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# Africa RISE

## Botswana Pharmaceutical Sector Study

“Reform for Investment and Sustainable Economies”

A programme of technical assistance for Eastern Africa, Southern Africa and the Indian Ocean

## Market Assessment Report

- **To identify key pharmaceutical market attributes**, including size, structure, growth potential, and trends
- **To identify local pharmaceutical needs**, industry capacity, challenges
- **To identify investment opportunities** based on market data

## Sector Study Report

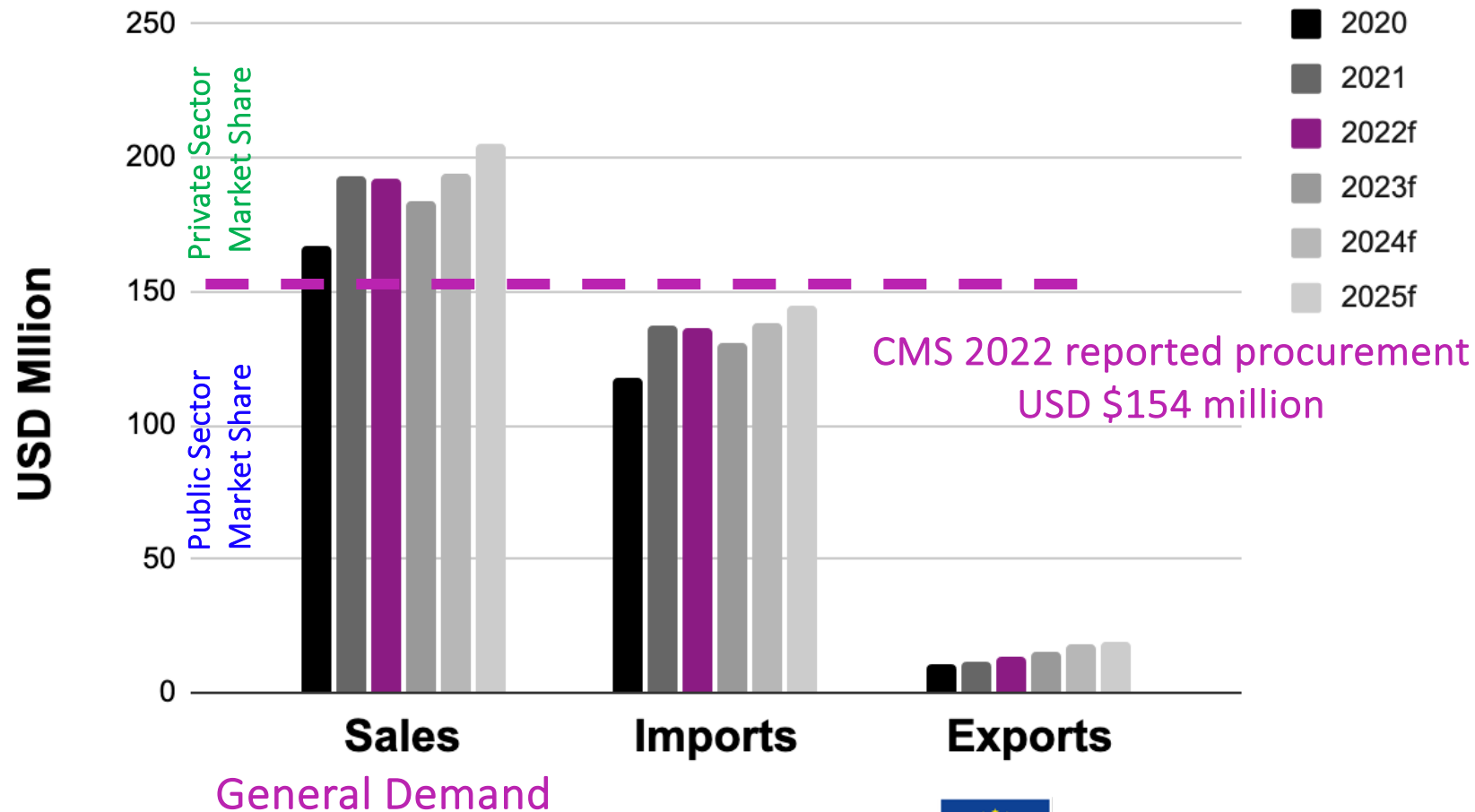
- **To identify gaps** in the Pharmaceutical regulation, industrial policy, manufacturing management, skills gap, manufacturing capacity challenges
- **To map Botswana's** pharmaceutical ecosystem
- **To suggest a model** and way forward for the pharmaceutical sector of Botswana
- **To identify investment opportunities**



# Pharmaceutical market assessment

# Size of Botswana's Pharmaceutical Market

## Botswana Pharmaceutical Trade Forecast (USD million)



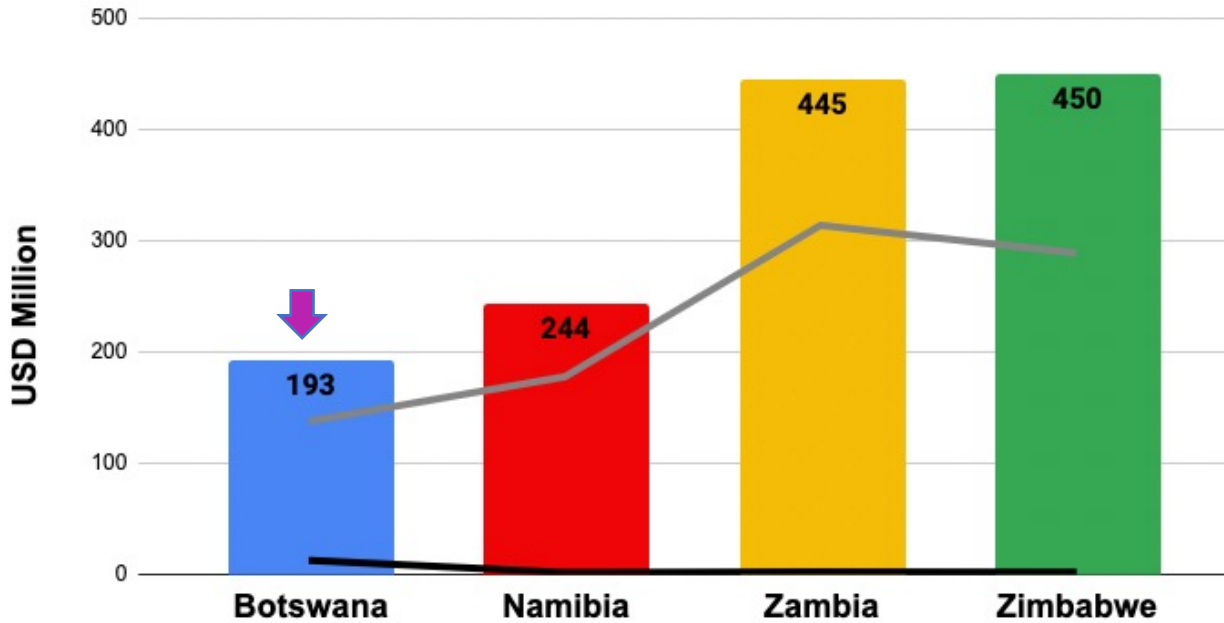
According to Fitch Solutions Report:

- Estimated size in 2022: **USD \$193 million.**
- Estimated Forecast 2025: **USD \$205 million.**

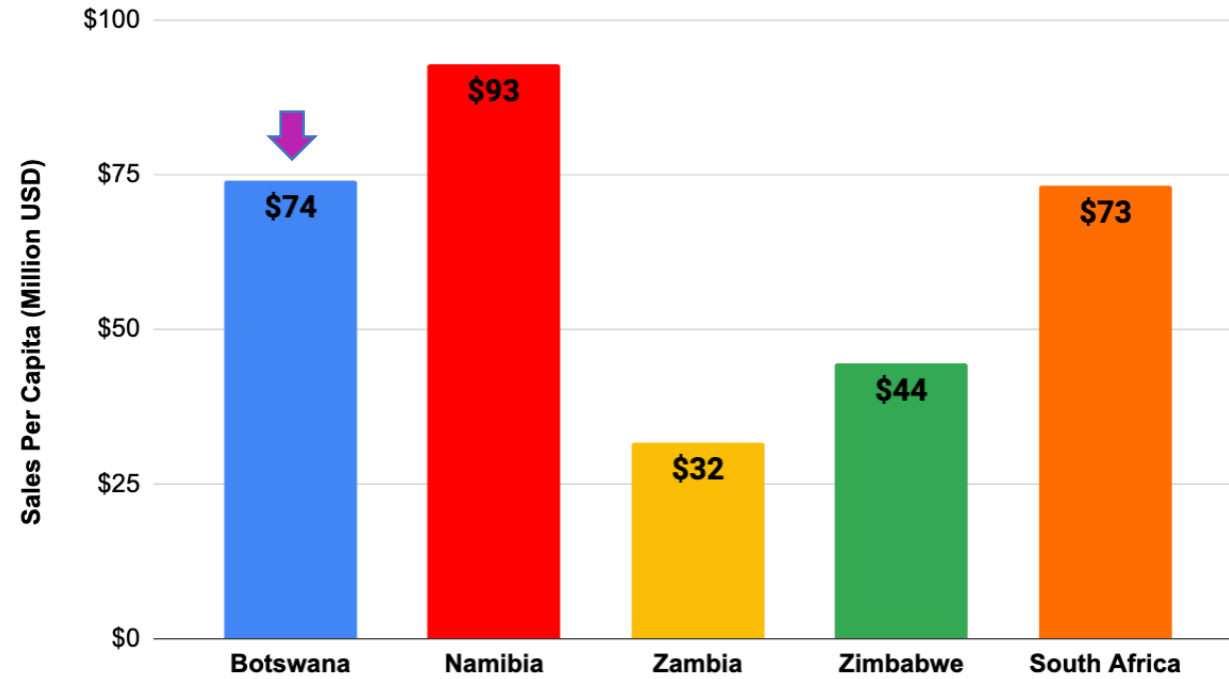


# ZAZIBONA\* Regional Size of Pharmaceutical Market

ZAZIBONA Pharmaceutical Trade 2021



Pharmaceutical Sales Per Capita (Million USD) vs Country



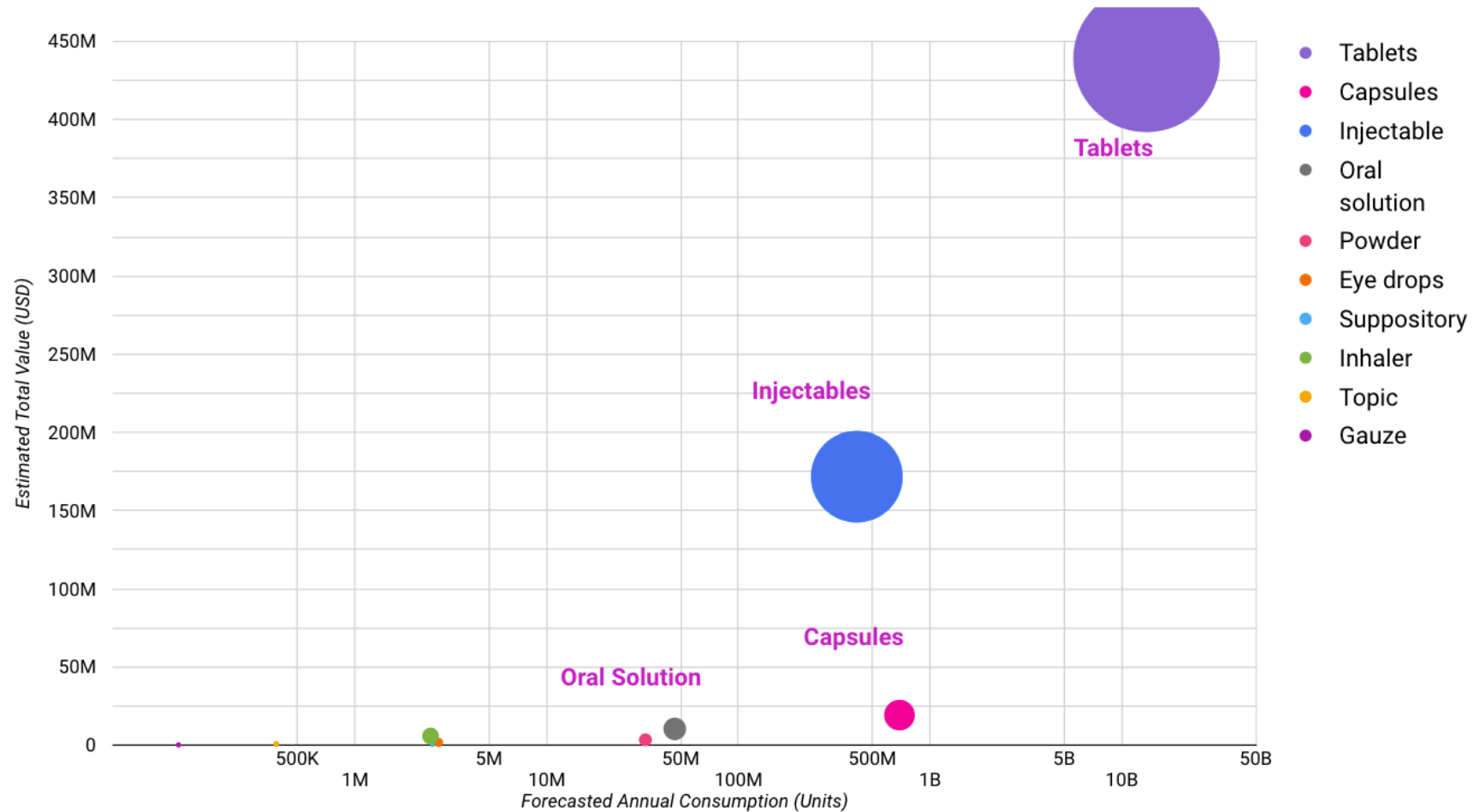
According to Fitch Solutions Report:

- Estimated size in 2022: **USD \$1.3 Billion.**
- **\*ZAZIBONA:** Botswana, Namibia, Zambia, Zimbabwe

- Botswana has the second pharmaceutical sales per capita of the region.

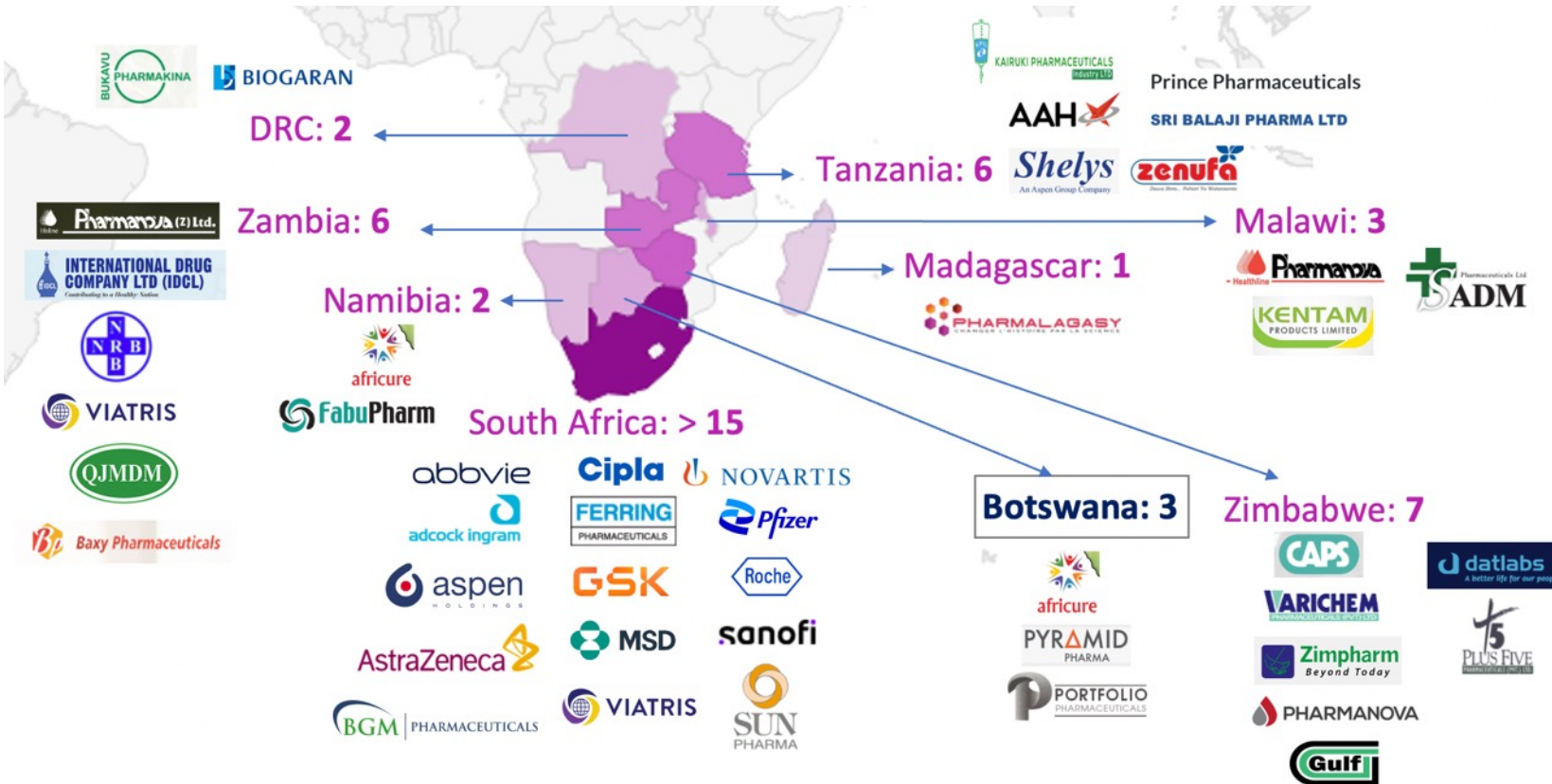


# Conventional Medicines: 3 countries: Dosage Forms



# Pharmaceutical manufacturers in SADC Region

**Botswana is not the only country in the Sub-Saharan region trying to develop a pharmaceutical industry**



## Recommendations:

- Market Segmentation
- Promotion of collaboration among manufactures

## Requirements:

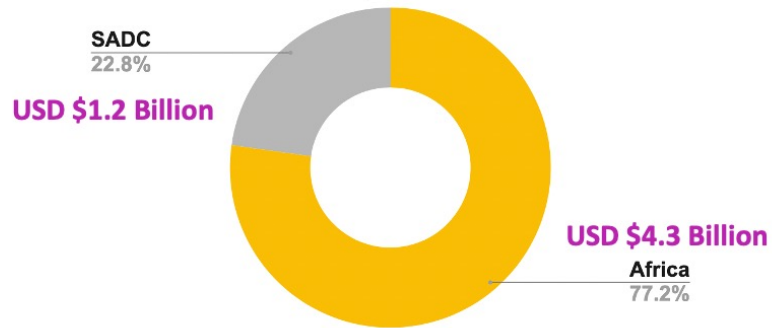
- BoMRA-- WHO ML3



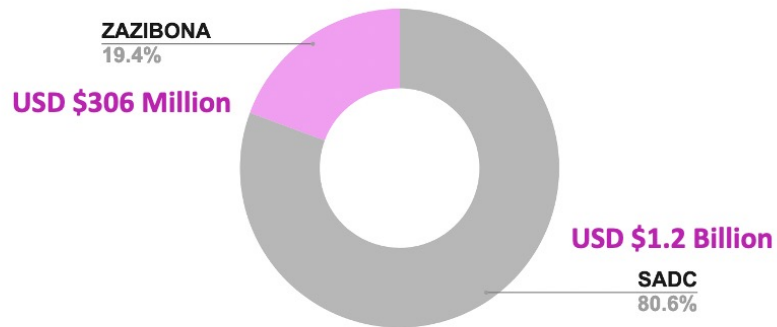
# Biopharmaceutical Products: Vaccines

## Vaccines Market Size

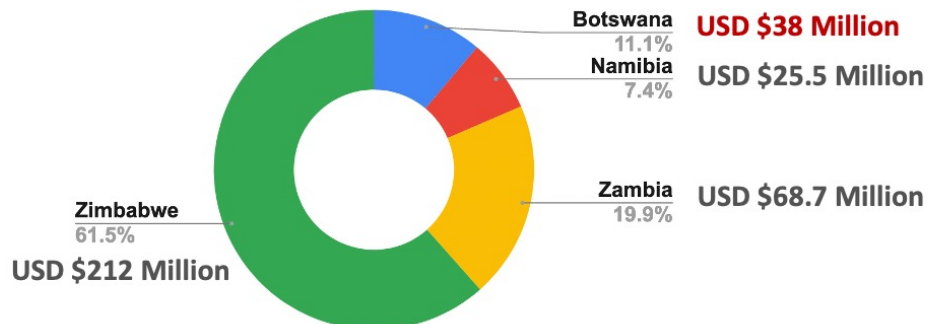
Total Vaccine Imports: Africa vs SADC




Total Vaccine Imports: SADC vs ZAZIBONA



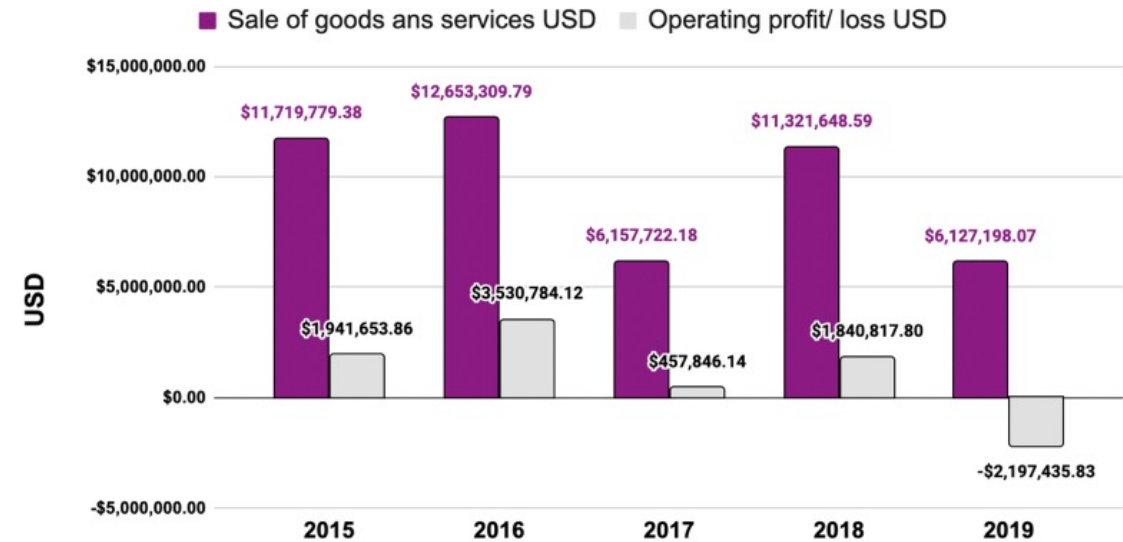
Total Vaccine Imports: ZAZIBONA vs Botswana



## Botswana Vaccine Institute (BVI)

- Manufactures 6 types of veterinary vaccines
- Exports up to 30 different countries.
- Only pharmaceutical manufacturer in Botswana that follows the complete value chain.  **Botswana Differentiator**

BVI Sales of Goods and Services vs Operating Profit Loss in USD 2015-2019

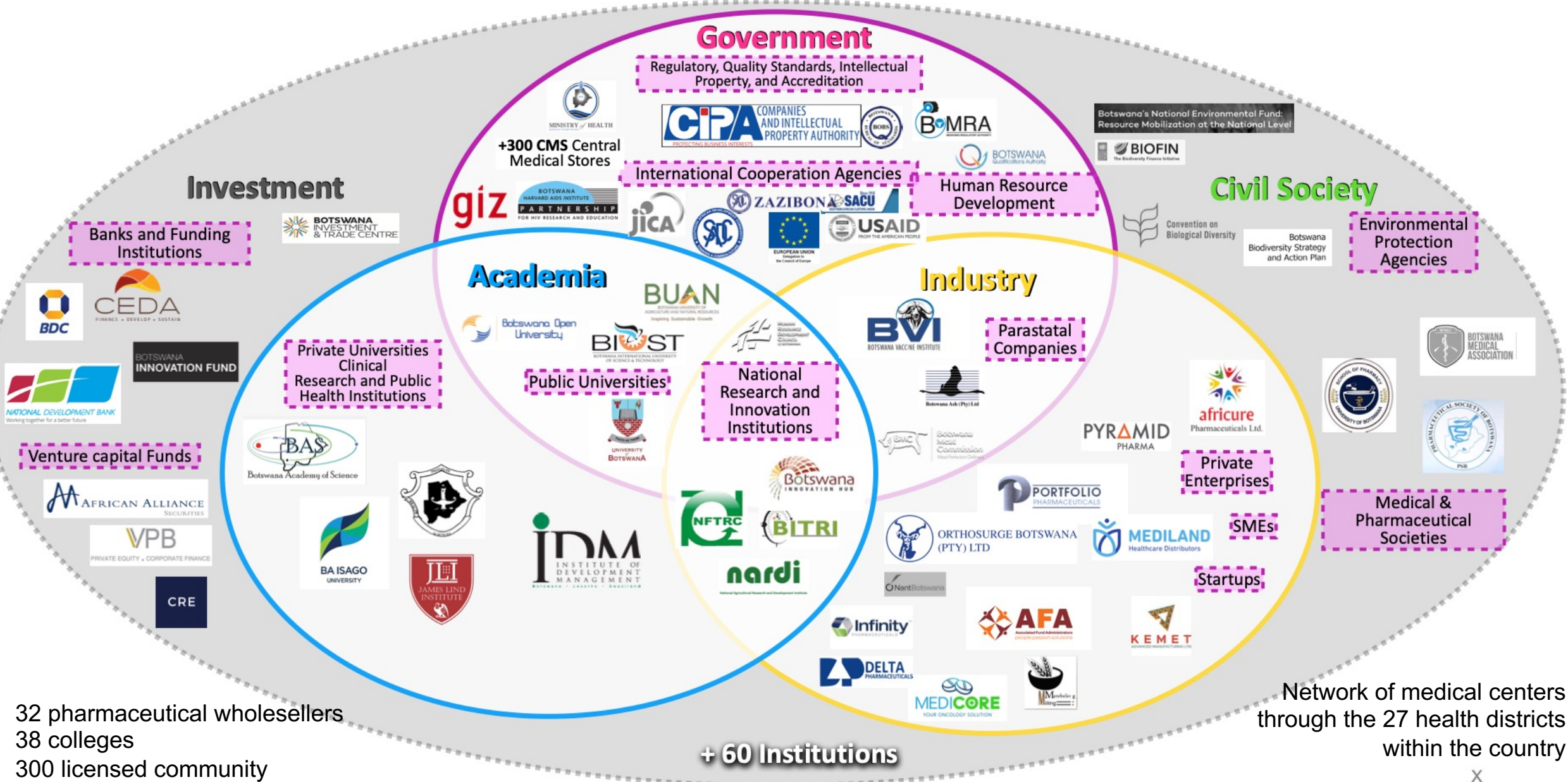


Requires investment to broaden their veterinary vaccines portfolio and start developing vaccines for human use.



**Ecosystem**

# Botswana's Pharmaceutical Sector and Innovation Ecosystem



# **A model for Botswana's Pharmaceutical Sector**

# Botswana's Pharmaceutical Sector

1

## Mission

To develop the pharmaceutical sector of Botswana and diversify its national economy through facilitating access to medicines, creating higher value products and services through supporting local manufacturing, traditional medicine, and innovation ecosystem and creating a safe and enabling framework for investors

## Vision

To manufacture, innovate and improve access to medicines to become a modern and competitive Pharmaceutical sector for Botswana and a key regional hub for the sub-Saharan Africa

2

## Strategic Sub-sectors

### Conventional Medicines

- Packaging, repackaging, generics



### Biopharmaceutical Products

- Vaccines for veterinary and human use



### Raw Materials

- Raw Plant Materials: Medicinal Plants
- Raw Materials from Bovine Origin: Pharmaceutical and Food grade ingredients
- Raw materials from mining industry: Pharmaceutical grade salts, IV Fluids



### Herbal Medicine

- Value added extracts, Herbal Medicaments



### Services

- Regulatory and Certification



3

## Enablers

### Policy

Incentives, Trade policy, National Health and Drug Policy, Intellectual Property protection policies

### Regulatory

National, International, Certifications, Quality, Processes, etc.

### Management

Governance, Harmonization, and Institutional Structure

### Capacity

Local Human Resources, Diaspora and Manufacturing Capacity

### Investment

Private, Public, International

4

**Investment opportunities to  
detonate the development of 5  
strategic subsectors**

# 1. Conventional medicines

- The development of the conventional medicines industry in Botswana presents an opportunity for specific product categories as **antiretrovirals**, **analgesics**, **cardiovascular medicines**, and **anti-infectives**.
- There is a demand forecast of over 13 billion units of tablets with an estimated value of over USD \$400 million for Botswana, Zimbabwe and Zambia.



## 2. Biopharmaceutical Products



- The expansion of veterinary vaccine production and the manufacturing of human vaccines presents a significant opportunity in Botswana's biopharmaceutical industry.
- BVI is currently producing six different vaccines and exports for a value of around USD \$7.5 million.



### 3. Raw materials

- Unlike pharmaceutical manufacturers, no manufacturer of pharmaceutical grade raw material currently exists in Botswana.
- Based on the pharmaceutical ecosystem of Botswana researched so far, there could be potential for initiating an industry in the medium- or long-term in Botswana considering synergies with the existing industry in the country.



**Raw materials from bovine origin**



**Raw plant materials**



**Raw materials from mining industry**





## 4. Herbal medicine

- In Botswana 47 plant species belonging to 45 genera and 29 families are used to treat various diseases and health conditions.
- Despite its accessibility, affordability, and effectiveness, there is a lack of investment and limited scientific research in this field in Africa



## 5. Services

- Services in regulatory, certifications and training play a crucial role in ensuring the effective and efficient functioning of the healthcare system.
- Botswana, represented by BoMRA, has the potential to become a regulatory Center of Excellence, complementing existing Centers of Regulatory Excellence (RCOREs) .



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# **Key Players pillars of the development of Botswana's pharmaceutical industry**

# Key players



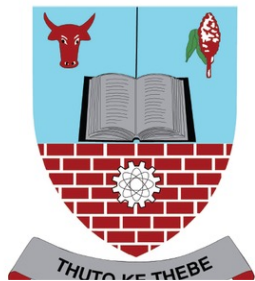
Parastatal  
companies

p.e., BVI, BotAsh, NARDI, BoMRA, BMC, etc.

Private  
companies



SMEs, startups, enterprises  
p.e., Portfolio Pharmaceuticals, Pyramid Pharma, Africure, etc.



Academy and  
R&D institutions

Universities (p.e. University of Botswana), R&D centres, etc.



# 1/3: Botswana can leverage the capacity and regional impact of its **parastatal companies** to develop the pharmaceutical sector



National Agricultural Research and Development Institute



Botswana  
Meat  
Commission  
eat Perfection Defined



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Vaccines for human & veterinary use



Pharmaceutical grade Raw materials & excipients from bovine origin



Botswana Meat Commission  
eat Perfection Defined

## Pharmaceutical grade added-value & Regional market development



Pharmaceutical grade raw materials from mining industry



Regional Certification & Training Services

## 2/3: Botswana can leverage its SMEs, private enterprises & startups (private sector)



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# 3/3: Elevating Innovation, the sector of the Academy and R&D institutions



**Investing in the translation of R&D into product and services that impact the local and regional pharmaceutical industry**

Translate research projects into patents, products & services, and companies





**Center of Excellence for Human and Veterinary Vaccines**



**Center of Excellence for Herbal Medicine**



**Creation of Centres of Excellence for Regional Cooperation and Development of Botswana's Pharmaceutical Sector**



**Center of Excellence for Regulatory Affairs & Clinical Research**



# **Short-term, mid-term and long-term investment opportunities**

# Short, mid and long term actions

No	Key Pillar	Potential Investment Target	Action
<b>1</b>	<b>Biopharmaceutical Products</b>	<b>Botswana Vaccine Institute</b>	
Short-Term			Diversify product portfolio of veterinary vaccines.
Short-Term			Complete product portfolio selection of human vaccines.
Short-Term			Expand facilities to be able to manufacture human vaccines
Short-Term			Partner with other companies and research institutions
Medium-Term			Finish expansion of facilities for human vaccines.
Medium-Term			Get GMP certification of new facilities.
Medium-Term			Launch new veterinary vaccine.
Medium-Term			Start development of first project of human vaccines.
Long-Term			Complete clinical trials of the first human vaccine project
Long-Term			Hold GMP certification of manufacturing facility.
Long-Term			Target exporting to African market in general.
Long-Term			Launch first project of human vaccine.
<b>2A</b>	<b>Raw materials, excipients, salts</b>	<b>Botash</b>	
Short-Term			Undertake a detailed feasibility study of the development pharmaceutical salts industry in Botswana
Medium-Term			Implementation of the manufacturing plan with the infrastructurer, production lines and processes, trial runs
Long-Term			Start production of the different qualities of a range of salts.



# Short, mid and long term actions

No	Key Pillar	Potential Investment Target	Action
<b>2B</b>	<b>Medicinal plants</b>	<b>Medicinal plants producers</b>	
Short-Term			Undertake a detailed feasibility study of development pharmaceutical herbal medicines industry in Botswana
Short-Term			Improving labeling, certifications, and overall product quality to meet the demands of local consumers.
Medium-Term			Looking for partnerships in R&D and development
Medium-Term			Emphasize value-added aspects such as essential oils to gain a competitive edge in the industry.
Long-Term			Develop high-quality herbal medicines, nutraceuticals, and processed dietary supplements to meet elevated standards in quality and processing techniques.
<b>2C</b>	<b>Raw materials, excipients</b>	<b>From bovine origin</b>	
Medium Term			Undertake a detailed feasibility study of development bovine spin offs for the pharma industry in Botswana
<b>3</b>	<b>Conventional Medicines</b>	<b>Repackaging Companies</b>	
Short-Term			Promote companies' collaboration
Short-Term			Focus on Tablets
Short-Term			Diversify product portfolio.
Short-Term			Expand facilities to be able to do primary manufacturing, including in-house quality control laboratory
Medium-Term			Finish expansion of facilities
Medium-Term			Get GMP certification of new facilities
Medium-Term			Start primary manufacturing through backward integration
Medium-Term			Target local market first.
Long-Term			Target exporting to regional market.
Long-Term			Hold GMP certification of manufacturing facility.
Long-Term			Try holding product marketing registration without partnerships.



# **Challenges and opportunities to develop Botswana's pharmaceutical Sector**

# 7 challenges that restrict the development of the pharmaceutical sector in Botswana



1. Small local market & relying on imports mostly
2. Need of further commitment with investors and limited access to capital
3. Lack of specialized pharmaceutical manufacturing policies and incentives
4. Need of short programs to up-skill or re-skill Botswana's human capital
5. BoMRA has not yet achieved the WHO ML 3 status
6. Brain drain, lack of engagement with diaspora
7. Lack of transparency regarding data access for pricing, supply and demand of medicaments



# 7 strenghts that enable the development of the pharmaceutical sector in Botswana

1. Accommodating tax policies: 15% tax for various players, 5-10 years tax holiday (0%) in some cases.
2. Freedom of capital movement and double taxation treaties with various major countries.
3. Promotion of procurement of local manufactured products
4. Special economic zone with adequate transport infrastructure.
5. BITC promotes and assists investment.
6. Large pool of public and private institutions to tap into.
7. Good quality of the regulatory body (BOMRA)



## 8 actions to unlock the pharmaceutical sector in Botswana

1. Promote Transparency in supply, pricing, and demand data.
2. A one-stop shop entity to develop or address the specific needs of the industry.
3. Developing specialized policies and manufacturing for the pharmaceutical sector.
4. Monitoring, implementing, and driving the development of strategic industry subsectors.
5. Having a national strategy for the pharmaceutical sector and its subsectors for the next 5-8 years
6. Formal engagement with local, regional and international investors
7. Envisioning the sector as essential for Botswana's economy and diversification.
8. To establish GMP and quality standards for Botswana's pharmaceutical industry





# In order for Botswana to establish itself in the pharmaceutical industry:



1. To specialize in sophisticated niche sectors
2. To boost local public, private sector partnerships, but also partnerships with global industry leaders to develop more sophisticated technologies or products
3. To start with a focus on human and veterinary vaccines
4. To work towards building a more diversified economy through developing the pharmaceutical sector as a major pillar for the economy
5. To prioritize a sustainable access to medicines through public health and economic benefits
6. A National Strategy to Develop Botswana's Pharmaceutical Sector



# Big Thank you from our Africa Rise Team



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