



# Gum Arabic

A value-chain Analysis for Nigeria's competitiveness

# The “Dessert Gold of Africa” is an Important and Versatile Ingredient used in Various Industries across 180 countries.

Gum Arabic is a natural product derived from hardened acacia tree sap harvested in the Sahel region of Africa. Gum Arabic is the most commercially valuable Gum extracted from plants, given its many desirable properties, edible nature and natural origin . It is, therefore, a primary ingredient across industries, particularly food, pharmaceuticals and cosmetics. .

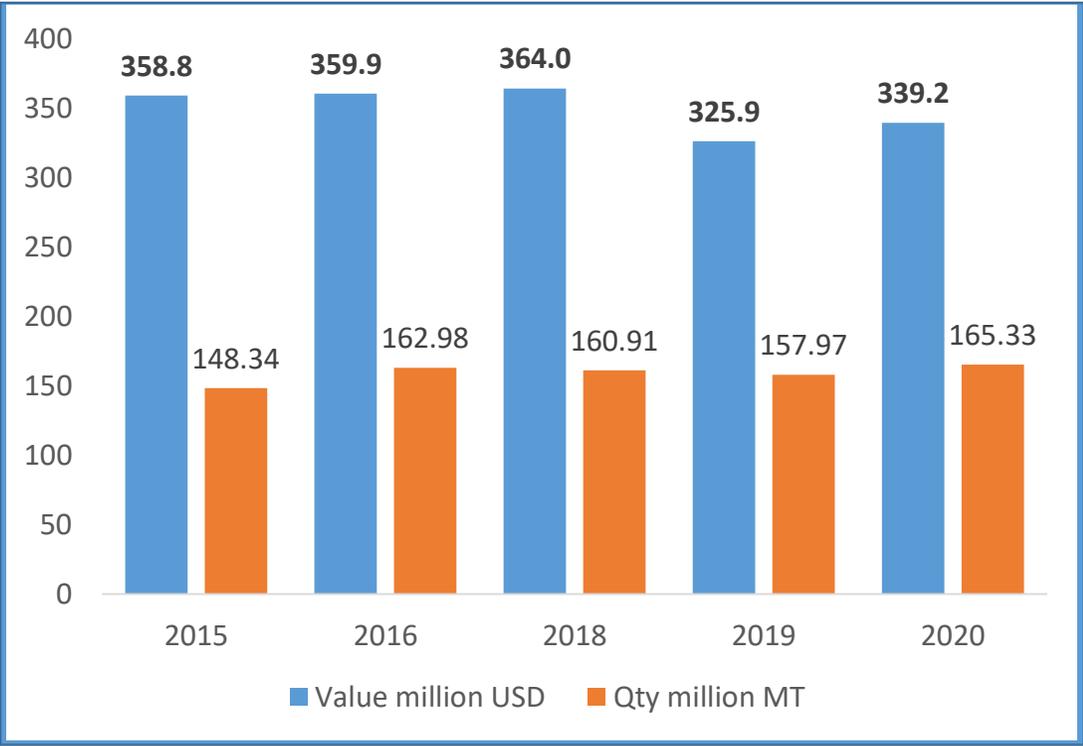
The product serves as a stabiliser, a binder, an emulsifier, and, a viscosity-increasing agent in confectionery, soft drinks, wine, as well as, non-food products such as pharmaceuticals, cosmetics, printing, ceramics, photosensitive chemicals, textiles, paper, ink, paints and adhesives.

**A summary of the main industries that use Gum Arabic:**

<b>Food and Beverage Industry</b>	<b>Pharmaceutical Industry:</b>	<b>Cosmetics Industry</b>
<ul style="list-style-type: none"> <li>• Confectioneries use it to prevent crystallisation of sugar</li> <li>• Dairy products: applied as a stabiliser in frozen products</li> <li>• Bakery products: used for their viscosity and adhesive properties</li> <li>• Beverages: used as a foam stabiliser in beer and as a clouding agent to give opacity. Wine makers use gum Arabic as a wine fining agent.</li> <li>• Flavour emulsifier: used as an emulsifier and protective collide</li> <li>• Diabetic and dietetic product: used because of its low level of metabolism</li> </ul>	<ul style="list-style-type: none"> <li>• Emulsions: used as a stabiliser</li> <li>• Tablets: used as a binder</li> <li>• Tablet coatings: used as a mucilage</li> <li>• Cough drops and syrups: used as an emollient and demulcent</li> </ul>	<ul style="list-style-type: none"> <li>• Lotions and protective creams: used to give a smooth feel</li> <li>• Facial masks: used as an adhesive</li> <li>• Face powders: used as an adhesive</li> </ul>

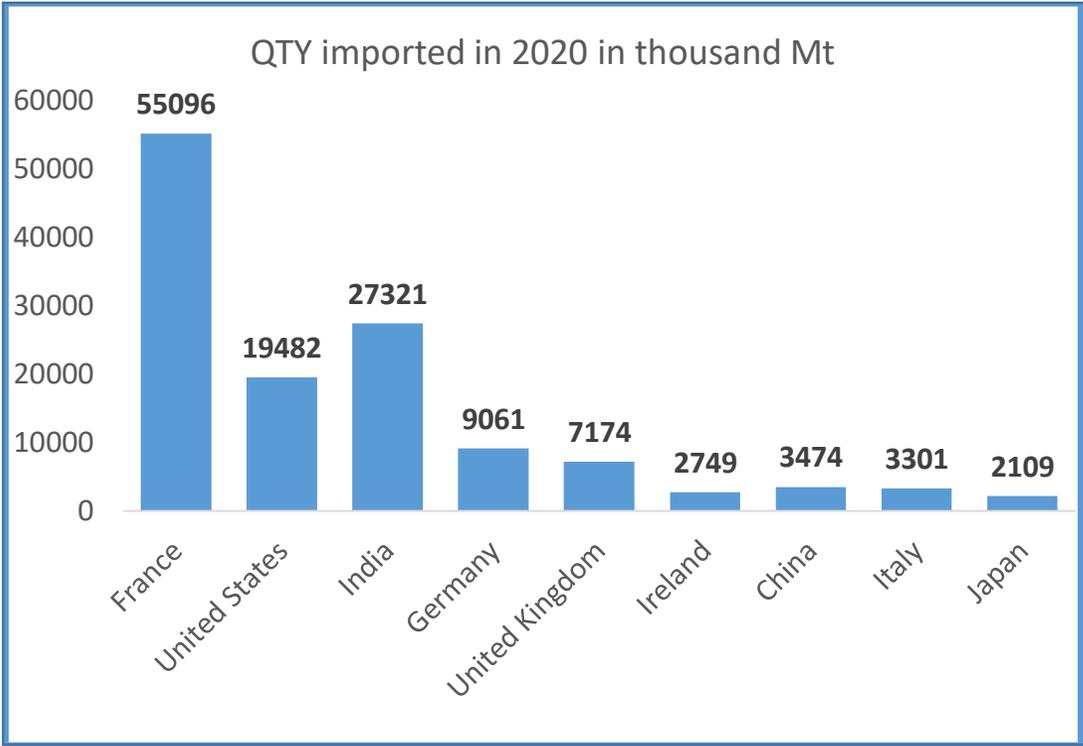
# The Global Gum Arabic market is forecast to hit USD 600 million by 2025 as international demand continues to grow.

Over 165 thousand metric tonnes of Gum Arabic, worth over \$339 million was imported in 2020.



Value and quantity of imports 2015-2020

Europe is top importer, led by France. Demand from India and the United States remains strong.



Source: WTIS

Source: WITS

# The growing demand for Gum Arabic is driven by its versatile functionality and superiority over substitutes.

## Global Demand

- Global food and beverage industry account for about 60% of its global usage.
- Demand is gradually rising in the pharmaceutical and cosmetics industries where they have found significant use case for Gum Arabic as an emulsifying and stabilizing agent.
- There are 3 species of Gum Arabic Acacia Senegal (grade 1); Acacia Seyal (Grade 2); and Acacia seberina (Grade 3).
- France, the US, the UK and Germany are the world's major buyers of grade 1 gum Arabic.
- India is a major buyer of grade 2 gum Arabic which is mostly produced in Nigeria.

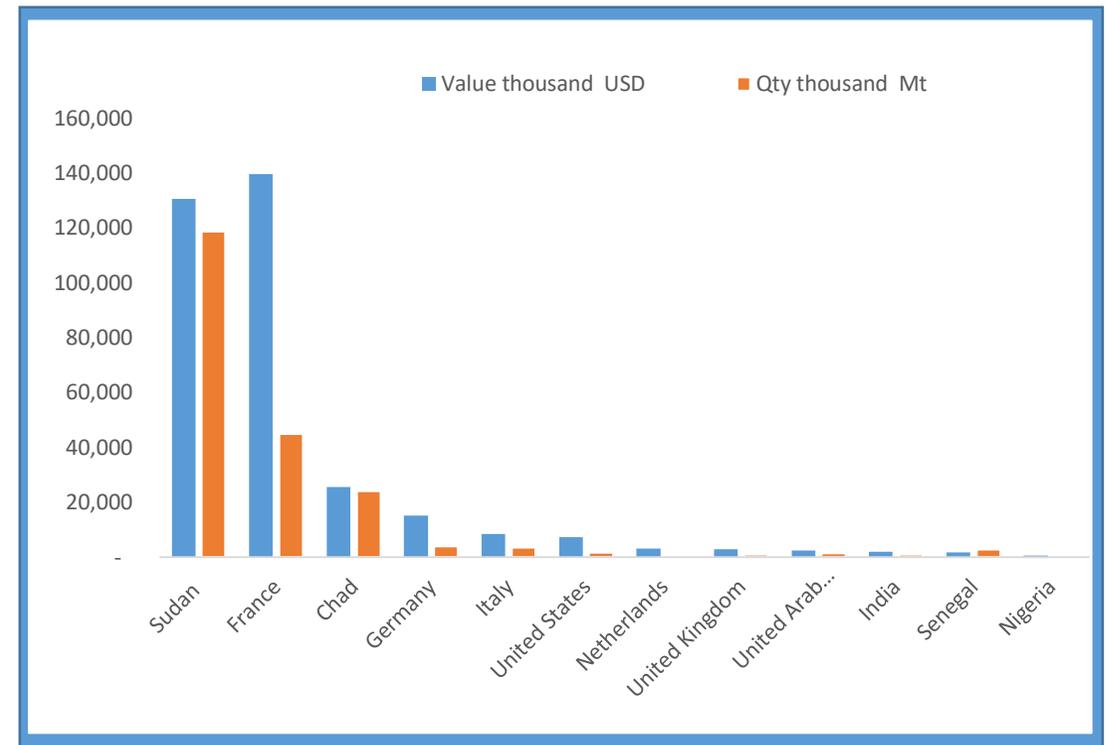
## Emerging Trends and Potential Drivers of Growth

- Food manufacturers are increasingly replacing fats with gums
- Rising popularity of gluten-free products as seen in Europe.
- The rise in demand for low-calorie products in advanced countries.
- Continuous research and innovation in the functionalities and properties of Gum Arabic in industry and health is also stimulating demand
- Rise in demand for organic products and trace of origin: traders and manufacturers are increasingly interested in organic products, their origin and traceability of Gum Arabic.

# Sudan and France are the top global exporters of Gum Arabic. Sudan dominated quantity exported as France derived the most value in exports

Over 205 thousand tonnes of Gum Arabic, worth \$345 million was exported in 2020.

**Sudan has the highest exports. France dominates as a hub and (re-)exporter of refined Gum Arabic.**

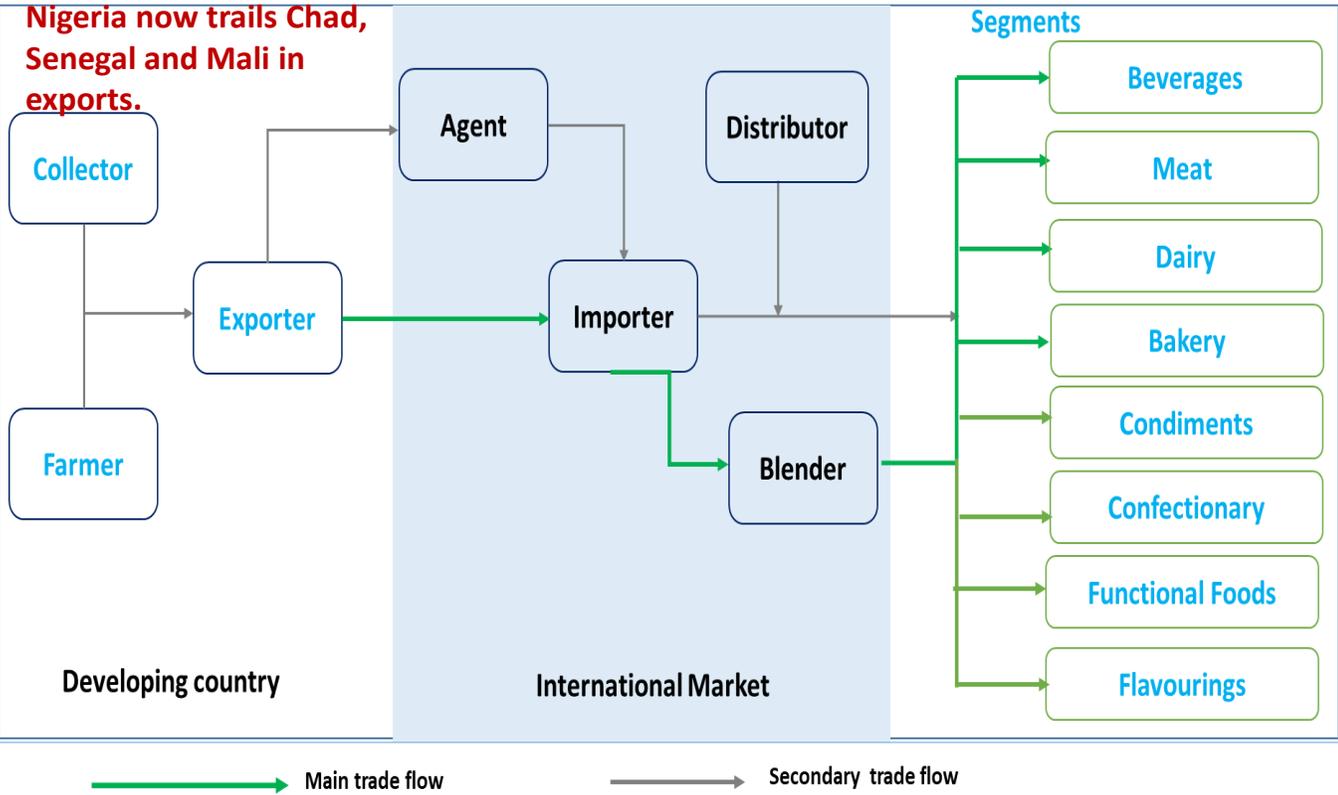


Gum Arabic export 2015-2020

# Gum Arabic is mainly produced in the arid region of Africa but much of its value is lost to foreign industries in the international market.

- Sudan has consistently accounted for over 50% of total global exports.
- Gum Arabic buyers are manufacturers, processors and International traders dominated by companies in Europe, India and the US.
- Final processing is done at the consuming industry level.

Foreign manufacturers and processors generate the highest margins along the global Gum Arabic export value-chain



Share of Earnings of Each Value-Chain Actor	
Value-Chain Actor	Average Revenues/ Metric Tonne
Farmer/Producer	\$690
Village Trader	\$960
Roaming Merchant	\$1,240
City/Locality Trader	\$1,925
Exporter	\$3,000
Local Processor	\$4,000
International Processor	\$10,800

# Gum Arabic buyers include international manufacturers, processors and retailers.



## Top Importing Companies

### Manufacturers

- Nexira, USA
- Coca-Cola
- PAT Products Inc, USA
- Nutrigaard LLC, USA

### Processors

- Alland & Roberts, France
- Willy-Benecke, Germany
- Agrigum Int'l, United Kingdom
- Morouj Commodities Ltd, UK

### Traders

- Neupert Ingredients, Germany
- Gutkind, UK

## Top Exporting Companies

### Manufacturers

- Coca-Cola Midi SAS, France
- JSC Lamzur, Russia
- Pepsi Cola Int'l Cork, Ireland

### Processors

- Nexira, France
- Esseco SRL, Italy
- Aromi Mediterrane, Italy

### Traders

- FC Logistique SAS
- AfShinghal Trading, India
- Afritec, Sudan

# Imperatives for a Competitive Gum Arabic Producer

## 01

### Quality Control

The price of Gum Arabic varies by grade. The better the quality the better the price. Grade 1 is the premium grade. Quality control is mandatory at each stage of the value-chain.

- Harvesting
- Sorting
- Storage

## 02

### Processing Capacity

The increase in the number of processing facilities in the Sudan has boosted competition for crude gum, which has translated into higher prices paid to local traders and producers. France has competitive advantage because of its processing capability and capacity.

## 03

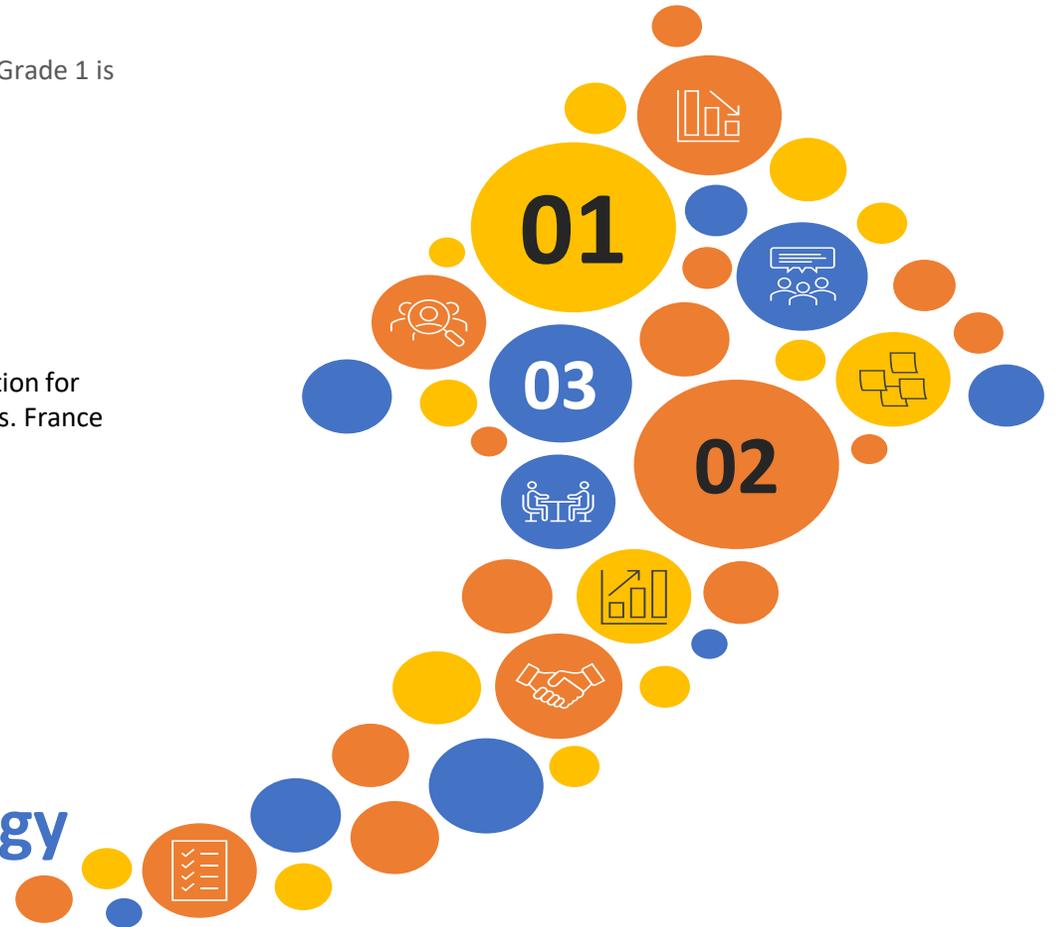
### Quantity Produced:

Dominance of Acacia Senegal seedlings for planting  
Effective silvicultural practices improving yields

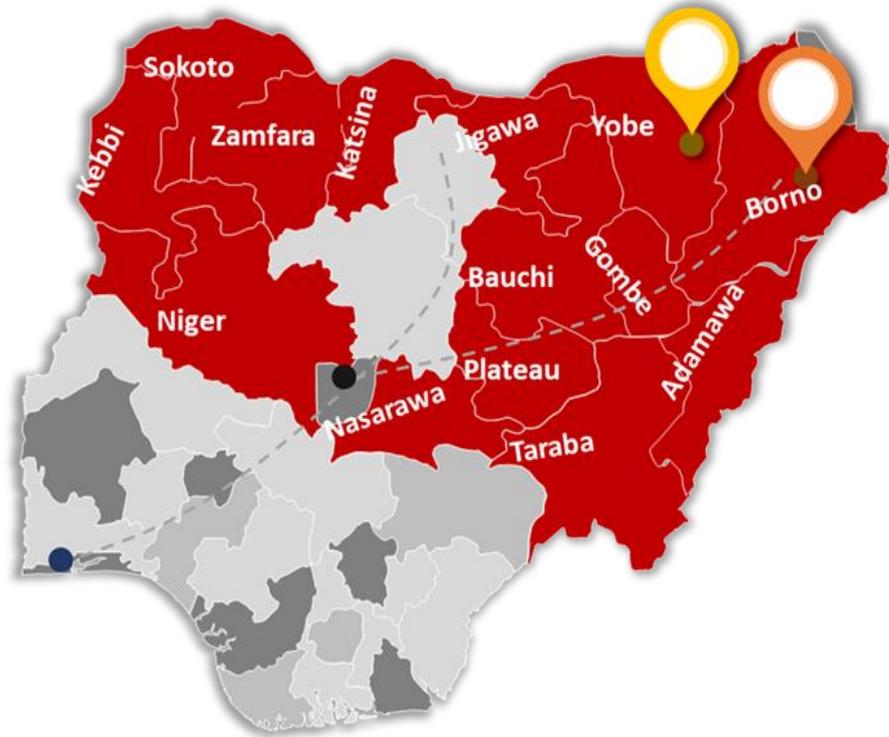
## 04

### A Buyer-Driven Marketing Strategy

- Traceability
- Reference quality standard which guides laboratory testing for moisture,
- Standard quality reference
- Packaging and identity
- Labelling
- Testing

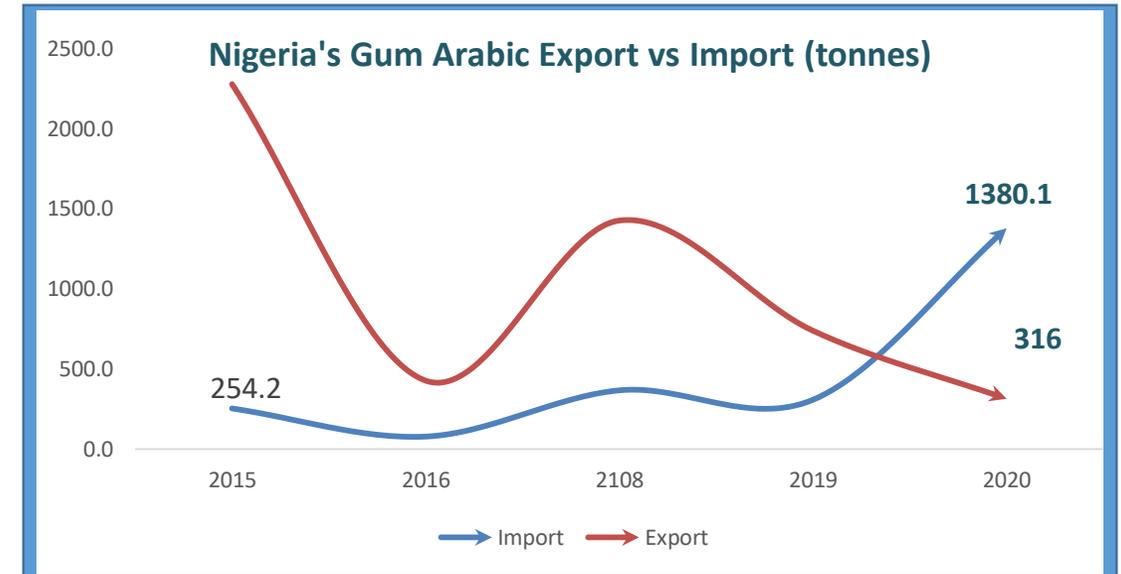
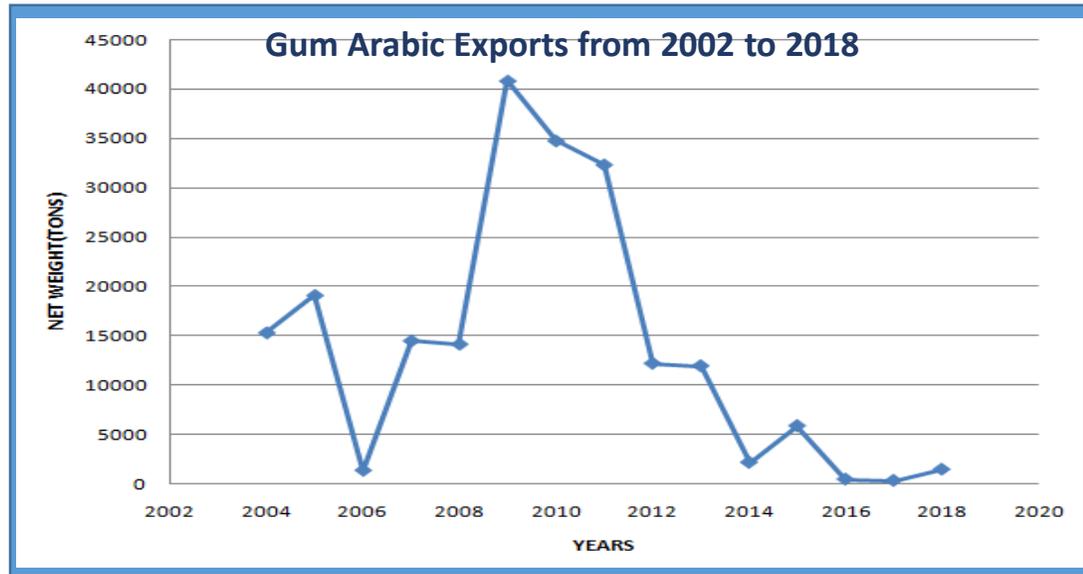


# Nigeria's gum production and exports have slumped to about 1% of its potential gum yield.



- **Nigeria exports 95% of the Gum Arabic it produces.**
- **The country has a total of 2.4 million hectares of acacia plantations and natural stands, across 11 states, with combined potential gum yield of 490,625 tonnes at a conservative estimate value of \$800 million.**
- In 2020, Nigeria recorded 316 tonnes of exports and earned about \$382,000, which signified a further drop from 739 tonnes and \$649,000 in 2019.
- For an unbroken period of 60 years up to 2013, Nigeria remained the second world largest producer and exporter of Gum Arabic after Sudan. Output from Nigeria now trails Sudan, Chad, Senegal and Mali.
- In the 10-year period before 2013, Nigeria recorded an average annual production of 19,637 metric tons and earned an average \$94.2 million annually.
- According to statistics obtained from NAGAPPEN (National Association of Gum Arabic Producers, Processors and Exporters of Nigeria), Nigeria's export earnings from Gum Arabic peaked at \$232million in 2010.
- Borno, Yobe and Jigawa states account for 70% of annual production. However, high insecurity levels from Boko Haram insurgency and herdsmen attacks, combined with the high cost of fencing plantations, have led to the invasion, and in some cases, abandonment of plantations in these states. These developments have dimly affected production in these areas.

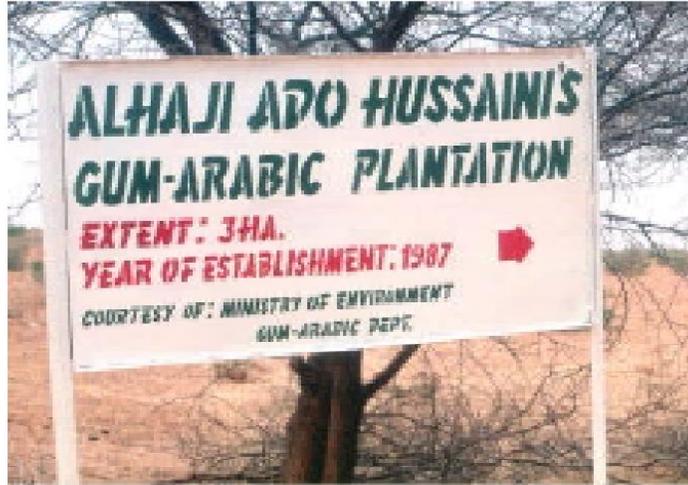
# Nigeria's rising (refined) Gum Arabic imports increased by 347% in 2020 as exports dropped further by 57%.



- From 2014, Nigeria's production slumped to an average of 2,028 ton per annum; which is a little over 10% of the production average during the 10 year period between 2004 to 2013
- Consequently, Nigeria lost her 2<sup>nd</sup> position and now occupies the 5<sup>th</sup> position: trailing behind Sudan, Chad, Senegal and Mali with relatively little contribution to the international market.

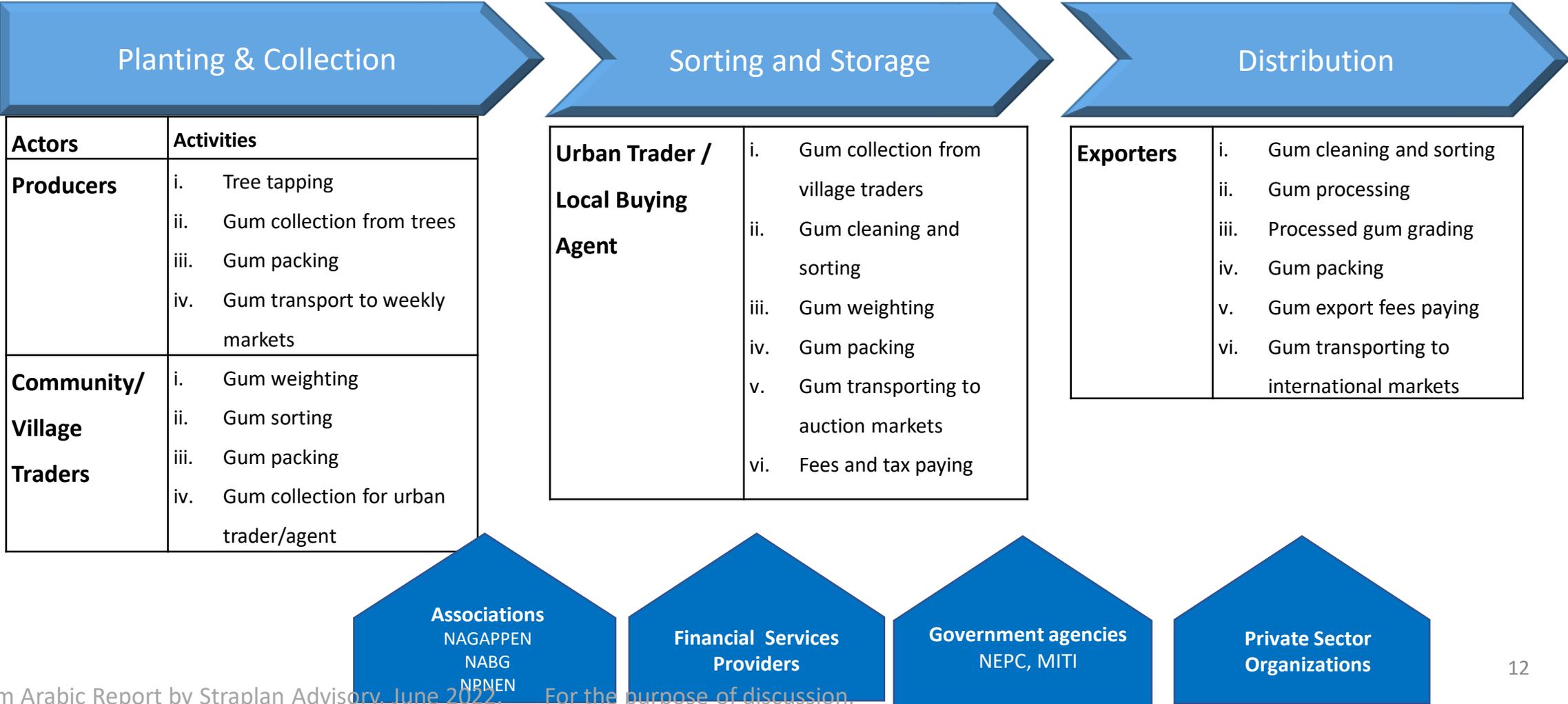
- **Nigeria's import of refined Gum Arabic has continued to increase over the last five years. In 2020, Nigeria imported 1,380 tonnes of Gum Arabic which is a significant increase from 308 metric tonnes imported in 2019.**
- There is a plan orchestrated by the NAGAPPEN to potentially regenerate Nigeria's Gum Arabic production levels to 52,600 metric tonnes annually or \$130 million over the next decade.

# Organizing the Nigerian Gum Arabic Value Chain for Competitiveness



# 90% of the farmers are men while women and youths constitute about 80% of participants involved in sorting and intermediate trade in the Gum Arabic Value Chain

Nomads and Herdsmen are also heavily involved in the harvesting and primary trade in Gum Arabic



# Issues: Insecurity and lack of a Reference Quality System pose key challenges to improving productivity and competitiveness.



High cost of entry for largescale farming

Poor collection processes

Planting & Collection

Poor sorting methods

DANSA is the only processor

Sorting and Storage

High cost of logistics

Port delays and congestion

Cumbersome documentation

Distribution

- **Persistent insecurity** constrains collection and production. There is heavy insecurity in the three key states of production in Nigeria.
- **Fragmented players & few plantations:** The farming segment is dominated by small holder farmers scattered across the states.
- Cultivated land is about 1% of about 2.5 million Ha of Gum Arabic land cover.
- Collection is mainly from wild trees and forests.
- **Capacity utilization is weak.** The land coverage has the capacity to yield over 50,000 tons per annum for a productivity of about 0.2 tons per hectare, but current production is less than 1000 tons for a productivity of 0.009 tons per hectare.
- **Poor silvicultural practices:** Tracing high-quality Gum Arabic starts from cultivating the tree.
- **Product quality** is compromised by inadequate quality control, while pests and diseases and activities of herders limit productivity.
- Relatively fewer Acacia Senegal trees.

- **Poor/inadequate sorting practices affect Nigeria's grade standards and pricing:** Nigeria's share of the Grade 1 Gum Arabic market is relatively poor compared to output from Sudan.
- Women groups have little compensation despite their strategic role in the value chain.
- **Inadequate quality control** from farming to collection, drying, sorting, storing, labelling and packaging, and transportation.
- **Processing is capital intensive.** DANSA Foods Processing Company (DFPC) is the only processing company.
- **Poor storage** methods and insufficient warehouses.

- **Lack of dedicated laboratories** to test products moisture content, solubility and optical rotation.
- **Poor labelling and packaging.** Poor traceability
- **Poor marketing.**
- **Other cross cutting issues** like logistic delays, ports congestion, high transportation costs, and cumbersome documentation.
- **The high cost of exportation** particularly for states without seaports is a major challenge in the exportation of gum Arabic.

# Solutions: More processing firms and quality control are critical to organizing the value-chain for productivity & competitiveness



- To be competitive, Nigeria must build a reputation as a reliable source of grade 1.
- Producers at all stages must be aware of export quality or demand requirement.

### Key Enabling Actors:

- Seed producers
- Farmers /Plantation Owners
- Quality control mechanism/reference.

### Key clusters

\*Farmer/(women) Women Groups

### Competitiveness

- Diversify production bases away from Borno, Jigawa and Yobe to other states.
- Upscale planting of seeds. Roll out more Acacia Senegal seedlings for farmers across the producing states.
- Capacity building on best practices for farmers

### Key Enabling Actors:

- Sorters
- Traders
- Quality control mechanism / reference

### Key cluster

- Women Groups
- LBAs

### Competitiveness

- The women group must be compensated and empowered, given their strategic role.
- More processing firms – partnership on backward integration with importers and foreign manufacturing companies. .

### Key Enabling Actors:

- Traders
- Transporters
- Exporters
- Laboratories
- Importing firms/BA/

### Main Cluster

Exporters

### Competitiveness

- Establish and communicate standards:
- Laboratories
- Packaging and labelling
- Inter-party actors
- Warehousing

# In spite of the challenges, the Gum Arabic market in Nigeria is still profitable and there exists several investment opportunities

A recent survey of 220 producers of Gum Arabic (predominantly farmers and traders) in Yobe state revealed that Gum Arabic remains profitable. On the average, each respondent recorded a profit of US\$1,572.49 and a gross margin/ha/year of \$805.86.

Variable	Value \$
Total hectares	848
Quantity of gum Arabic produced and sold	685.41 tonnes
Fixed cost	337,417.20
Total variable cost	502,830.31
Total cost	840,247.51
Total revenue	1,186,196.39
Gross margin	683,366.08
Gross margin/ha/year	805.86
Net profit	345,948.88
Net profit/farmer	1,572.49

**The existing gaps along the Gum Arabic value chain provide substantial investment opportunities with potentially large returns. From cultivation to harvesting, processing, trade and distribution to retailers and manufacturers.**

**More so, there are opportunities for financial institutions that can support the continued improvement in building a productive efficient and traceable value-chain.**

- Financial institutions should focus on playing the role of facilitation of cross-border transactions by deploying efficient systems that allow for seamless payments and verification systems.
- It is recommended that a buyer-driven value-chain financing model should guide the approach of Nigeria-based financial institutions along side other stakeholders towards organizing the gum market.
- We recommend pitches to foreign manufacturers and processors to invest in or partner Nigerian exporters and traders in a form of backward integration arrangement by setting up processing firms in Nigeria to ease their growing capacity utilization and for enhanced traceability and productivity of Nigeria's gum output. An example is the partnership between NEXIRA and Afritec Sudan.
- The facilitation of an exchange or clearing system for futures contracts would go a long way in bringing liquidity and major players into the Nigerian gum market.
- The facilitation of investments into critical export infrastructure such as plantations, laboratories and warehouses can be organized in conjunction with the government over a long-term contractual agreements.
- Organizing interparty associations along the value chain has proven to be effective for coordination and effective communication along the value-chain. Organizations like NPEN and NAGAPPEN must be recognized and encouraged to rally together the various gum Arabic actors in the value chain towards data.

Building an ecosystem of financial infrastructure would help in organizing a thriving Gum Arabic market and fulfilling requirements for capacity building, financing, policy, infrastructure, and inclusiveness.



## Exchange

- Commodity trading
- Products on Farmer's Yields
- Settlements and clearing
- Insurance and guaranty
- Derivative contracts



## Cross-Border Trade and Exports Platforms

- Derivative Products on Guarantees
- Factoring
- Digital tokens – clearing and settlement



## Rural / Informal Trade

- Entrepreneurship and innovation
- Education platforms
- Clearing and Settlement
- Smallholder farmers

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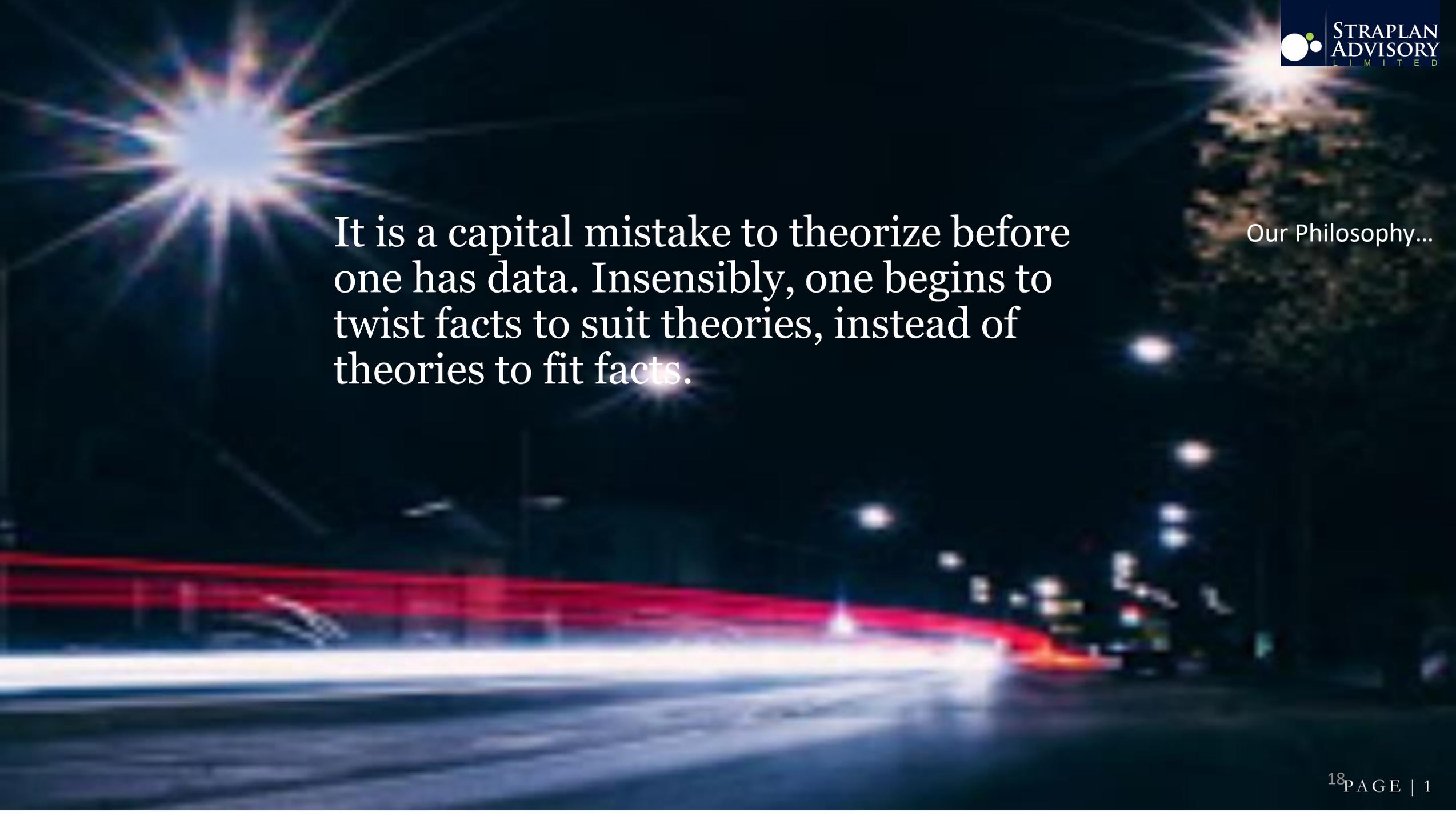
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*Straplan Advisory June 2022*

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A nighttime photograph of a city street with light trails from cars. A large, bright starburst light is in the upper left. The street is dark, with a red light trail on the left and a white light trail in the center. The background shows blurred city lights.

It is a capital mistake to theorize before one has data. Insensibly, one begins to twist facts to suit theories, instead of theories to fit facts.

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