



# Enhancing the sustainability of investment for vaccine manufacturing in Africa

## Session 2

# Perspectives from the African vaccine industry

27 June 2023  
Patrick Tippoo

Advance the establishment of sustainable human vaccine manufacturing capacity in Africa



MISSION

# 2015 VMMPA Study Conclusion



## VMMPA STUDY

### VACCINE MANUFACTURING AND PROCUREMENT IN AFRICA

An analytical assessment of vaccine manufacturing capacity and government mechanisms for establishing sustainable vaccine manufacturing capacity in Africa

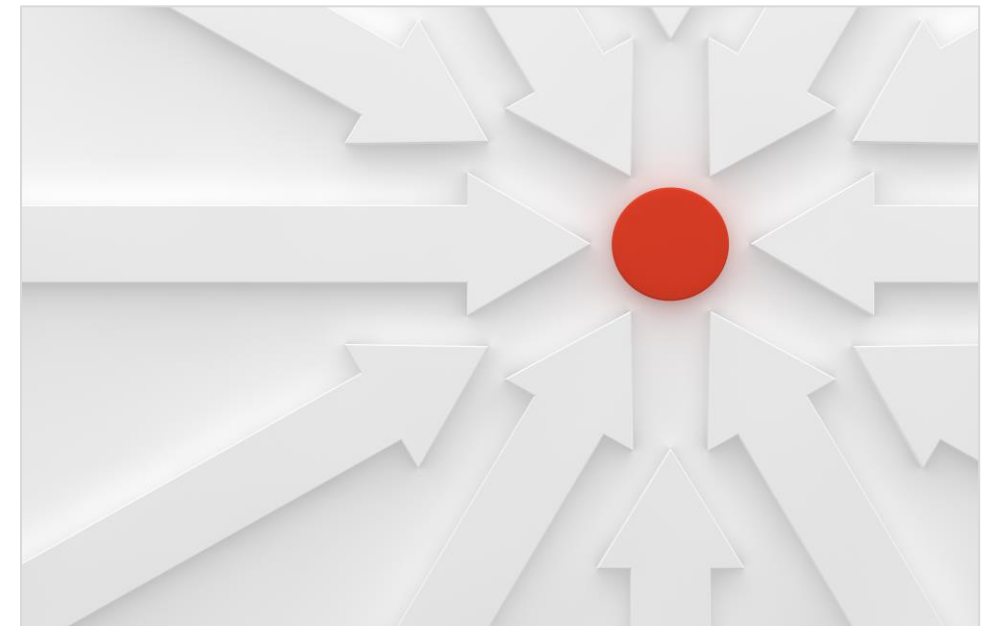


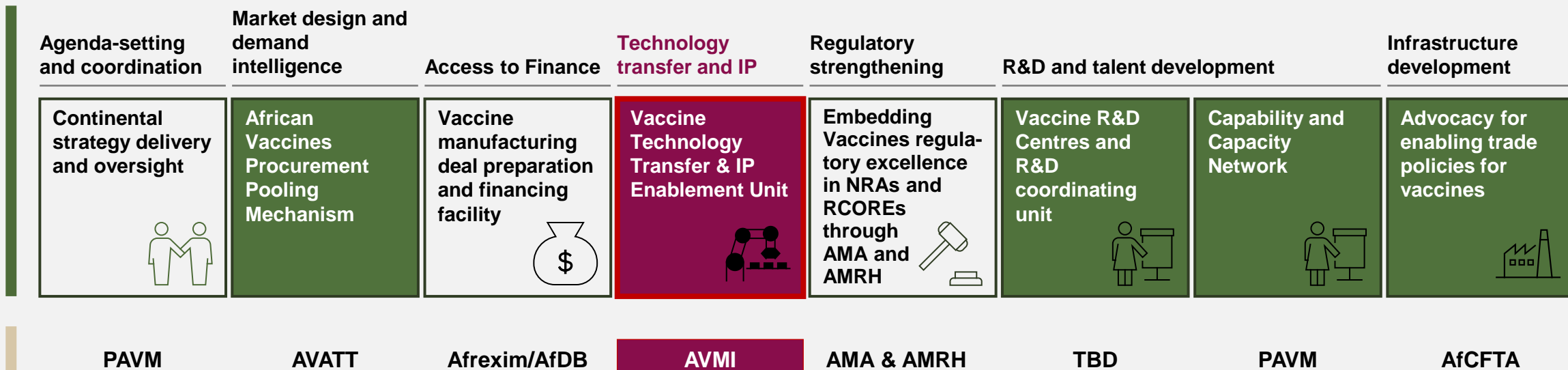
- Space for **multiple major players** in the vaccine production field in Africa
- A number of **hubs** could be established.
- Requires the right level of **political** and **technical** support
  - ... to develop the necessary **ecosystem** to establish a viable, competitive and sustainable vaccine manufacturing capability.
- **Long-term vision** - tied to national (health) security and regional health security.

# African Vaccine Manufacturing Industry Forum

No.	Organisation	Country
1	Biogeneric Pharma	Egypt
2	Biovac Egypt	Egypt
3	Polygon Pharma/ Biovac Egypt for Vaccines and Serums	Egypt
4	EVA Pharma	Egypt
5	Gennecs	Egypt
6	MEVAC / Vaccine and Biotechnology City (VBC)	Egypt
7	Minapharm Pharmaceuticals	Egypt
8	VACSERA	Egypt
9	Armauer Hansen Research Institute (AHRI/MoH)	Ethiopia
10	African CDC	Ethiopia
11	Atlantic Life Sciences	Ghana
12	DEK Vaccines	Ghana
13	Biovax Kenya	Kenya
14	Institute Pasteur Morocco	Morocco
15	Samsung Biologics for Institute Pasteur Morocco	Morocco
16	Innovative Biotech, Nigeria	Nigeria
17	Biovaccines Nigeria	Nigeria
18	Institute Pasteur Dakar	Senegal
19	Afrigen	South Africa
20	Aspen	South Africa
21	Biovac	South Africa

**AVMI - key point of contact for multilateral engagement with vaccine manufacturers in Africa.**



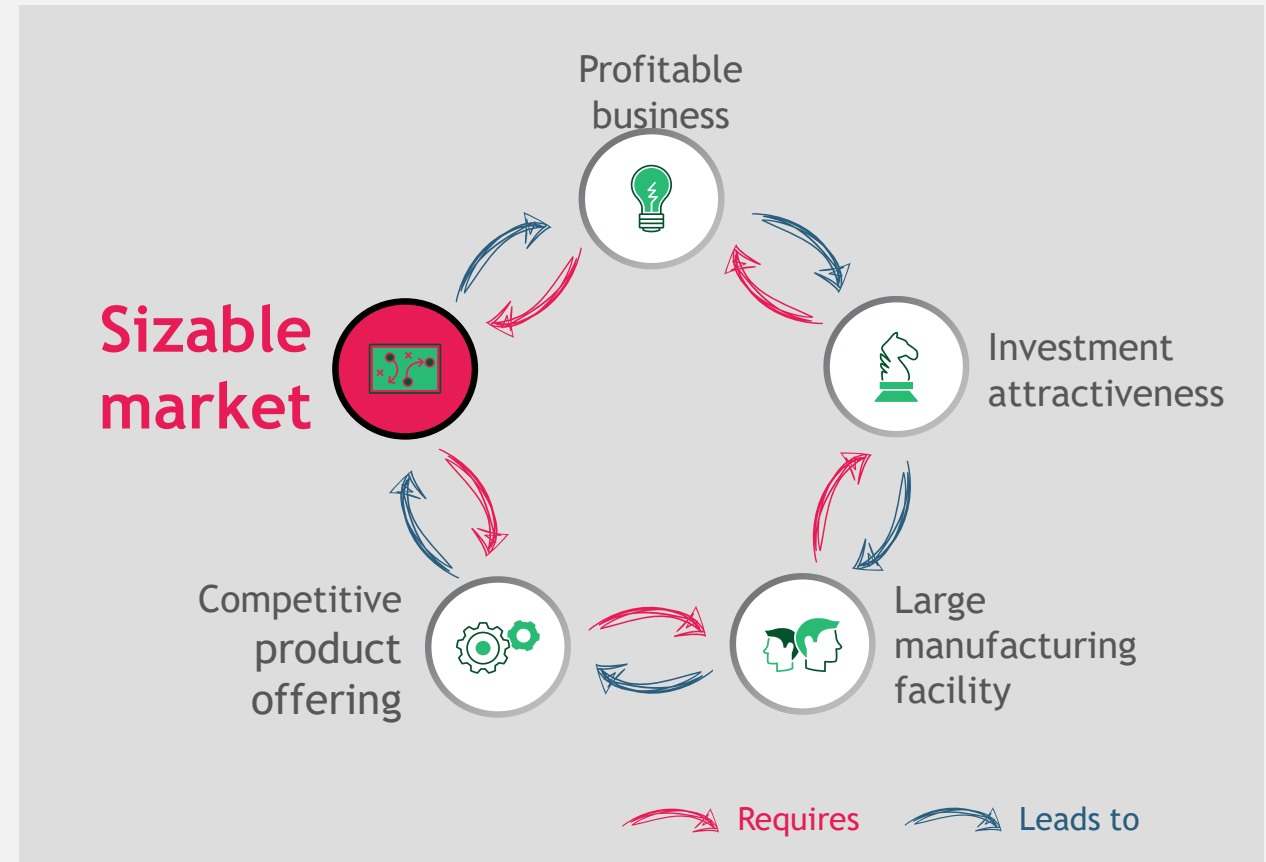






Manufacturers stress that **economic viability still needs to be demonstrated.**

- **Advance purchase agreements** from African governments
- A **revision of current the procurement mechanisms** in Africa
- **Financial mechanisms** to counterbalance the initial lack of price-competitiveness for a defined period



# Perspectives

---





# Perspectives

---



Incentivises  
**technology transfers**

## Vaccine market demand certainty – *Advanced Market Commitments*

- **Single most important issue** to ensure sustainability and attract investments in vaccine development and manufacturing capabilities in Africa.
- **Priority** is to achieve practical and realistic modalities for the procurement of vaccines, both from the international agencies and also from African governments (GAVI and non-GAVI volumes).
- Requires a **transitional procurement support fund** or similar vehicle.
- **Pricing mechanism needs to support journey to sustainability** and provide a business case for investment.
  - A **premium per dose** that manufacturers will be guaranteed.
  - **Timeframe:** Recognise that this cannot continue into perpetuity - but it needs to be significant enough (10 years, 15 years)

# Perspectives

---



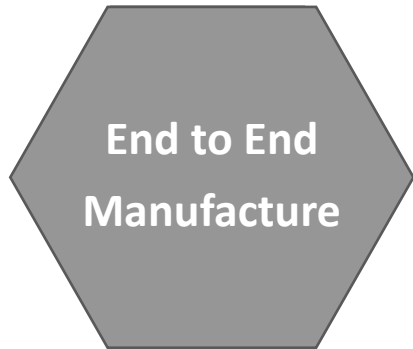
## Partnerships and Collaboration are the backbone

### *Technology Transfer Partnerships accelerate capacity building*

- Product Development
- Policy
- Funding
- Regulatory
- Technical Support
- Academic

# Perspectives

---



## Full (end-to-end) vaccine manufacturing

- Model should support both DP and DS manufacture and ensure that incentives and design **drive full vaccine manufacturing capacity building in Africa.**
- In addition models should also support **collaborative regional, continental, and international manufacturing value chains.**
- Important if Africa is to be in a position to manufacture vaccines in **future outbreak and emergency situations** (global and regional).

# Perspectives

---



## Vaccine product development breaks cycle of dependency.

- Drug Product manufacture: 2 dependencies on a partner
  - **Technology know-how (training and transfer)**
  - **Drug substance supply**
- Drug Substance and DP manufacture: 1 dependency on a partner
  - **End to end manufacture still leaves a dependency on a TT partner for Technology know-how**
- Builds scientific base and know-how.

# mRNA

Technology Transfer Programme

## Worldwide Programme Partners



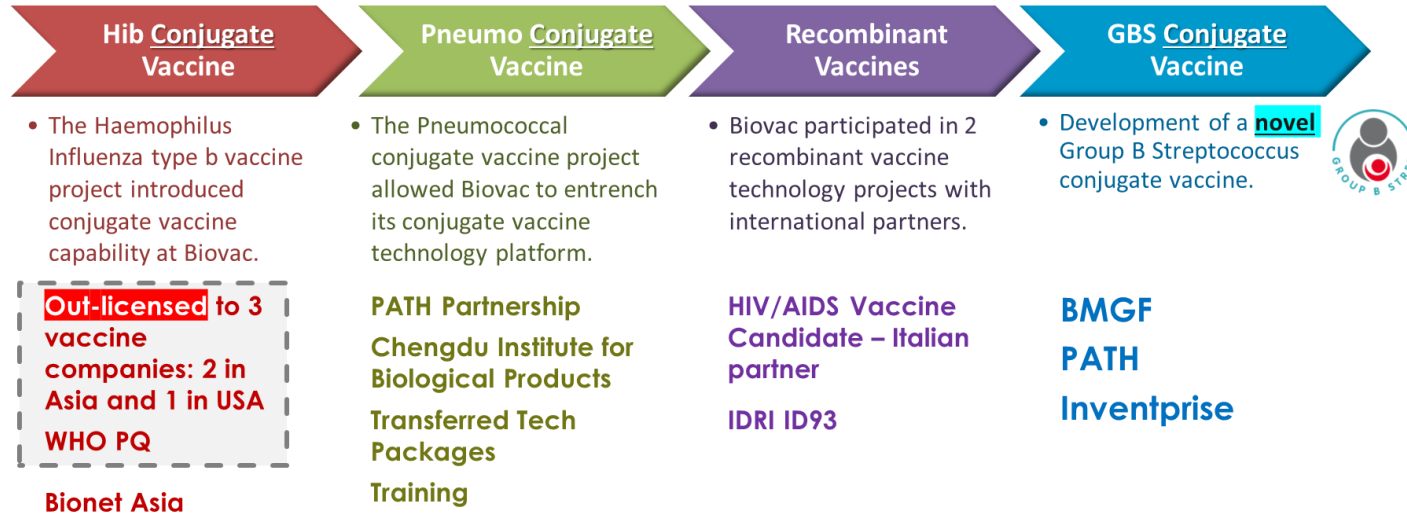
15 programme partners

56 people who received the technology transfer intro training ( 43% are women)

122 people who received trainings from other institutions



# Building globally recognized product development capability



**South Africa's Biovac Signs Deal to Produce Oral Cholera Vaccine**

Agreement comes as global cholera outbreaks strain supply

Covid-19 exposed Africa's lack of local production capacity

By Janice Kew  
23 November 2022 at 17:13 SAST

The Biovac Institute, a partly state-owned vaccine producer in South Africa, has secured a deal to make an oral cholera inoculation as recent global outbreaks of the diarrheal disease have raised demand for vaccines.

The agreement with the International Vaccine Institute includes both licensing and technology transfer and is significant for Biovac because drug substance manufacturing capability will be built.

Being able to produce the raw material needed to make vaccines is one of the last steps manufacturers on the continent are widely missing and will help scale up the local production of clinical trial products in Africa.

"The Covid-19 pandemic exposed Africa's lack of local production capacity," Morena Makhele, the...

**Tech Transfer on Cholera vaccine with IVI**

## International Product Development Partnerships

# Bringing International Vaccine Development Expertise to Nigeria through Partnerships and Tech Transfer



## Novel HIV VLP Based Vaccine

Induced broadly Neutralizing antibodies in Mice model

## Novel Ebola VLP Based Vaccine

Highly immunogenic in mice model. Plans are underway to developed a bivalent VLP Ebola

## Novel Cell-based Yellow Fever Vaccine

Licensed a novel cell based YF vaccine - combines characteristics of DNA and inactivated vaccines. The iDNA YF vaccine induced high neutralizing antibodies in mice. Can be formulated for storage at RT.

## Novel Reassortant Lassa Vaccine

Licensed a Lassa Candidate Vaccine based on reassortant technology. GMP material is now available for tox study and clinical trials.

## Novel HPV Vaccine

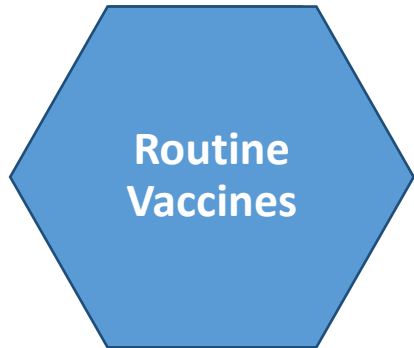
Developing a trivalent 16,18 and 35 HPV vaccine based on African HPV serotypes. Could protect over 90% of HPV serotypes circulating in Africa based on cross-protections

### Partners:

Merck KGaA, MilliporeSigma, Technovax LLC, Medigen LLC., Lion's Head UK, Afreximbank Cairo, ITC Geneva, Bharat Biotech India, Walvax etc

# Perspectives

---



## The business case for pandemic vaccines depends on production of routine vaccines

- **Investment case** cannot be built on production of pandemic vaccines. Has to be established on **manufacture of routine vaccines**.
- This is the **pathway to establishing preparedness and readiness** for manufacture of pandemic vaccines.



# Perspectives

---



## Time and path to market depends on regulatory capacities

- Need to advance the establishment of **harmonized regulatory systems** through AMA and NRAs in Africa.
- To ensure **optimal use of scarce resources** by pooling expertise, capacities and strengthening existing networks.
- Not only important for the capacity to exist but it is vital that it is **efficient at expediting approvals** to support a viable manufacturing industry in Africa.
- **Time:** critical impact on economic viability!

# Perspectives

---



**Beyond  
Africa**

## **Building a diversified and viable vaccine development and manufacturing capability in Africa**

- To ensure **vaccine supply security** in Africa
- The value proposition extends to the establishment of a globally diversified vaccine manufacturing value chain so that **African manufacturers contribute to global supply chain and markets** as well.
- **Not only about “in Africa, by Africa, for Africa”.**



Thank You



The best time to  
plant a tree was  
20 years ago.

The NEXT best  
time is **NOW!**

Advancing Vaccine  
Manufacturing  
Capacity in Africa

Breaking the  
Cycle of  
Dependency

[www.avmi-africa.org](http://www.avmi-africa.org)