Box 18.3: Space tech taking off in West Africa

Even before the Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024) made it a priority,* several West African countries were investing in space science and technology for socio-economic development.

The African space market was estimated to be worth US$ 10 billion in 2014 (Space in Africa, 2019). This figure supports the economic rationale of having a space programme in a region dominated by lower middle-income countries.

**Nigeria: the region’s trailblazer**

Nigeria is West Africa’s trailblazer in space, having invested in the subregion’s first satellite back in 2003, NigeriaSat-1. This satellite had been built by a British company and launched by a Russian one. NigeriaSat-1 was used for environmental monitoring, alerting to impending disasters and tracking desertification, among other things.

Nigeria has since launched other satellites and plans, ultimately, to send Nigerian astronauts into space.

The African Regional Centre for Space Science and Technology Education, based at Obafemi Awolowo University in Nigeria, is recognized across the continent as a centre of excellence.

**Ghana: helping to build world’s largest telescope**

Another West African country exploring the potential of space science is Ghana. It is one of the nine African partners of the South African-led Square Kilometre Array (SKA) project,19 which is building the world’s largest telescope with a collecting area of over 1 million km² and receiving stations (radio astronomy telescopes) on the African and Australian continents. The project should be fully operational by 2030, with completion of the first phase expected in 2023 (see Box 20.1).

In 2017, Ghana became the first African country besides South Africa to convert a disused telecommunications antenna into a radio astronomical telescope capable of applying Very Long Baseline Interferometry for global network observations. The Government of Ghana has earmarked about 30 million Ghana cedis – roughly US$ 6 million – for its participation in the SKA project (Asabere, 2017).

**Senegal: collecting data for flyby of asteroid**

A key indication that other West African countries have woken up to the space challenge is Senegal’s participation in the August 2018 mission to collect data in preparation for the flyby of an asteroid called Ultima Thule in January 2019. Scientists from France and the US National Aeronautics and Space Administration brought five tons of astronomical equipment to observe the skies with their counterparts in Senegal.

This progress owes much to the vibrancy of the Senegalese Association for the Promotion of Astronomy (Baratoux, 2018).

**Rapid growth in publications**

The number of scientific articles in physics and astronomy has grown rapidly in Ghana and Nigeria since 2016 (Figure 18.7).

More countries may soon join. The ECOWAS Commission has formulated a Strategy on Space Sciences and Geomatics and is investing in an Earth observation satellite, in collaboration with the Nigerian National Space Research and Development Agency.


Source: compiled by author

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![Figure 18.7: Publications on physics and astronomy from Ghana, Nigeria and Senegal, 2011–2019](image)

Source: Scopus; data treatment by Science Metrix

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