Overview and Quick Scan Of The Poultry Sector In Sudan with Focus on the Eastern Provinces

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# Table Of Content

1. Executive Summary 5

2. Introduction 7

3. Sudan Country Profile 7
   3.1 Geography
   3.2 Natural Resources
   3.3 Climate
   3.4 Population

4. Sudan Economy 11
   4.1 Relevant Features
   4.2 Gross Domestic Product (GDP)
   4.3 Manufacturing
   4.4 Minerals
   4.5 Agriculture
   4.6 Petroleum
   4.7 Imports
   4.8 Exports
   4.9 Currency
   4.10 Transportation
      a. Roads
      b. Railroads
      c. Inland Waterways
      e. Civil Aviation
      f. Marine Ports and Shipping

5. Sudan Economic Outlook 16
   5.1 Macro Economic Indicators
   5.2 Market opportunities
      a. Agriculture
      c. Energy & Mining

6. Trade relation with The Netherlands 19

7. Sudan Poultry Industry 21
   7.1 History
   7.2 Breeders and Day old Chicks (DOC)
   7.3 Infrastructure and Equipment
a. Open System
b. Semi-Closed System
c. Closed system
d. Cages system

7.4 Feed
7.5 Geographic Distribution of Poultry Sector
7.6 Local Raw Material
7.7 Sudan Poultry Key Figures
7.8 Integration of Agriculture
7.9 Diseases and Biosecurity

7.10 Available Laboratories
7.11 Reasons for High Cost
  o Mortality
  o Multiage Farms
  o Raw material quality

8. Poultry Sector – Value Chain and Cycle

8.1 Market Size
8.2 Distribution Channels
8.3 End User Products
8.4 SWOT Analysis of The Poultry Sector in Sudan
8.5 Banking Sector
8.6 Sudanese Poultry Associations

9. Future Prospects For The Poultry Industry

10. East Sudan General Overview

10.1 Red Sea State
10.2 Kassala State
10.3 Gedaref State

11. Key Findings

12. Recommendations

13. Appendices
1.0 Executive Summary

The Rijksdienst Voor Ondernemend Nederland (RVO) in coordination with the Economic Affairs Section of the Netherlands Embassy in Khartoum has requested a study of the opportunities for further poultry sector development in Sudan. This Quick scan study addresses the following key topics:

- Insight into the main obstacles, challenges and needs of the poultry farmers
- General overview of the bigger and smaller poultry companies, cooperatives and farmers in East Sudan
- Analysis of weak and strong points of the different segments/sub-sector of the poultry sector in comparison with imports
- Possibilities to develop the sector and increase production in East Sudan
- Overview of Dutch knowledge/expertise and equipment that can contribute to the developments of the sector
- Identification of possible partner(s) for further (B2B) cooperation (including public and financing organizations)

To collect the necessary information both desk and field study were carried out. The Consultant understands that the ultimate objective of this consulting intervention is to assist Dutch poultry sector players in assessing the Sudanese poultry market potential, opportunities, understand its dynamics and identify the main drivers of growth, namely:

- To identify the specific needs and challenges of the Sudanese poultry sector – with a specific focus on poultry sector development in Eastern Sudan – and to assess a possible role for the Dutch poultry sector.
- To identify possible business opportunities for Dutch poultry companies on the basis of B2B cooperation.

This quick scan study has been implemented in three steps:

- Desk study to obtain an overview on the poultry sector in Sudan
- Several field visits were conducted covering Khartoum, Kassala, Gedaref and the Red Sea State.
- Interview and meetings with key stakeholders

The quick scan study carried out by the consultant has identified several key findings in East Sudan that are discussed in detail.
throughout this report. These can be summarized into two main categories:

Challenges And Constraints

• Eastern Sudan suffers from marginalization, underdevelopment and economic inequities, which indirectly affect the potential for the poultry sector
• The region is also plagued with issues of lack of basic services and employment opportunities
• There is a serious and crippling lack of know-how at all levels of the production chain
• Lack of effective farmers’ cooperatives and associations to support small farmers
• Non-existence of contract farming in the eastern region as well as Sudan in general

Opportunities

• Agriculture and agricultural labor are the main sources of livelihood for the majority of the population
• Sudan is self-sufficient in broiler production, but still imports some hatching eggs. All the integrators have their own breeders with extra capacity to sell DOC on the market.
• There is considerable unmet demand for poultry in the eastern regions.
• Given the demand in the poultry sector, parallel demand for feed additives, concentrates, premixes and other health related products would equally grow, creating future opportunities for Dutch companies.

Our findings indicate that Dutch poultry equipment and raw material producers have an opportunity to expand their activities in East Sudan. Given the Dutch’s involvement in Sudan throughout the years, credibility and trust has been established with the local communities. As such, Dutch companies should focus their efforts not only on marketing their products, but also on transferring knowledge and solutions. We have identified a series of recommendations that are discussed in detail in the recommendations section.

2.0 Introduction

The Rijksdienst Voor Ondernemend Nederland (RVO) encourages entrepreneurs in sustainable, agrarian, innovative and international
business. It helps with grants, finding business partners, know-how and compliance with laws and regulations. The Netherlands Enterprise Agency is part of the Ministry of Economic Affairs and works at the instigation of ministries and the European Union.

The Agency has contracted the consultant to carry out a study to identify the specific needs of the Sudanese poultry sector – with a focus on poultry sector development in Eastern Sudan – and to assess a possible role for the Dutch poultry sector – and to identify possible business opportunities for Dutch poultry companies on the basis of B2B cooperation.

The Consultant has carried out in-depth desk research on the poultry sector in Sudan, with a focus on East Sudan. The information gathered from the desk research in addition to several field visits carried out as well as the numerous interviews conducted, have all been condensed and summarized into this detailed report.

The report addresses the terms of reference in the contract and provides insight and recommendations on the poultry sector in Sudan. Sudan is comprised of plateaus and plains, with low mountains found behind the Red Sea coast, in the far south, and in the far west. The Nuba Mountains are the only interior highlands of consequence west of the White Nile. All significant streams flow into the White Nile or Blue Nile, which join at Khartoum to form the River Nile. Extensive swamps are found in the south, especially along the Bahr al-Ghazal and the Bahr al-Jabal, the principal southernmost tributaries of the White Nile.

### 3.0 Sudan Country Profile

#### 3.1 Geography

Sudan’s total area equals 2,505,813 km2. Land area is 2,376,000 km² and coastline is 835 kilometers. Until 2011, it was, geographically, the largest country in Africa. Today, Sudan is 16th largest country in the world.

The total area of Sudan is now 1,861,484 km². The total area of South Sudan is 644,329 km². Sudan’s total population is 36.7 million distributed over 17 states, with 49% of the population in the urban areas. The country has seven neighboring countries, Egypt,
Ethiopia, Eretria, Libya, Chad, South Sudan and Central Africa. It is the continent gateway to the landlocked countries through the Red Sea.

Figure 1: Administrative Map of Sudan

3.2 Natural Resources

- Arable lands 60 million hectares (142 million feddans) only 20% currently cultivated
- Rich in water resources (the Nile and its tributaries and renewable ground water) with total water resources of 30.8 billion cubic meters
• Size of Livestock 104 million
• Rich mineral reserves include oil, gold, silver, chrome, iron, zinc and tin, and natural gas.

Figure 2: Topography and Drainage Map of Sudan

Source: United Nations Office for The Coordination of Humanitarian Affairs (OCHA)

3.3 Climate

Rainfall ranges from rare and occasional in the far northern desert to relatively abundant and frequent in the southern part of the country. The rainy seasons is typically six to nine months. Lack of rain the 1970s, 1980s, and 1990s have caused severe drought.

Dust storms, often accompany the arrival of the annual southwesterly rains in May–July, in central and parts of northern Sudan. Mean temperatures and daily maximums are generally high; desert temperatures can be quite cool at night.

3.4 Population

Sudan’s population is estimated at 36.7 million and South Sudan at 12.5 million.
Population growth peaked in the 1980s at 3.3 percent a year but declined thereafter. In 2016, the annual population growth rate was estimated at 2.5% with roughly two-thirds of the population living within 300–500 kilometers of Khartoum. Life expectancy at birth was estimated at 64.1 years, males: 62 years and females at 66.3 years. The age structure of the population is distributed as follows:

<table>
<thead>
<tr>
<th>Range</th>
<th>Percentage</th>
<th>Population (Males)</th>
<th>Population (Females)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14 years</td>
<td>39.43%</td>
<td>7,351,759</td>
<td>7,130,224</td>
</tr>
<tr>
<td>15-24 years</td>
<td>20.77%</td>
<td>3,926,374</td>
<td>3,703,826</td>
</tr>
<tr>
<td>25-54 years</td>
<td>32.42%</td>
<td>5,779,482</td>
<td>6,129,213</td>
</tr>
<tr>
<td>55-64 years</td>
<td>4.12%</td>
<td>793,848</td>
<td>721,075</td>
</tr>
<tr>
<td>65 years +</td>
<td>3.25%</td>
<td>645,876</td>
<td>547,824</td>
</tr>
</tbody>
</table>

Source: World Bank

With the exception of the settlements on the banks of the Nile, northern Sudan, which extends into the dry Sahara, is sparsely populated; with more population in the south extending nearly the entire border with South Sudan; sizeable areas of population are found around Khartoum, southeast between the Blue and White Nile Rivers, and throughout South Darfur.

### 4.0 Sudan Economy

#### 4.1 Relevant Features

Information on Sudan’s economy is spotty or nonexistent and often lags by years. Sudan has natural and human resources, but remains a poor country. The economy is based on agriculture, although the export of oil since 1999 has led to a large increase in national income. A limited transport network, a lack of foreign investment, and long wars in the South and in Darfur are among important constraints on economic performance.

Dependence on imports of capital equipment, low export earnings, and imports of petroleum before 1999 led to high foreign debt. Since the early 1990s, the government has promoted privatization of state-owned enterprises to stimulate the economy, with mixed results. Foreign investment has risen in parallel with privatization but was hampered by International Monetary Fund (IMF) restrictions in the 1990s and by ongoing U.S. sanctions. Since 1997, Sudan has implemented a structural adjustment program in cooperation with the IMF. The program has helped stabilize the economy and promote economic expansion, aided by exports of oil.
South Sudan receives virtually all of its revenue from the export of its oil.

4.2 Gross Domestic Product (GDP)

According to the published figures by The World Bank, Sudan’s GDP was estimated at as US$ 176.3 billion (2016 Figures). Sudan's GDP grew at a rate of 3.5% in 2016, a decline from 4.9% in 2015. The country’s GDP per Capita remained at $ 4,500 for 2015 and 2016. Its main components were agricultural products, mining and petroleum, and services.

Table 2: GDP Composition By Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage Of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>27.50%</td>
</tr>
<tr>
<td>Industry</td>
<td>20.70%</td>
</tr>
<tr>
<td>Services</td>
<td>51.80%</td>
</tr>
</tbody>
</table>


4.3 Manufacturing

Sudan’s manufacturing sector includes oil, cotton, textiles, cement, edible oils, sugar, soap distilling, shoes, petroleum refining, pharmaceuticals, armaments, automobile/light truck assembly, and milling.

Large-scale manufacturing is dominated by publicly owned enterprises. Sugar and textiles were the main products before expansion of the oil sector. Petroleum exports in the late 1990s provided funds for investment and import of equipment. Telecommunications and the growing and processing of sugar greatly benefited from this investment, but textile production has remained far below capacity.

The GIAD industrial city, established in 2000, consists mostly of armaments and automotive industries. Elsewhere, small-scale enterprises produce pharmaceuticals, cement, electrical goods, paints, and textiles.

4.4 Minerals

Significant minerals that are being mined include gold, extracted in the Red Sea Hills and Nubia since Pharaonic times and since 2012 in North Darfur; gypsum, also in the Red Sea Hills; and chrome in the Ingessana Hills. Asbestos, limestone, marble, manganese, mica,
iron ore, and uranium ores are among other minerals present in the country.

4.5 Agriculture

Sudan’s agricultural products include cotton, peanuts, sorghum, millet, wheat, gum arabic, sugarcane, cassava, manioc, tapioca, mangoes, papaya, bananas, sweet potatoes, sesame seeds; animal feed, sheep and other livestock.

Agriculture and livestock raising were the main sources of livelihood for an estimated 80 percent of Sudan’s population in the early 2000s. Agricultural products accounted for upwards of 95 percent of exports until oil exports came on line in 1999. Of an estimated 84 million hectares of arable land, the area under permanent cultivation was estimated at 16 to 17 million hectares as of 2002.

Agriculture consists of a modern market-oriented sector of irrigated and mechanized rain-fed farming concentrated in the central part of the country and a traditional sector engaged in subsistence activities elsewhere, where water resources permit cultivation. Principal modern-sector crops are cotton, peanuts, sesame, sorghum, sugarcane, and wheat; subsistence cultivators produce mostly sorghum and millet, and also peanuts and sesame.

Livestock provides a large part of the livelihood of nearly half of the population, and among sheep and cattle farmers and nomads, cattle and camels are the measure of status and wealth. Sales of livestock—cattle, sheep, goats, and camels—have become the fastest growing export sector after oil. The area of forest in Sudan has declined sharply since 1990 because of overgrazing, mechanized farming, and desertification.

4.6 Petroleum

Oil was first discovered in the late 1970s. Most extraction and reserves are in the South, but exploration is currently underway in the North. Further exploration and drilling were hampered and/or suspended by civil war and by lack of infrastructure to transport and process petroleum. Production resumed in the late 1990s and was followed by construction of two export pipelines and terminals on the Red Sea.

Proven reserves are 5 billion barrels of oil and 3 trillion cubic feet of natural gas. Oil extraction in 2009 averaged ca. 490,000
barrels/day; in the first half of 2014, production averaged 260,000 barrels per day, 150,000 from South Sudan and 110,000 from Sudan. Under the 2005 peace agreement, oil revenues were split between North and South. It is to be noted that Gas production is foreseen in the future. Major refineries are Al-Jayli near Khartoum and another at Port Sudan with a joint capacity of ca. 170,000 barrels/day.

4.7 Imports

Sudan’s total imports were $9.4 billion in 2016, up from $8.4 billion in 2015. The Country’s imports comprise foodstuffs, manufactured goods, refinery and transport equipment, medicines, chemicals, textiles and wheat.

Table 3: List Of Sudan’s Largest Importers

<table>
<thead>
<tr>
<th>Country Name</th>
<th>% of Sudan Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>26.40%</td>
</tr>
<tr>
<td>UAE</td>
<td>10.10%</td>
</tr>
<tr>
<td>India</td>
<td>9.10%</td>
</tr>
<tr>
<td>Egypt</td>
<td>5.60%</td>
</tr>
<tr>
<td>Turkey</td>
<td>4.70%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>4.40%</td>
</tr>
</tbody>
</table>

Source: Sudan Customs Authority

4.8 Exports

Sudan’s exports were $3.7 billion in 2016, up slightly from $3.2 billion in 2015. The Country’s exports consist of gold, oil and petroleum products, cotton, sesame, livestock, peanuts, gum arabic, and sugar.

Table 4: List Of Sudan’s Largest Exporters

<table>
<thead>
<tr>
<th>Country Name</th>
<th>% of Sudan Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAE</td>
<td>32%</td>
</tr>
<tr>
<td>China</td>
<td>16.20%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>15.50%</td>
</tr>
<tr>
<td>Australia</td>
<td>4.70%</td>
</tr>
<tr>
<td>India</td>
<td>4.20%</td>
</tr>
</tbody>
</table>

Source: Sudan Customs Authority
4.9 Currency and Exchange Rate

Sudan’s unit of currency is the Sudanese pound (SDG), divided into 100 piasters. A new pound was introduced in January 2007 and replaced the Sudanese dinar and the old Sudanese pound. South Sudan’s currency is the South Sudanese pound, SSP.

- On May 29th 2017, the government published exchange rate was about $ 1 = 6.69 SDG, however, the black market rate is actually: $ 1 = 18 SDG.

4.10 Transportation

a. Roads

Estimates of the road networks range upwards of 11,900 kilometers, of which 4,320 kilometers were paved, and 7,580 kilometers unpaved.

b. Railroads

The government-owned Sudan Railways Corporation operates 7,251 kilometers of railroad tracks in Sudan. These tracks include narrow gauge: 5,851 km 1.067-m gauge; 1,400 km 0.600-m gauge for cotton plantations (2015 Figures).

The main line runs from Wadi Halfa and Port Sudan in the north via Khartoum to Al-Obeid and Nyala in the center and west and to Wau in the southwest, with short extensions to Sinnar and Kuraymah. An eastern segment connects Kassala and Al-Damazin with Sinnir, and a spur runs from Sinnar to al-Gedaref. A 716-kilometer light rail system serves the Gezira agricultural area southeast of Khartoum.

c. Inland Waterways

Sudan has 4,068 kilometers of navigable rivers, but only 1,723 kilometers are open throughout the year. The backbone of the system is formed by the White Nile, Blue Nile, and Nile River. Waterfalls, sand bank, a growing number of dams, and seasonal variation in water levels limit river traffic.

e. Civil Aviation

The number of registered air carriers in Sudan is 6 with an inventory of registered aircraft operated by air carriers of 25 aircrafts.
Sudan Airways provides domestic service from Khartoum to 15 domestic airports and international service from three airports to the Middle East and Africa. Juba international airport has flights to Khartoum and to capitals of neighboring countries.

**f. Marine Ports and Shipping**

Port Sudan and Sawakin on the Red Sea are the major commercial ports; the port of Bashayir handles most oil exports. The national merchant marine has over 19 vessels (as of 2011) that sail mainly between the Red Sea ports in the Mediterranean and Europe.

### 5.0 Sudan Economic Outlook

Sudan’s economy has suffered from decades of prolonged civil war and was fundamentally altered after the secession of South Sudan in July 2011. South Sudan accounted for over 75% of the former Sudan’s total oil production, which in turn represented over 35% of the Government of Sudan’s revenues. Following South Sudan’s secession and the dramatic fall in oil earnings, Sudan has struggled to maintain economic stability. The Government has announced plans to generate new revenue streams by expanding existing oil and gas production, mining operations, such as gold mining, and agricultural production. Austerity measures have also been introduced to counter the effect of the loss of revenue.

Sudan’s GDP was estimated at US$ 176.3 billion (World Bank 2016 Figures). Sudan’s GDP grew at a rate of 3.5% in 2016, a decline from 4.9% in 2015. The country’s GDP per Capita remained at $ 4,500 for 2015 and 2016.

Agriculture currently employs 80% of the Sudanese workforce and accounts for 27.5% of GDP. Industry accounts for 20.7% of GDP, and the remaining 51.81% is attributed to the service sector.

Inflation declined to 16.9% in 2015, while real GDP growth remained buoyant at 5.3%, supported by agriculture, minerals,

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Table: 5 Aviation Sector

<table>
<thead>
<tr>
<th>Number of registered air carriers</th>
<th>Number of registered aircrafts</th>
<th>Annual passenger traffics (2015)</th>
<th>Number of Airports</th>
<th>Number of paved runways</th>
<th>Number of unpaved runways</th>
<th>Number of Heliports</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>25</td>
<td>496,178</td>
<td>74</td>
<td>16</td>
<td>58</td>
<td>6</td>
</tr>
</tbody>
</table>

services, oil-transit fees and foreign direct investment (FDI). Growth is expected to strengthen to 6% in 2017, despite the fall in oil prices, reduced gold purchases by the Central Bank and the unstable security situation. The forecast is based on the assumption of strong agricultural revival, a gradual recovery of global oil prices, political stability in South Sudan, sustained inflows of FDI and a positive outcome from the national dialogue to end the civil war and conflicts.

Sudan’s cities contributed an estimated 60% of GDP in 2014, with a skills base 62% higher than in rural areas. In urban areas, job creation is above average and the poverty rate is less than half of the national average. By 2030, the urban population will represent 48.6% of the total, reflecting a continuing contraction in the share of the rural population. However, since 1990 urban growth has been propelled by rural-urban migration, internally displaced people (IDPs) due to the civil war and conflict, climate-change impacts on the environment, and population growth. This has led to serious strains on urban services and disrupted the urban-rural market links that are of key importance for agriculture-based structural transformation. Policies adopted to upgrade slums have resulted in low-density, auto-dependent sprawl, further adding to urban services delivery inefficiencies.

### 5.1 Macro Economic Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2014</th>
<th>2015</th>
<th>2016 (e)</th>
<th>2017 (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth</td>
<td>3.6</td>
<td>4.9</td>
<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Real GDP per capita growth</td>
<td>1.4</td>
<td>3.1</td>
<td>3.9</td>
<td>3.7</td>
</tr>
<tr>
<td>CPI inflation</td>
<td>36.9</td>
<td>16.9</td>
<td>13.1</td>
<td>11.2</td>
</tr>
<tr>
<td>Budget balance % GDP</td>
<td>-1</td>
<td>-1.5</td>
<td>-1.4</td>
<td>-1</td>
</tr>
<tr>
<td>Current account % GDP</td>
<td>-9</td>
<td>-6.5</td>
<td>-6.4</td>
<td>-6.2</td>
</tr>
</tbody>
</table>


The short and medium-term economic outlook will be largely affected by the revival of agricultural and mineral production, sustained inflows of FDI and prudent macroeconomic and structural policies. However, further weakening of global oil prices, spillovers from the conflict in South Sudan, difficulties with international financial transactions and the growing shortage of foreign exchange present major downside risks that could lead to fiscal and external financing gaps and hence depress real growth.
Future prospects will also depend largely, on the outcomes of the national political dialogue, which is intended to enhance political participation and help end the civil unrest in the Darfur region and in the states of South Kordofan and Blue Nile. Moreover, the anticipated lifting of the sanctions in July of 2017 would have a direct impact on the future economic prospects of Sudan.

5.2 Market Opportunities

a. Agriculture

Agriculture and livestock play important roles in food security and employment opportunities in Sudan. It is estimated that the sector contributes about one third to the GDP. The government has identified the agriculture and livestock sector as a priority and has committed to spending 20% of public expenditure on agriculture, livestock infrastructure and technical innovations. Current estimates indicate that only 8.9% of land is being used for agricultural purpose, while approximately 47.4% of land has cultivable potential.

The diversity in climate and natural resources of Sudan allows for very broad prospects of production all year round, especially in winter. The foremost marketable products are mango, lemon, grapefruit and vegetables such as onion, eggplant, hot pepper, okra and cucumber.

Livestock form an important component of the agricultural sector, with production mainly based on traditional pastoral systems (90% of the livestock in the country belong to the traditional pastoral production systems). Live animals (especially sheep), meat and leather are important items in the country’s exports and contribute significantly to foreign exchange earnings. Considerable quantities of dairy products are imported as well. The fish reserves is estimated at 110 thousand tons in the coastal and interior waters, while up to 9 thousand tons are estimated to be in the deep waters of the Red Sea, which can also be used for investment.

6.0 Trade Relation With The Netherlands

Sudan is a small but growing business partner for the Dutch agricultural business. According to the Dutch statistics office i.e.
CBS, Dutch companies exported goods in 2015 at a value of 83.5M Euros to Sudan. The most important categories were food and live animals (29.5M Euros), equipment/machines and transportation materials (32M Euros). According to the data provided by Sudan’s Central Bank, Foreign Trade Statistical Digest for the year ending December 2016, Dutch exports increased by approximately 10% to reach over $ 91 Million in 2016.

Among the product imported by the poultry sector, the market size for concentrates is approximately 22,000 MT/ year, valued at more than 20 Million Euros and is expected to continuing growing given the overall increase in production.

Sudan imports more than 90% of its concentrates from the Netherland. In turn, The Netherland has the lowest cost of concentrates in the world and has extensive knowhow in the production and marketing of concentrates.

**Segments of the poultry Supplies where Dutch companies are active in Sudan.**

Table: 7 Opportunity Areas For Dutch Companies In Sudan

<table>
<thead>
<tr>
<th>Opportunities for Dutch Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment ( Feeders, Waterers, Ventilation )</td>
</tr>
<tr>
<td>Vaccines</td>
</tr>
<tr>
<td>Feed Concentrates</td>
</tr>
<tr>
<td>Feed Premix</td>
</tr>
<tr>
<td>Hatching Egg</td>
</tr>
<tr>
<td>Feed Additives</td>
</tr>
<tr>
<td>Antibiotics</td>
</tr>
<tr>
<td>Day Old Chicks</td>
</tr>
<tr>
<td>Layers Day Old Chicks</td>
</tr>
<tr>
<td>Slaughter House Equipment</td>
</tr>
<tr>
<td>Water treatment</td>
</tr>
<tr>
<td>Rendering</td>
</tr>
<tr>
<td>Hatcheries</td>
</tr>
</tbody>
</table>

Source: CBS

One of the major constraints for trade is the shortage of US dollars and the floating exchange rate. Theoretically, US$ can be purchased from the local banks at a rate of around 6.91 Sudanese Pond (SDG). However, the reality is from that with little availability of US $ at the banks. As such, most businesses resort to buying dollars on the black market at a much higher rate ($ 1 = 18 SDG), which in turn negatively impacts the profitability of local enterprises.

Another major constraint for the Sudanese business is the trade embargo of the USA for Sudan.
US sanctions fall into two categories:

- The blocking of the government of Sudan and the trade embargo against Sudan
- Targeted sanctions against individuals and entities contributing to the conflict in the Darfur region

These sanctions are also applicable on non-US countries that are active in the US, which is applicable, amongst others, to all Dutch banks and financial institutions. However, exemptions are allowed through:

- General licenses for specific sectors including food, agricultural products and equipment
- General licenses for non-specific areas including agricultural commodities
- Individual licenses for non-specified areas including agricultural commodities

**The US Sanctions, currently suspended, should be lifted in July of 2017**

### 7.0 Sudan Poultry Industry

#### 7.1 History

Sudan has always had great potential in the poultry and agriculture sectors in general. It is recognized as one of the countries in the region with the potential to produce competitively priced poultry for export. Although the country is far from achieving this stage due to low productivity caused by diseases and sector mismanagement, there is room for many improvements.

The Kuwaiti Investment Fund made the first investments in poultry integrations in Sudan in the 1979 and in 1984 the Arab Authority of Agriculture Development and Investment launched a second project. These two pioneering projects started with closed systems and state of the art feed mills, and was set as an example to follow for the private sector.

The poultry industry in Sudan saw considerable development only in the last 10 years, with production increasing from 5 million broilers in 2006 to close to 90 million in 2017. While several factors contributed to this increase, the two most important were the
government decision to stop imports of frozen poultry in 2006 and the increase in red meat prices. Other factors that contribute to increase of poultry meat consumption are, urbanization, change in food habits, rising income and population growth.

More than 60% of the broiler production is produced in integrations. Farmers produce the remaining 40%, with farms ranging in size from 10,000 birds to 100,000 birds.

Graph: 1 Broiler Production In Sudan – in ’000

Source: FAO data with adaptation by consultant

Graph 2: Eggs Production In Sudan – in ’000

Source: FAO data with adaptation by consultant
Both Sudan’s growing population (estimated at 2.5% per year in 2016) and growth of GDP income are contributing factors to the increase in demand for protein. This is reflected in the current per capita consumption estimated at around 2.7kg. Amongst Arab countries, Sudan has the lowest per capita chicken consumption.

The value of the poultry industry is US$ 180 Million

Table 8: Breakdown of Poultry Type in Sudan (2016)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeders</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Layers</td>
<td>2,853,911</td>
</tr>
<tr>
<td>Broilers</td>
<td>85,000,000</td>
</tr>
</tbody>
</table>

Source: the Sudanese Poultry Industry – Dr. Mohamad Sirdar

7.2 Breeders and Day Old Chicks (DOC)

Sudan is not self-sufficient in DOC. There are approximately 1 million breeders that produce close to 70 million DOC. Around 10 to 15 million hatching eggs are imported yearly to cover the need in DOC. They are mainly imported from The Netherlands and Belgium. This contributes to keep the price of DOC high and increase the cost of production.

Breeders’ performance and productivity is very low. Breeders are still housed in open system housing even though they are very sensitive to high temperature. Their production is therefore very low in summer season. The overall low productivity of breeders affects both the cost and quality of chicks. This is partly driven by the unusual practice of some integrations of using cages for breeders. This requires artificial insemination, a highly labor intensive process.

One of the potential reasons of using cages could be that farmers might be under the impression that using artificial insemination may produce higher hatchability results. It is however to be noted that such a process requires considerable investment in equipment and labor resources. It is much cheaper to raise breeder in farms on a floor system. The main breeds available are ROSS 308 and Hubbard.
7.3 Infrastructure and Equipment

The Sudanese hot climate is a major contributor to high cost and poor results in poultry in Sudan. It is expensive to invest in a good housing system with climate controls that regulate temperature in the production facility. The correct housing system is the most efficient way to overcome these problems and increase productivity. Commercial poultry production is divided into four farming systems. They differ in capital investment, operating cost, and efficiency.

a. Open System

Considered to be the least costly of all systems, this system is usually used by small and medium size farmers. The poultry house will have open sides with curtains and no insulation. There are no controls for the environment. The internal environment will depend on external temperature and winds. This type of housing gives no control on temperatures. Farmers tend to stop production in cold winter period and hot summer periods to avoid high mortality. Maximum density is around 10 birds per square meter.

b. Semi-Closed System

This system is with open sided window and curtains. Fans are typically installed at the end of the house and are equipped with a climate control. The farmer will have an acceptable control on the house temperature, plus or minus 5 to 7 degrees and can therefore properly manage the house climate, leading to better results in productivity and lower mortality. Best practices put the maximum density at 14 birds per m².

c. Closed System

In this system, the environment is completely controlled. The house has small windows, fans, and sensors connected to an environmental control system that manages the internal climate of the house. This system provides optimal conditions for the birds to grow. Internal temperatures can be up to 20 degrees lower inside the house.

This system requires a higher investment, but will produce a higher return with lower mortality. Best practices put the maximum density at 20 birds per m².
d. Cages System

This system is widely used for layers. Housing could have up to 8 tiers. This system requires a high investment, but saves space and labor. In Sudan, some of the broilers producers are using the cage system as well.

All four systems exist in Sudan, but given that Sudan’s poultry production is relatively young and the investments in the industry are relatively recent, up to 75% of the poultry houses use the closed system housing. In fact, Sudan climate with temperature in summer reaching 45°C requires good ventilation to keep the chicken alive. Only very few old farms still use the open system.

However, these houses will not be used in the peak of the heat period, as good ventilation and insulation are necessary to keep the temperatures in the housing within the comfort zone. Heat stress reduces growth rate, decrease feed intake and results in poor feed conversion. Furthermore, laying birds experience a drop in egg production with heat stress with mortality rates increasing as well.

7.4 Feed

Cost of feed is low in Sudan compared to other African and Middle Eastern countries because Sudan does not import protein and energy. Protein is derived by locally produced peanut cake, while energy is by sorghum and peanut oil.

One of the key observations made during the consultant’s visits to Sudan is the evident and general lack of knowledge in animal nutrition.

Nutritionists and company managers are typically focused on the cost of feed and not its resulting efficiency. In so doing, they are
neglecting the underlying productivity of the bird and the cost of Kg of meat. This results in a feed that does not cover the full nutritional value needs of the birds, which in turn lowers their productivity.

Moreover, the farmers and poultry integrators do not measure the feed conversion at the end of the production cycle at the farm level; instead they do so only after slaughtering. This leads to mistakes and inaccurate performance measurement.

The Feed Conversion Ratio (FCR) is the ratio of inputs to outputs. It is the amount of feed ingested by the chicken that can be converted to one kilo of live weight. It is the key factor to determining how much a chicken is converting feed to live weight. Without this measurement a poultry grower would not be able to determine how well his flock is performing.

Most of the larger poultry integrators in Sudan have good standard feed factories that produce pelleted feed. Smaller farmers (especially in East Sudan) still rely on old fashion feed mixers.

<table>
<thead>
<tr>
<th>Item</th>
<th>Starter</th>
<th>Grower</th>
<th>Finisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity/Kg</td>
<td>Cost in SDG</td>
<td>Quantity/Kg</td>
<td>Cost in SDG</td>
</tr>
<tr>
<td>Sorghum</td>
<td>690</td>
<td>2,277</td>
<td>600</td>
</tr>
<tr>
<td>Peanut cake</td>
<td>240</td>
<td>780</td>
<td>185</td>
</tr>
<tr>
<td>Oil</td>
<td>-</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>Calcium</td>
<td>10</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Toxin Binder</td>
<td>1</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Premix</td>
<td>50</td>
<td>850</td>
<td>50</td>
</tr>
<tr>
<td>DCP</td>
<td>8</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Salt</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Binder</td>
<td>1</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Sesami Cake</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Enzymes</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Methionine</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Lysine</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>1,002</td>
<td>4,996</td>
<td>1,005</td>
</tr>
</tbody>
</table>

Source: Consultant Proprietary Analysis

Unfortunately, it was also observed that even the state of the art factories are ill maintained and have lost their efficiencies and productivities over the years.

### 7.5 Geographic Distribution of Poultry Sector In Sudan

More than 85% of the broiler production is located in the Khartoum
area including Bahri, Omdurman, and around 70% of sales are in the Khartoum urban area.

There are four main poultry producing companies in Eastern Sudan:

Table 10: List of Poultry Farms in East Sudan

<table>
<thead>
<tr>
<th>Name of Farm</th>
<th>Broiler Production/Year</th>
<th>Layers Production/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kassala Poultry</td>
<td>3,000,000</td>
<td>3,000,000</td>
</tr>
<tr>
<td>El Noubalah Farm</td>
<td>450,000</td>
<td>90,000</td>
</tr>
<tr>
<td>Karrar Farms</td>
<td>n/a</td>
<td>36,000</td>
</tr>
<tr>
<td>Jaafar Al Ubaid Farm</td>
<td>300,000</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source: Consultants Proprietary Data

7.6 Local Raw Material

Local raw materials such as sorghum and peanut cake are used in the feed ratios of poultry. The poultry industry in Sudan imports concentrates that are the base to be mixed with the raw materials, with approximately 90% of these concentrates being imported from The Netherlands. Sudan has sufficient raw material available locally to feed all its animal production. The two main raw materials used for poultry feed in Sudan are Sorghum and Peanut cake. They are both available year round at relatively low prices. However, they both carry limiting factors for the productivity of animal production.

To ensure optimum performance of the “genetic” potential of poultry, the raw material used in feed should be free of any nutritional limitations or toxins. In order to pave the way for Sudan to become a poultry exporter, the government of Sudan should issue national directives to agribusiness investors to plant more suitable cereals for the animal feed industry. There is currently some production of yellow corn and sunflower currently in Sudan, however, yearly production figures are not available. A few trials were launched on soya production albeit, with inconclusive results. The Agriculture Research Corporation (ARC) has been doing research using some tropical varieties of soya being used in Nigeria.

UNIDO and The Government of Japan have a joint project entitled “Supporting Food And Nutrition Security In Sudan Through Soya Bean Processing”, which includes trials on soya production and soya processing for food and feed production in the El Gesira State.
Sorghum has tannins that can interfere with the metabolism and absorption of nutrients. As a rule of thumb, we can say that the nutrient value of sorghum is 10% less than corn due to the tannins presence. Plant breeders are improving new varieties of sorghum without tannins. It is very difficult to determine at this time what type of variety of sorghum is being used in Sudan. The availability of yellow corn in the future could help overcome this nutritional limitation by increasing poultry productivity while lowering their cost.

Peanut cake has a protein value of 52% but with very high levels of aflatoxins. Poultry is considered the most susceptible animal species to aflatoxins. Aflatoxins affect the liver and the immune system.

### 7.7 Sudan Poultry Key Figures

Table 12: Poultry Sector Key Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Actual in Sudan</th>
<th>Optimization</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Mortality</td>
<td>14%</td>
<td>3%</td>
<td>11%</td>
</tr>
<tr>
<td>Average Feed Conversion</td>
<td>1.9 Kg</td>
<td>1.6 Kg</td>
<td>19%</td>
</tr>
<tr>
<td>Cycle Length</td>
<td>40 days</td>
<td>32 days</td>
<td>25%</td>
</tr>
<tr>
<td>Average Life Weight</td>
<td>1.84 Kg</td>
<td>1.9 Kg</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: Consultant Proprietary Analysis

Table 13: Cost of Chicken in Sudan

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Cost in USD per live KG</th>
<th>Optimizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOC</td>
<td>$ 0.40</td>
<td>$ 0.30</td>
</tr>
<tr>
<td>Feed</td>
<td>$ 1.00</td>
<td>$ 0.7</td>
</tr>
<tr>
<td>Vaccine</td>
<td>$ 0.04</td>
<td>$ 0.03</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>$ 0.05</td>
<td>$ 0.03</td>
</tr>
<tr>
<td>Heating</td>
<td>$ 0.03</td>
<td>$ 0.03</td>
</tr>
<tr>
<td>Electricity</td>
<td>$ 0.02</td>
<td>$ 0.02</td>
</tr>
<tr>
<td>Labor</td>
<td>$ 0.02</td>
<td>$ 0.02</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 1.42</strong></td>
<td><strong>$ 1.13</strong></td>
</tr>
</tbody>
</table>

Source: Consultant Proprietary Analysis
7.8 Integration of Agriculture

The development of the agriculture and the oil industry has resulted in the introduction of new raw material for the animal feed industry. This is evidenced by the availability of sunflower meal and cotton meal. Yellow corn is gradually becoming available, albeit in limited quantities.

The availability of storage for raw material is not sufficient. As an example, sorghum production is approximately 5 Million tons, while storage capacity is less than 1 Million tons. Farmers store grains for months in the heat or bury them underground to protect them from high temperature. This leads to an increase in the level of Aflatoxins. The Agriculture bank of Sudan is the only source for built to standard storage facilities.

Prices of raw materials are affected by the international market prices. Exports occur when prices on the international markets are high. Traders will export sorghum and peanuts, pushing prices on the local market and negatively affecting the cost of production.

Equally so, prices of raw material are also affected by rainfall and other weather related factors. Prices for locally produced sorghum...
and peanut cake decline in October and November following the start of the harvest season and remain generally stable through March before rising and peaking in August and September.

### 7.9 Diseases And Biosecurity

Diseases are a main challenge to poultry production in Sudan. Prominent viral diseases present are IB (infectious Bronchitis), IBD (infectious Bursal disease) and ND (New castle disease). Mortality rates in farms range from a low of 7% to a high of 20% and during vital disease outbreaks, can reach 80%. As a result, some integrators halt production on some sites in order to eradicate viral outbreaks. The prevalence of these diseases increases production cost and in turn has a negative impact on the sector in general.

### 7.10 Available Laboratories

Several laboratories in Khartoum are well equipped and provide related services to the farmers:

- D’tasi, Koudijs, De Heus
- Coral
- Lana
- Hind
- Ariz Commercial

D’tassi is by far the best equipped with well-trained staff. The laboratory is in joint venture with Koudijs feed owned by De Heus and has an Elisa machine for blood test and a NIR (Near infra-red) to test raw material nutrition value. Some of the laboratory equipment are directly connected online with De Heus technicians in the Netherlands.

The other laboratories mentioned above have basic equipment limited to Elisa Testing and bacteriology. It is important to note that the majority of international vaccine producers have their product well represented and widely available in the country. The Dutch company Intervet Inc. is the leader on the market.

### 7.11 Reasons for High Cost

#### Mortality

Average mortality is around 14% that is almost 5 times higher than the optimum performance. In many cases during disease, outbreak period’s mortality can reach more than 50%. Mortality is typically
caused by viral infections, misdiagnosis of disease and mismanagement in the treatment. Most of the farmers have a tendency to use low-cost treatment that is ineffective.

**Multiage Farms**

Multiage farms are fertile grounds for the spread of diseases. Bacteria and viruses can spread from flock to flock and once infected each new flock is likely to contract the disease. A single stage farm or an all in all out process will reduce diseases, as most of the organisms will go out with the birds when they are removed from the farm.

**Raw Material Quality**

Peanut Cake has very high levels of Aflatoxins, which will reduce the weight gain of birds and will reduce feed intake. It will also reduce egg production and hatchability and increase susceptibility to disease. Although treatment of aflatoxin is available, it is not widely used. Some of the raw material imported from China or India may not have the required quality. The lack of regulations and properly equipped laboratories are exacerbating this problem.

Most of the poultry farmers use a toxin binder in their feed, but from our observations, it is clear that they often do not use the right products and dosage.

### 8. Poultry Sector - Value Chain & Cycle

![Value Chain Diagram](source)

**Figure 4: Value Chain**

Integrators produce more than 60% of the poultry production with the balance being produced by small and medium farmers. Since the outbreak of influenza, the markets for live chickens have been closed. Small farmers slaughter their chicken in slaughterhouses...
and sell their frozen products to traders. There is no trading between small farmers and integrators with regards to live chicken.

Dressed chicken is sold frozen and not chilled. This is mainly due to the fact that retail shops are not equipped with the necessary cold assets to carry chilled chicken, while the producers do not have the necessary equipment and knowhow for a cold chain facility to ensure the quality of the products.
8.1 Market Segmentation

4 large poultry integrators dominate the Sudanese poultry market with modern feed mills and slaughterhouses. Integration is defined as an enterprise that owns and controls multiple stages of production from the breeders, hatchery, and broilers farms, processing plant, feed mill, distribution and marketing.

Vertical integration allow the enterprise to control costs, to control quality, feed production capacity and allow the company to use economy of scale to its advantage.
The main cost advantages come from having control of all production stages, eliminating different intermediaries.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>DOC Annual Production</th>
<th>Slaughter house Capacity (birds per hour)</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mico</td>
<td>20 Million</td>
<td>4,000</td>
<td>Mr. El-Sheikh Mohamed Hasan Tel: +249912167488 Email: <a href="mailto:mhe@mico-sd.com">mhe@mico-sd.com</a> <a href="http://www.mico-sd.com">www.mico-sd.com</a></td>
</tr>
<tr>
<td>Omat</td>
<td>20 Million</td>
<td>4,000</td>
<td>Dr. Rayis Osman Tel: +249877144917 Email: <a href="mailto:osmanraisa@ommat-su.com">osmanraisa@ommat-su.com</a> <a href="http://www.ommat.com">www.ommat.com</a></td>
</tr>
<tr>
<td>Mathew</td>
<td>5 Million</td>
<td>2,200</td>
<td>Mr Ehab Matta Tel: +249183574955 Email: <a href="mailto:ehab_matthew@hotmail.com">ehab_matthew@hotmail.com</a> <a href="http://www.matthewcompany.com">www.matthewcompany.com</a></td>
</tr>
<tr>
<td>Royal</td>
<td>5 Million</td>
<td>3,000</td>
<td>Dr. Alamin Ibrahim Saliman Tel: +249912159170 Email: <a href="mailto:ibrahim58170@hotmail.com">ibrahim58170@hotmail.com</a></td>
</tr>
</tbody>
</table>

Source: Consultant Proprietary Analysis And Desktop Research

<table>
<thead>
<tr>
<th>Company</th>
<th>Yearly Production</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mico</td>
<td>11,000,000</td>
<td>13%</td>
</tr>
<tr>
<td>Omat</td>
<td>8,000,000</td>
<td>9%</td>
</tr>
<tr>
<td>Mathew</td>
<td>4,500,000</td>
<td>5.50%</td>
</tr>
<tr>
<td>Royal</td>
<td>5,000,000</td>
<td>6%</td>
</tr>
<tr>
<td>Sabco</td>
<td>6,000,000</td>
<td>7%</td>
</tr>
<tr>
<td>Marrawi</td>
<td>4,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Arabco</td>
<td>4,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Kuwaiti Sudani</td>
<td>4,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Acolid</td>
<td>2,600,000</td>
<td>3%</td>
</tr>
<tr>
<td>Alquaris</td>
<td>2,300,000</td>
<td>2.70%</td>
</tr>
<tr>
<td>Normandie</td>
<td>2,400,000</td>
<td>2.80%</td>
</tr>
</tbody>
</table>

Source: Consultant proprietary analysis and desktop research
8.2 Distribution Channel

The distribution of poultry is carried many through wholesalers with integrators and slaughterhouses distributing directly to supermarkets and restaurant chains in Khartoum.

Small farmers use slaughterhouses to slaughter their chicken against a fee. They then sell the chicken to wholesalers traders. Prices are set by the prevailing supply and demand conditions with, often fluctuations of 20% to 30%, sometimes even falling below cost during certain periods of the year.

8.3 End User Products

Most of the chicken sold is “whole” chicken (uncut). The development of the catering industry is creating demand for cut and deboned chicken. Producers adapting their products are meeting this demand.

Poultry Integrators have built slaughterhouses during the past 3 to 4 years and are producing good hygienic products. The Sudanese consumer prefers small chickens, with the largest chickens sold at 1.4kg and the average at 1.1kg

8.4 SWOT Analysis Of The Poultry Sector In Sudan

Strengths

- Local availability of raw material
- Land availability
- Investment incentives
Weaknesses
- Diseases
- Lack of know-how
- Need to import DOC
- Hot climate

Opportunities
- Regional supplier
- Population growth
- Future increase in poultry consumption
- Lifting of sanctions

Threats
- Raw material quality
- Economic sanctions & political instability
- Viral diseases

8.5 Banking Sector & Poultry

Several banks are active in the poultry sector. Loans are typically provided to integrations and well-known producers. Assets guaranties are always required. One example is The Animal Resources Bank, which extends $50 Million in loans on an annual basis, of which, 70% is targeted to the Poultry sector.

Several holders who do not have access to financing by banks take loans from private individuals who specialize in such activities, or farm family members.

8.6 The Sudanese Poultry Association.

Active since 2008, the Sudanese poultry association is dedicated to the technical training of middle level managers in the poultry sector with over 220 professional having been trained in 2016. Financed by the private sector, the poultry association provides Training free of charge with the coaching administered by poultry professionals from the private sector.

The association is active in the promotion of poultry consumption and holds monthly dinners to promote new poultry dishes to the Sudanese households.
9.0 Future Prospects For The Poultry Industry

Sudan holds the potential to be an economic powerhouse. It is geographically positioned at the crossroads of sub-Saharan Africa and the Middle East, with fertile lands. It is the third largest economy in North Africa (after Egypt and Morocco) and the largest economy in the greater Eastern Africa region. (World Bank report 2015).

The poultry industry has the potential to greatly contribute to the growth of the economy and become an export industry. The potential for growth from domestic demand is also expected to help grow the industry. The industry will have to rely on contract farming to achieve growth with minimum capital expenditure. The value of the poultry industry is expected to grow steadily for the next decade. The industry needs will continue to grow as well. Poultry housing feeders, drinkers and ventilation and ventilation will need to be imported.

Based on the consultant’s access to market intelligence, there is a great push towards investing in the sector and a long list of major and large farms are in the early stage of planning and development; estimates of productions for the new farms are at circa 60 to 70 million broilers which will almost double the local production from its current 85,000 to circa 153 million by 2020.

Graph 3: Projected Broiler Production In Sudan – in ‘000

Source: FAO data with adaptation by Consultant
Big integrations are benefiting and will benefit most from the growth. Small farmers are disorganized and not efficient. However, we are witnessing a growth in medium size enterprises, where entrepreneurs are investing in projects of 5 to 12 broiler houses along with a small slaughterhouse.

10.0 East Sudan General Overview
Despite high poverty levels, East Sudan is one of Sudan’s richer regions, with Port Sudan acting as the gateway to most foreign trade, along with a number of large-scale, irrigated agricultural schemes.

However, trade and farming revenue has not benefited the region’s majority of herdsmen and subsistence farmers. The region has suffered from poverty, underdevelopment, conflict, neglect and recurrent natural disasters. The highly centralized government, with a near monopoly on the collection and redistribution of revenues, has returned only meagre allocations for education, health and other services in the East.

As a result, the region has some of the worst development indicators in Sudan, with high rates of global and acute malnutrition, low levels of literacy and school attendance and inadequate access to healthcare and clean water.

Eastern Sudan’s population is approximately 4.8 Million. For more than four decades, East Sudan has hosted large numbers of refugees, mainly from Eritrea and Ethiopia, and more recently from Somalia. The continuing arrival of new refugees is creating further demand for assistance, with agriculture as the predominant method for livelihood sustainment.

Red Sea State together with the Kassala and Gedaref regions comprise what is known as East Sudan. These states share a number of historical, ethnical, social and political characteristics. They also share the experience of long standing marginalization, underdevelopment and chronic poverty. The below table provides a breakdown of the population in the three states.

<table>
<thead>
<tr>
<th>State</th>
<th>Population (1000)</th>
<th>% of Sudan</th>
<th>% Urban</th>
<th>% Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kassala</td>
<td>1,625</td>
<td>5</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>Gadarif</td>
<td>1,674</td>
<td>5</td>
<td>31</td>
<td>69</td>
</tr>
<tr>
<td>Red Sea</td>
<td>1,450</td>
<td>2</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,749</strong></td>
<td><strong>12</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Sudan Central Bureau Of Statistics

10.1 Red Sea State Profile In Brief

Red Sea State is located in the northeast of Sudan (latitude 16 to 22 North, longitude 35 to 37 East), with national borders to Egypt in
the North, and Eritrea in the South. Within Sudan, the state borders Kassala State in the South and River Nile State in the West.

Table 1: Red Sea State Key Data

<table>
<thead>
<tr>
<th><strong>Red Sea State Key Data</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital</strong></td>
</tr>
<tr>
<td><strong>Location</strong></td>
</tr>
<tr>
<td><strong>Size</strong></td>
</tr>
<tr>
<td><strong>Population</strong></td>
</tr>
<tr>
<td><strong>Climate</strong></td>
</tr>
<tr>
<td><strong>Roads</strong></td>
</tr>
<tr>
<td><strong>Main Towns</strong></td>
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<td></td>
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<tr>
<td><strong>Airport</strong></td>
</tr>
<tr>
<td><strong>Communications</strong></td>
</tr>
<tr>
<td><strong>Water Resources</strong></td>
</tr>
</tbody>
</table>

Source: Consultants Proprietary Tabulations
Red Sea State Economy Overview

The Red Sea State in Eastern Sudan is one of the 18 states of Sudan with an area of 212,800 km² and an estimated population of 1,396,000.

Port Sudan, a multi-ethnic city is the capital of the state, which has 11 districts.

The Port-Sudan harbor in eastern Sudan is an important and major resource for Sudan’s economy. It is the port through which Sudan’s oil export and imports are transacted.

Population & Demographic Indicators

Table 20: Red Sea State Population Distribution

<table>
<thead>
<tr>
<th>Segment</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>General population:</td>
<td>1,450,000</td>
</tr>
<tr>
<td>Average family size:</td>
<td>5.1</td>
</tr>
<tr>
<td>Urban:</td>
<td>38%</td>
</tr>
<tr>
<td>Rural:</td>
<td>51%</td>
</tr>
<tr>
<td>Nomadic:</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: 5th Sudan Population and Housing Census
Main Farms in Red Sea State

Picture 1: El Noubalak Farm

Source: Consultant proprietary photos

El Noubalak farm is located closely to Port Sudan City. It is a small operation contributing a small part to the region’s consumption of poultry.

The farm has 4 broiler houses each with a capacity of 35,000 and one slaughterhouse with a capacity of 2,000/hour. Other than a small feed mill, the farm has no breeders and no hatchery. Using the mash feed system; the farm has 3 layers houses in cages housing 50,000 each (what?) with no rearing house.

The farm’s Day Old Chicks and other needed supplies such as vaccines and antibiotics are procured and supplied from Khartoum. The area itself is relatively disease free since there is no presence of other poultry farms, reducing risk of cross contamination.

Its proximity to Port Sudan is an added competitive advantage, as the nearest other poultry farm in Kassala is more than 670km away. Other producing farms are located further away approximately 800Km from Port Sudan. Given that the transportation costs from Khartoum to Port Sudan are estimated at $50/MT, El Noubalak’s location provides the company with a potential for growth and capacity increase to sufficiently supply the Port Sudan Area.

One or two small operators are also located in Port Sudan. Their production is very limited with no regular supply of chickens to the market.
SWOT Analysis

Strengths:
• Port City
• Future touristic potential
• Lack of sufficient poultry supply
• Land availability

Weaknesses:
• Hot climate
• Water scarcity
• No local DOC
• No laboratories in the state
• Lack of continuous electricity due to inadequate distribution system
• Distance from Khartoum

Opportunities:
• Supply to ships at the port (also known as “chandeling”)

10.2 Kassala State Overview

The early establishment of Kassala goes back to the early 16th century when a number of villages on the east bank of the Gash united. Kassala was chosen as the eastern administrative center by the Turks in 1840 and since then remained the most important administrative center.

Figure 7: Kassala State
Overview of The Poultry Sector In East Sudan – A Study for The Netherlands Enterprise Agency

Table 21: Red Sea State Key Data

<table>
<thead>
<tr>
<th>Segment</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital</strong></td>
<td>Kassala Town</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Between longitudes 37E and 35W and 14.15 and 17.15N. It has Eastern boundaries with Eritrea (235km) and Ethiopia (17km). It borders the Red Sea State at the North, Gadaref State at the South West and Nahr-Al-Nil State at the North-West borders.</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>42,282 km²</td>
</tr>
<tr>
<td><strong>Climate</strong></td>
<td>Dominated by North-Eastern winds in winter and southern winds in autumn. The vegetation zones vary from desert, semi-desert, savanna and valley environment. Ambient temperature ranges from 33°C to 47°C. Annual rainfall varies between 350-400mm.</td>
</tr>
<tr>
<td><strong>Roads</strong></td>
<td>The state is connected to the National Road Khartoum-Port Sudan. Internally there are Halfa-AlGirba Road which is connected to the National Road</td>
</tr>
<tr>
<td><strong>Main Towns</strong></td>
<td>Kassala, Al Girba, New Halfa, Aroma, and Wagar</td>
</tr>
<tr>
<td><strong>Airport</strong></td>
<td>One small airport at Kassala town and a smaller airport at New Halfa</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>Communication services are available in the state</td>
</tr>
<tr>
<td><strong>Water Resources</strong></td>
<td>Potable water services is available to over 65.8% of population at the urban centers. Water for agriculture is available throughout the year from Al Girba dam and Atbara River and seasonal irrigation from Gash River and other valleys</td>
</tr>
</tbody>
</table>

Source: United Nations

Kassala Economy Overview

Kassala’s economy is predominately based on agriculture, mainly vegetables and fruits. An important factor in the Kassala economy is the smuggling of goods to Eretria and Ethiopia. Kassala is also a destination for internal tourism.

Population & Demographic Indicators

Table 22: Kassala Population Distribution

<table>
<thead>
<tr>
<th>Segment</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>General population:</td>
<td>1,678,603</td>
</tr>
<tr>
<td>Average family size:</td>
<td>6.3</td>
</tr>
<tr>
<td>Urban:</td>
<td>36%</td>
</tr>
<tr>
<td>Rural:</td>
<td>52%</td>
</tr>
<tr>
<td>Nomadic:</td>
<td>12%</td>
</tr>
<tr>
<td>Refugees:</td>
<td>83,071</td>
</tr>
<tr>
<td>Internally displaced:</td>
<td>66,511</td>
</tr>
</tbody>
</table>

Source: 5th Sudan Population and Housing Census
Refugees in the state represent 82.2% of the total number of refugees in Sudan and 5% of the state population. However, these numbers may be overestimated due to double counting, double registration by refugees, the maintenance of deceased refugees and deliberate inflation to insure additional resources. As in all other Sudanese states, tribal composition plays an important role in the population make-up of the area.

**SWOT Analysis – Kassala**

**Strengths:**
- Availability of water
- A border city
- Availability of land

**Weaknesses:**
- Lack of know how
- Hot climate
- Distance from Khartoum

**Opportunities:**
- Border City
- Unmet poultry demand

**Threats:**
- Political stability
- Infectious diseases
- Climate change

**High Level Overview of the Poultry in Kassala**

All the major Sudanese integrations have a distribution center in Kassala. The production of Kassala Farms, the only local producer does not meet the local demand.

The distribution centers are focused mainly on exporting to neighboring countries. It was not possible to obtain any figures on this activity due to the refusal of local traders to provide any information.

Farms in Kassala do not have breeders for DOCs and none exist in the region. The region’s DOCs needs are imported from Khartoum. Similarly, farmers have to purchase any veterinarian products from Khartoum, as related products are not available in Kassala.
Kassala Farm

Kassala Farms was established in 2003 and has annual production capacity of 3 Million broilers. The company has a feed mill with a pelleting capacity of 5T/hour. The feed mill also produces feed for ruminant. Currently its production capacity is 80 MT/day using three shifts per day. The management has recently purchased a new 20/MT per hour feed mill that will come online later this year. The company purchases its DOC from Khartoum and has a small laboratory equipped with an Elisa machine.

The company’s sales are estimated at 300 MT/year, with no competition from other companies in the Khartoum area. Their products are sold in the three provinces in East Sudan, Read Sea, Kassala, and Gedaref.

10.3 Gedaref State Profile In Brief

Gedaref State, together with Kassala and Red Sea State, comprise the region of East Sudan as defined by the Eastern Sudanese Peace Agreement and consequent administrative arrangements.

![Gedaref State Map](image-url)
Overview of The Poultry Sector in East Sudan – A Study for The Netherlands Enterprise Agency

Table 23: Gedaref Key Data

<table>
<thead>
<tr>
<th>Capital</th>
<th>Gedaref City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>located between longitudes 33° 30’ and 36° 30’ to the East, and latitudes 12° 40’ and 15° 46’ to the North. Gedaref shares an international border with Ethiopia to its East. The state is bordered by Kassala and Khartoum State to the North, El Gezira State to the West and Sennar State to the South.</td>
</tr>
<tr>
<td>Size</td>
<td>71,000 km²</td>
</tr>
<tr>
<td>Climate</td>
<td>The climate is hot and rainy in the summer. The rainy season extends four months, with an average of annual rainfall of 700 to 900 mm. In the autumn during the rainy seasons, large pools of water and green meadows with trees of various kinds cover the area.</td>
</tr>
<tr>
<td>Roads</td>
<td>The city is served by a station on the national railway network. It is linked with the capital Khartoum via Wad Medani city by a net of roads, railway, airway, and seasonal direct roads. It is also linked to Port Sudan city with roads and railway through Kassala. There are also roads to the Gallabat at the edge of the boundary with Ethiopia connecting Gedaref with the Ethiopian city of Gonder, and from there to the Ethiopian capital Addis Ababa.</td>
</tr>
<tr>
<td>Main Towns</td>
<td>Bakr, El Nur, Al Khama, Al Midan, Abbas, Saukin, Saad, Hamad</td>
</tr>
<tr>
<td>Airport</td>
<td>Azaza Airport is an airstrip serving the town of Gedaref in Sudan.</td>
</tr>
<tr>
<td>Communications</td>
<td>Communication services are available in the state</td>
</tr>
<tr>
<td>Water Resources</td>
<td>Between the months of March and April, the rivers are usually reduced to sandy river beds. These areas however continue to offer a potable water supply via shallow wells and support small-scale production of horticultural crops for household consumption. Gedaref also benefits from a number of surface and underground water basins</td>
</tr>
</tbody>
</table>

Gedaref Economic Overview:

Gedaref a city of approximately 250,000 inhabitants is well known for the production of sorghum. Approximately 8 Million Fadans are planted every year, representing more than 50% of the total area cultivated for sorghum in Sudan.

Other seeds cultivated include sesame seeds, sunflower seeds and millet. The area has no proper irrigation structures and cultures are rain fed.

Population & Demographic Indicators

Table 24: Gedaref Population Distribution

<table>
<thead>
<tr>
<th>Segment</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>General population:</td>
<td>1,674,000</td>
</tr>
<tr>
<td>Average family size:</td>
<td>6.2</td>
</tr>
<tr>
<td>Urban:</td>
<td>39%</td>
</tr>
<tr>
<td>Rural:</td>
<td>51%</td>
</tr>
<tr>
<td>Nomadic:</td>
<td>10%</td>
</tr>
<tr>
<td>Refugees:</td>
<td>20,670</td>
</tr>
<tr>
<td>Internally displaced:</td>
<td>14,760</td>
</tr>
</tbody>
</table>

Source: 5th Sudan Population and Housing Census
SWOT Analysis: Gedaref

Strengths:
- No self-sufficiency
- Availability of raw material

Weaknesses:
- Hot climate
- No laboratories in the state
- Poor electricity distribution
- Distance from Khartoum

Opportunities:
- Negligible production of poultry
- Poultry supply is mostly coming from out of state

Threats:
- Political stability
- Infectious diseases
- Climate change

High Level Overview of the Poultry in Gedaref

Poultry production in Gedaref is limited to one closed system production site of 3 houses, and approximately 500 small produces scattered throughout the state with annual production from 500 to 5000 chickens using open system farms. Around 20 farmers have layers farms with a capacity ranging from 500 to 2000 chickens. Gedaref is self-sufficient neither in chicken nor in eggs. The existing local farms cover a fraction of the consumption demand.

Jaafar Al-Ubaid Farm

This farm is the only farm in Gedaref with a closed system. It consists of 3 poultry houses with a capacity of 11,000 chickens each. The equipment, feeders, fans and waterers are all Chinese made. As in the case of other states, DOCs are purchased from Khartoum.
There is one feed mill with one mixer that is locally manufactured. Given that, it is highly unlikely that this mixer can produce the correct mixing needed to have a homogeneous feed.

Chicken are slaughtered on site at the farm in one of its storage facility. There is no proper slaughterhouse. The only equipment available is a small locally made de-feathering machine.

The chicken are frozen in a freezer room at a temperature of -20°C, which is no in line with the industry standard of -40°C, resulting in a very low quality product.

In spite of the bad quality and very low hygiene of the chicken produced, the chickens are always sold out, and the business seems very profitable.

**11.0 Key Findings – East Sudan**

The main aim of the study was to assess how the Dutch poultry sector can contribute to further development of the Sudanese poultry sector, namely in East Sudan. Throughout our research and field visits, we were able to identify key findings, namely:

- Eastern Sudan suffers from marginalization underdevelopment and economic inequities, which indirectly affect the potential for the poultry sector
- The region is also plagued with issues of lack of basic services and employment opportunities
- The overwhelming majority of hired agricultural laborers is highly disadvantaged and suffers from a lack of access to basic services.
- Protracted refugee situation
- Low literacy levels
- Limited livestock ownership levels
- Limited access to land and machinery
- High unemployment levels
- Rise in inflation rates
- Decrease in value of national currency

**The main livelihoods in East Sudan are:**

- Agriculture and agricultural labor are the main sources of livelihood for the majority of both population groups but production is generally low, traditional methods of production and subsistence farming dominates, and the majority is seasonal rain fed crop production.
• From earlier livelihood assessments by UNHCR, it appeared that agriculture is the main source of livelihoods for the local communities.
• There are large numbers of migratory laborers from Eriteria.

The two main economic activities and sources of income at household level are:

• Crop production
• Animal production (mainly ruminants)

**Poultry in East Sudan:**

• The sector is highlight fragmented with little or no market sophistication
• Lack of cooperation between State and local players
• There is no contract farming as is the case in all of Sudan
• There are no formalized relations between local farmers and the larger integrators
• There is an endemic lack of knowhow and knowledge amongst local growers
• There is lack of proper veterinarian support
• Evident and general lack of knowledge in animal nutrition.
• In spite of the bad quality and very low hygiene of some of the chicken produced, the chickens are always sold out, which confirms the potential for this industry.

**Additional General Findings:**

• Sudan is self-sufficient in broiler production, but still imports some hatching eggs. All the integrators have their own breeders with extra capacity to sell DOC on the market.
• Effective cooperatives are non-existent, and past failures such as the Gezira cooperative, have discouraged the set-up of new ones.
• Training at all levels of the production chain is needed especially for small farmers to develop the required skills to keep pace with the growing demand and maintain their position in the production process.
• It is safe to assume that given the demand in the poultry sector, parallel demand for feed additives, concentrates, premixes and other health related products would equally grow.
• It is important that close coordination and planning between the integrations and agriculture sectors is maintained. This is to avoid raw material shortages and ensure adequate quality for poultry production.
• State of the art poultry equipment and related technical knowledge are key drivers for the future development of the poultry industry in East Sudan.

Limiting Factors In The Development Of Poultry Farms In East Sudan

Climate

The three states have very high temperatures in the summer, which would require a potential poultry producer to invest in a closed system housing, at not less than $ 140,000 per 1,000-m2 house. This level of investment is out of reach for the small producers.

During interviews with local businessmen that could afford such an investment, they indicated that they did not have the courage/knowhow to venture in a business they did not know.

Water

Water is also very scarce in the three states. There is no sufficient water distributed by the government. Anyone wanting to invest in a poultry project must dig a water well. Although water is found at around a level of 100 meters, this is another investment that a small farmer cannot afford.

Electricity

The government electricity does not cover most of the area outside the urban city limits throughout the three states. Any farm with closed system needs 24 hours electricity. Usually at least two generators are required per production site in order to cover the power needs of a poultry farm.

Lack Of Available Services For A Poultry Industry

The lack of services such as veterinary products availability, supply of DOCs, supply of raw material (feed additives), the lack of laboratories services are all limiting factors in the development of a poultry industry throughout the three states.
12.0 Recommendations

With the objective of identifying key areas where Dutch companies could play effective roles in the poultry sector in East Sudan, the following recommendations have been compiled:

1. Provision of training to local farmers, veterinarians and farm managers
2. Transfer of knowhow and technology to local farmers
3. Cooperation with National, State and Farmers’ Associations to develop training programs and awareness campaigns on the sector
4. Development of financial support programs aimed at enabling local growers to develop and grow their business
5. Cooperation with larger producers to systemize and promote contract farming
6. Encourage relocation of existing poultry farms from Khartoum to Gedaref.
7. Encourage the establishment of new poultry projects in Gedaref.

We believe that Dutch poultry equipment and raw material producers have an opportunity to expand their activities in East Sudan. Given the Dutch’s involvement in Sudan throughout the years, credibility and trust has been established with the local communities. As such, Dutch companies should focus their efforts not only on marketing their products, but also on transferring knowledge and solutions. In this regard, the following specific recommendations have been identified:

• Develop several free regional training and capacity building programs in Kassala, Gedaref and Red Sea and explore the possibility of providing certified training to the local farming communities
• Develop financing programs (within the sanctions restrictions) to make available loan facilities to the local farming communities.
• Explore possible involvement of Dutch and Sudanese development banks in the development of these financing programs, including export credit insurance and other related products
• Explore provision of Dutch products and raw material on extended payment terms to the local farming communities
• Encourage the Private Sector to develop integrated veterinary services projects (for rural areas such as mobile clinics etc.)
• Increase credit to agriculture and provide small holders with micro credits and micro finance.
• Expand crop and livestock insurance

While the aforementioned recommendations require some investment from the Dutch companies, the potential future returns will outweigh these investments. By pursuing this strategy, Dutch companies would be able to:

• Develop local capacity and knowledge on various technological advancements in both equipment and raw material
• Indirectly promote their equipment and raw material
• By developing a Dutch product and raw material financing program, Dutch companies would ensure current and future brand loyalty

To achieve these objectives, the Dutch companies should develop a market strategy to target and empower several stakeholders, namely:

• Relevant National and State agricultural government institutions
• Relevant formal or informal farmers’ associations
• Relevant national and state veterinarians
• Relevant national and state laboratories
• National and state integrators
13.0 Appendices

Appendix A: Field Visits Meetings Logs

1. Visit from February 5 to 9 2017
   Travel to Khartoum via Cairo
   Meetings:
   o Ms. Esther Loeffer, Netherland Embassy Sudan, Deputy Head of Mission.
   o Mr. Salah el-Deen al-Ghabash, Poultry consultant.
   o Dr. Nawal Abdallah Abdelgalil, Ministry of Agriculture.
   o Mr. Muhammad Hassan el-Cheikh, General Manager MICO.
   o Mr. Pascal Giovanni, Animal feed value stream manager, Dal Group.
   o Dr. Muhammad Salih Gaber, Minister of Agriculture, Khartoum State.

2. Visit from February 22 to 25 2017
   Travel to Khartoum via Cairo
   Meetings:
   o Visit Sudan poultry expo.
   o Ms. Esther Loeffer, Netherland Embassy Sudan, Deputy head of Mission.
   o Dr. Ahmad Eljack, Lana for veterinary services.
   o Dr. Ayman Ahmad Abu Samra.
   o Pieter Geldof, Geldof poultry products Belgium.
   o Mr. Antoine El-Koury, Middle East Sales Manager, VDL Agrotech.
   o Mr. Bert Vinke, Area manager Middle East, Hendrix Genetics.

3. Visit from May 5 to 11 2017
   Travel to Khartoum via Cairo
   Meetings:
   o Dr. El-Haj Khalafalla Mohamed, President of Sudan Poultry Association.
   o Dr. Kamal Ismail Omar, Director of investment and Finance in Animal Resource Bank.
   o Mr. Issam El-Dine Abdel Rahim Surkahi, Minstry of Agriculture Port Sudan.
   o Mr. Omar, Farm Manager, Kassala Farm.
   o Dr. Salah El-Dine Fadle El-Sayed, Veterinary, Gedaref
   o Mr. Sheick Mohamed Abdelatif, Association of Poultry producers of Gedaref.
Appendix B: Sudan Regulatory Environment

In order to achieve economic diversification, the Government of Sudan has stressed the need for foreign direct investment. However, Sudan’s business environment continues to present significant challenges to those seeking to invest in the country.

The World Bank Doing Business Report 2015 ranks Sudan at position 160 out of 189 countries. Transparency International ranks Sudan in the bottom five countries in the world in its 2014 Corruption Perception Index. The situation is further complicated by comprehensive sanctions placed on Sudan by the US Government. However, foreign direct investment is evident in the country, particularly in the natural resources and agricultural sectors. China, Malaysia and India have invested in the oil sector, and countries including the Gulf States, Turkey, Indonesia and South Africa have made steps to expand their commercial engagement with Sudan. Efforts are being made to foster a more favorable investment climate. The High Council in Investment has been entrusted with the task of establishing mechanisms for coordination among investment related governmental agencies for the sake of simplifying investment procedures and removal of barriers.

Bilateral and Multilateral Treaties
Sudan is a member of the Common Market for Eastern and Southern Africa, the Arab League and the Intergovernmental
Sudan is also an observer of the World Trade Organization. Further, Sudan has bilateral investment agreements with Germany, Netherlands, Switzerland, Egypt, France, Romania, China, Indonesia, Malaysia, Qatar, Iran, Morocco, Oman, Turkey, Yemen, Bahrain, Ethiopia, Jordan, Syrian Arab Republic, United Arab Emirates, Switzerland, Egypt, Libya, Tunisia, Algeria, Kuwait, United Arab Emirates, Lebanon, Chad, Djibouti, India, Vietnam, Bulgaria and Italy. It also has bilateral taxation treaties with Egypt, United Kingdom, Malaysia, South Africa, Turkey and Syria.

**Institutions Governing Investment Promotion**

There is a new law that came into force in 2013; the National Investment Encouragement Act, 2013 (the Act), which aims to encourage investment in projects that achieve the national strategy development plans and investment initiatives of Sudanese and non-Sudanese private sector, as well as co-operative, mixed and public sector, as well as rehabilitation and expansion in investment projects. The Act provides that there shall be no discrimination between the investors as being Sudanese or non-Sudanese, or as being public, private, co-operative or mixed sector, and that no discrimination shall be between similar projects in similar locations in respect of granting incentives and guarantees.

Under the Act, a Council called ‘The Higher Council for Investment (the Council) was established by a decision of the President, and headed by him. Beside the Council, the Act provides for the establishment of an authority; The National Authority for Investment, (the Authority); the Chairman of the Authority is a member and secretary of the Council. The Council is the highest authority in charge of investment and has the power to:

- approve the general policies, strategies, plans and programs required to achieve investment targets and follow up of execution;
- create an attractive investment environment, eliminate obstacles and facilitate business process;
- determine the scopes and priorities of investment and set up the general guidelines in accordance with the general policies and investment plan;
- set up technical committees;
• review laws related directly or indirectly to investment;
• determine under-developed areas;
• co-ordinate among the authorities concerned with investment at national and state level;
• supervise over good practices, review reports submitted by the Authority and issue appropriate directions;
• approve the Authority’s budget and its organizational structure

The Authority has a General Secretary appointed by the President upon the recommendation of the Chairman of the Authority. The Secretary is accountable to the Chairman of the Authority. All the proceedings related to services for the investor are handled through a one-stop window system established at the Authority, with membership of the Commissioners representing the ministries that have a relationship with investment. The Commissioners shall have full authority of the ministries and departments each represent. Each state shall set up a one-stop window regarding investment projects within the state.

**Investment Incentives**

Tax Exemption - Projects capital imports approved by the Authority shall be exempted from Value Added Tax (VAT).

**Exemption from Customs Duty** - The Authority may grant the project exemption from:

- Customs duty on capital imports which are not enrolled in custom tariff;
- Customs duty of transport conveyances, excluding administrative vehicles.

**Land Allocation** - The Authority may allot the land required for establishing national or strategic investment in coordination with the states’ authorities. It may also renew the term of the leasehold of the land where the project is established.

The concerned authorities at states shall register lands for industrial and services projects as well as agricultural lands, and shall carry out the detailed technical planning and surveys as well as preparation of the required maps and deposit them with the Authority for allotment.
Guarantees and Facilities of the Investment:

- The assets and properties of the project shall not be subject to nationalization, seizure, confiscation or appropriation either wholly or partially, except for public interest against fair and immediate compensation.
- The Funds of the project shall not be subject to seizure, confiscation, appropriation, freezing, attachment or receivership, except with judicial decree or order from the competent prosecution.
- Re-transmission of invested capital in case of non-execution, liquidation or disposition of the project by any manner of disposition with the approval of the Authority, provided that all legally due obligations are met.
- Re-export, sale or assigning machineries, equipment, goods, apparatus, transport conveyances or other ancillaries imported on the account of the project in case of non-execution of the project wholly or partially whenever all legally due obligations are met.
- Transfer of profits and financing cost of foreign capital or loans in the currency by which Central Bank of Sudan deals or the loan on maturity date, after payment of all legally due obligations of the project.
- Import raw materials, which the project and its products need.
- Invested capital in foreign currency shall be determined and the Authority in co-ordination with the concerned authorities in kind shall evaluate elements of capital.

Other Matters Enjoyed By The Investor Are:

- recruitment of licensed labor according to the terms and conditions stipulated by the relevant laws and regulations;
- the foreign investor shall obtain work and residence permits for himself and his family throughout the term of execution and operation of the project according to the relevant laws;
- wages and allowances of non-Sudanese laborers of the project shall not be subject to social insurance.

Income Tax

A company is deemed to be tax resident in Sudan if it is incorporated in Sudan under the Companies Act, 1925 or if the
management and control of its affairs are exercised in Sudan in the relevant tax year. Resident companies are liable to tax on their worldwide income, whilst non-resident companies pay tax on profits derived from a Sudanese source only.

**Appendix C: Reference List**

The following is a non-exhaustive list of references and sources which were consulted in the preparation of this report.

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