Panoptic Insights

General

Agriculture is the second largest sector of the Nigerian economy after services. Despite the country's dependence on oil, agriculture remains the mainstay of employment and food security.

In 2023, the agricultural industry will be worth ~$100 billion, representing ~22% of the country's GDP. The industry employs about a third of the country's population (over 70 million people), of which about 46.6 million are direct farmers. The majority of farmers (80%) own less than 2 hectares of land (average farm size: 1.47 hectares).

SINCE 1991, THE PROPORTION OF THE POPULATION ENGAGED IN AGRICULTURE HAS FALLEN FROM 53.36% TO 37.99%, BUT IN ABSOLUTE TERMS THE NUMBER OF FARMERS HAS RISEN FROM 26.9 MILLION (IN 1991) TO THE 46.6 MILLION MENTIONED ABOVE.

Funding for Nigeria's agriculture reached $1.2 billion in 2002, of which about 15 percent was aid from USAID.

The industry has grown at an average annual rate of 3.4% over the past five years (CBN data) and is forecast by PwC to increase to 5% by 2028, driven by technology and government support.

Cultivated crops

The main crops of Nigeria are:

- Cassava - about 35 per cent of total agricultural production

- Yam: ~20%

- Maize (corn): ~20%

- Rice: ~10%

World rankings:

Nigeria consistently ranks first in the world in cassava and yam production - production volumes of these crops have remained the leading crops over the years.

Triggers

Climate change

- increase in droughts and floods: 60 per cent of farmland in northern states (Kano, Kaduna) is vulnerable to desertification, while southern regions (Delta, Lagos) suffer from seasonal flooding (FAO, 2023).

- Shifting rainy seasons: Crop losses are as high as 30% due to the increasing unpredictability of weather patterns (Nigerian Meteorological Agency, 2022).

Demographic growth

- Annual population growth of 2.6% increases demand for food, with 70% of farmers cultivating plots of less than 2 hectares (World Bank, 2023).

Import dependency

- Fertiliser imports: 80% of agricultural fertiliser comes from abroad. from abroad.

- Impact of devaluation: A 45% depreciation of the naira in 2023 led to a 200% increase in production costs (CBN, 2023).

Complexities (technical and infrastructural barriers)

Post-harvest losses

- 40% of produce is lost due to lack of cold storage and processing facilities

- Example: 85% of tomatoes spoil during transport (PwC Nigeria Agribusiness Report, 2022)

Low mechanisation

- Only 5% of farmers use modern machinery

- High rental costs 100/day for an average farmer's daily income ~ $2.5/day

- 70% of machinery is second-hand Asian machinery with a lack of spare parts

Logistical problems

- 70% of rural roads are unsuitable for trucks (World Bank, 2023)

Monopoly of middlemen

- Traders buy crops at 20% of market price, taking advantage of farmers' inability to transport produce to markets on their own.

Circumstances (socio-economic and political factors)

Conflicts over resources

- Clashes between herders and farmers (especially in the Middle Belt) result in $13bn of lost agricultural production annually (SBM Intelligence, 2023)

Corruption and regulatory barriers

- 30% of government subsidies for fertiliser and seeds are misappropriated (Transparency International, 2022)

- Problems with land registration: 90% of agricultural land is not registered

Lack of finance

- Small farmers receive only 3% of bank loans (EFInA, 2023)

- High interest rates

- Interest rates are as high as 45% per annum (compared to 45% per annum (compared to 18% in South Africa)

Solutions we can supply

Precision farming platforms

- Integrated solutions: satellite monitoring/drone imaging + IoT sensors + analytical algorithms

- Functionality: weather forecasting, crop yield calculation, irrigation optimisation Example: Zenvus launch reduced water consumption by 30% for 5,000 farms

Decentralised storage

- Network of local storage facilities (up to 200,000 tonnes in total)

- Estimated capacity: to serve 20% of farmers within a 50km radius Example: ColdHubs solar refrigeration units reduced fruit losses by 80%

Mobile finance

- Mechanism: crop-secured loans based on precision farming data: precision Farming data (p.1) Credit scoring Example: Farmcrowdy and Thrive Agric joint programme - microloans at 12% APR based on IoT analytics