledge and of the integration of the " lessons learned " in the success and cost efficiency of TotalFinaElf E&P projects.