

An African Oil and Gas Story as Told by “Africans”*

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Abstract

Africa has many stories stretching back millennia. Our story will focus on its oil and gas exploration and some of the geo-political events that have shaped the continent. We will take you on a journey from oil seeps to ultra-deep-water discoveries, highlighting golden periods of exploration, impacts of technology and petroleum infrastructure developments, paralleled with oil price evolution. Some of Africa’s discoveries have their own stories, which will be told.

Oil has been gathered from seeps throughout Africa for thousands of years. Egyptians used bitumen as glue, mortar, waterproofing and during the embalming process. There is even reference to it being used in the coating of Moses’ basket! In the late 1700s bitumen was collected and exported from Dande in Angola and by the early 1900s seeps were documented in several locations within Africa.

It was not until 1854 and the invention of the kerosene lamp that the first large scale demand for petroleum was created. The demand grew with the developments of commercially viable internal combustion engines from the mid to late 1800s, and further with the mass production of automobiles in the early 1900s. How did this all affect African oil and gas exploration? The 1884 Berlin Conference, which regulated European colonization and trade in Africa, is often referred to as the starting point in the scramble for Africa. By the start of World War I (WW I), roughly 90% of the continent was colonized. This period of colonization coincides with a worldwide increase in demand for petroleum.

What had happened in terms of Africa’s oil exploration prior to the start of WW I? Only a handful exploratory wells are known to have been drilled. Nine fields were discovered, seven in Egypt and Algeria and two in Madagascar (but are oil sands/heavy oil deposits).

By the end of the 1950s a lot had changed: the world had endured two world wars, automobiles were main stream and there was an ever-growing demand for oil. The 1950s and 1960s could be viewed as the first golden age for African oil and gas exploration. During this period, the super giants Hassi Messaoud and Hassi R'Mel (Africa’s two largest fields) were discovered in Algeria and numerous large giant finds were made in Nigeria, Libya, Egypt and Algeria. The use of seismic data in the petroleum industry was established and the midstream industry was

made in Nigeria, Libya, Egypt and Algeria. The use of seismic data in the petroleum industry was established and the midstream industry was showing healthy growth. In a geopolitical context, Africa was evolving - decolonization was in full swing. By end 1960s, 48 countries had gained independence.

Whilst established areas in Africa continued to attract exploration onshore, explorers also started looking further offshore in the 1970s, and into increasingly deep-water, in part facilitated by 3D seismic data which was common place by the mid-1990s. This deep-water exploration led to several large discoveries throughout the late 1990s and early 2000s, almost all of which were primarily oil. Globally, geopolitical instability was driving oil prices. The 1973 oil embargo triggered a sharp increase in the oil price, which was further driven by the Iranian revolution in 1978-1979 and the start of the Iran/Iraq war in 1980. These events pushed the oil price from USD 3/bbl in 1973 to USD 36/bbl in 1981 ([Figure 1](#)). In Africa this turbulent period, and elevated oil price served to maintain exploration activity at similar levels until 1985. However, in the 1990s drilling activity pulled back in line with the retreat in the oil price.

As oil prices started climbing again in 1999, so did exploration activity. In 2010 something remarkable happened – gas was discovered in vast quantities offshore East Africa. In less than four years more than 22 billion barrels of oil equivalent were discovered offshore within the Ruvuma Basin, heralding a second golden age for African exploration, this time dominated by gas. The gas discoveries in Mozambique (which include two super giants and Africa's 3rd and 4th largest discoveries to date) were followed by giant gas discoveries in Senegal, Mauritania and Egypt. The frenzied drilling activity continued until end 2014 and then, in line with the most recent oil price collapse, exploration drilling activity came to a standstill throughout most of Africa. That said, it was during this relatively low activity period that the gas discoveries in Senegal, Mauritania and Egypt were made.

At the time of writing Africa had already yielded over 400 billion barrels of oil equivalent. What is next for one of the most exciting exploration destinations in the world? With oil prices seemingly stable explorers are again targeting new and exciting frontiers like the unexplored deltas in South East Africa, the ultra-deep-water West Africa and underexplored offshore of South West Africa.

Summary of exploration activity in Africa & world oil price evolution

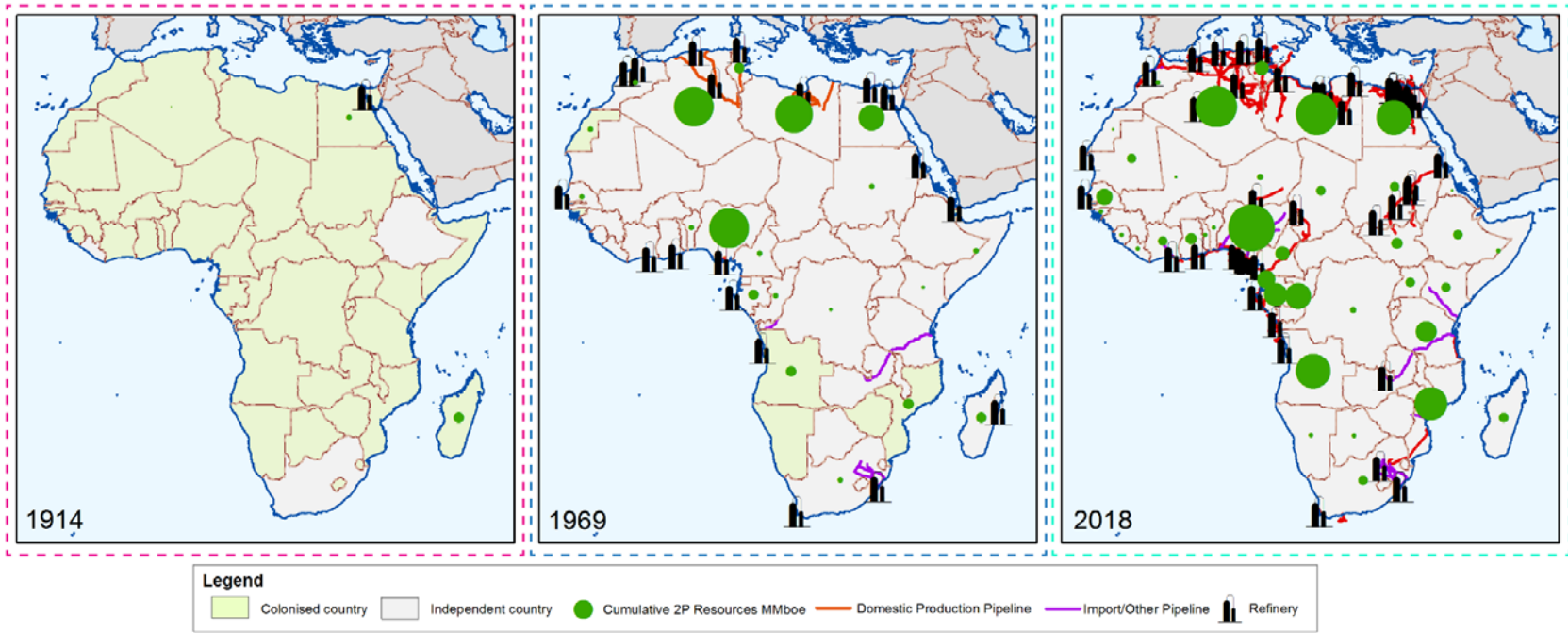
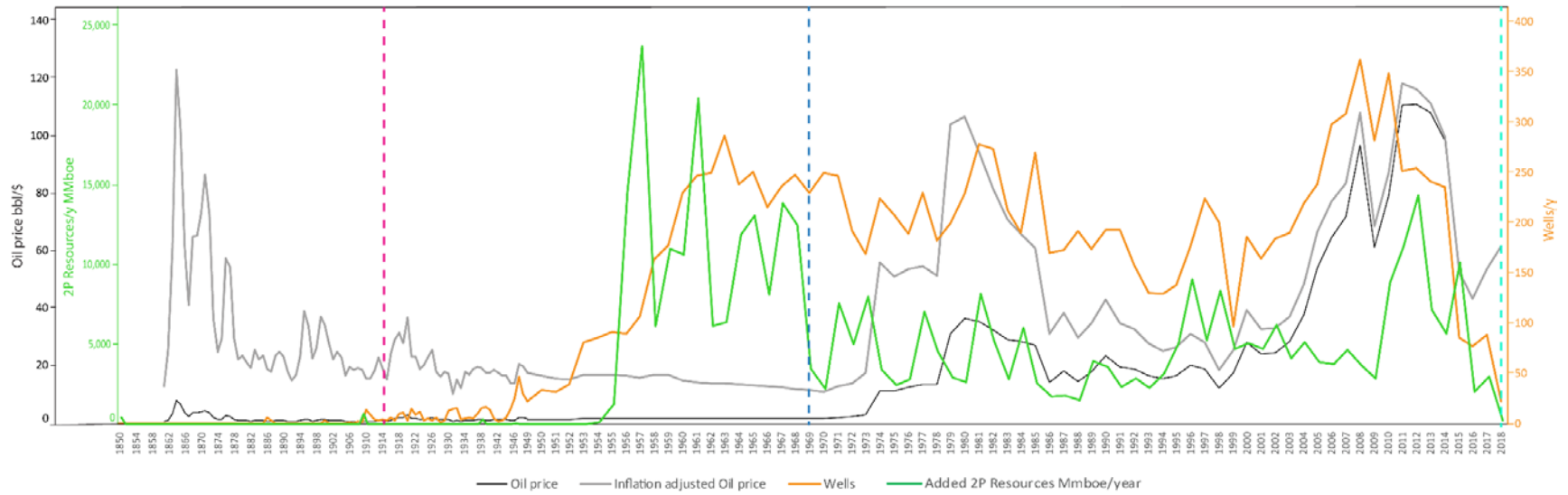


Figure 1. Summary of exploration activity in Africa and world oil price evolution.