

African Union 

Pan African Veterinary Vaccine Centre  
**AU-PANVAC**

**African Union  
Pan African Veterinary  
Vaccine Laboratory:  
AU-PANVAC**

**Dr Charles BODJO**



# OUTLINE

- ❑ Recall of AU-PANVAC Mission
- ❑ Quality Control of Veterinary Vaccines in Africa
- ❑ Initiative for Production of Diagnostics in Africa
- ❑ Supports in “One Health”
- ❑ Maintaining Africa Free from Rinderpest
- ❑ AU- PANVAC New Facility Project



# AU-PANVAC's Mission

“To promote the use of **GOOD QUALITY VACCINES** and **DIAGNOSTIC REAGENTS** for the control, eradication and surveillance of animal diseases in Africa.”



# AU-PANVAC International Recognition



World Organisation  
for Animal Health  
Founded as OIE

- Collaborating Center For Quality Control of Veterinary Vaccine (WOAH Gen. Assembly Resolution 32, Paris, May 2013)



Food and Agriculture  
Organization of the  
United Nations

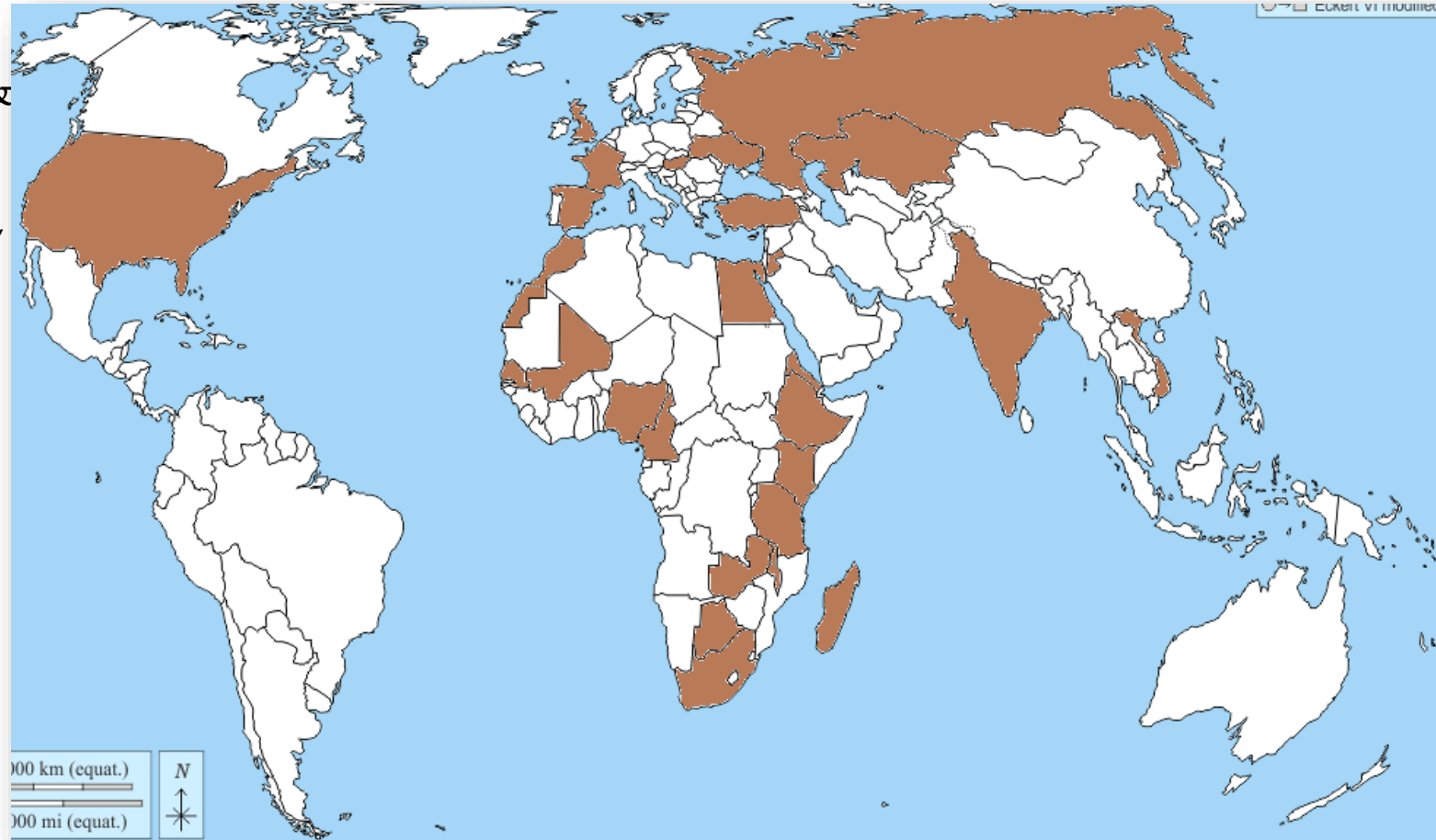
- Reference Centre for Technical Assistance in Quality Control of Veterinary Vaccine (11th May, FAO Rome, 2015)



# Origin of Vaccines Tested at AU-PANVAC: 2021-2023

## ❑ African Manufacturers (20)

- North Africa: Egypt (**VSRVI, MEVAC**) & Morocco (**MCI & BIOPHARMA**),
- West-Africa: Senegal (**ISRA**), Mali (**LCV**), & Nigeria (**NVRI**)
- Central-Africa: Cameroun (**LANAVET**), Chad (IRED)
- East-Africa: Ethiopia (**NVI**) & Kenya (**KEVEVAPI, INNOVA**), Tanzania (**TVI, HESTER Africa**)
- Southern-Africa: Botswana (**BVI**), South Africa (**OBP, Deltamune, Design Biologix**), Madagascar (**IMVAVET**), Zambia (**CVRI**)

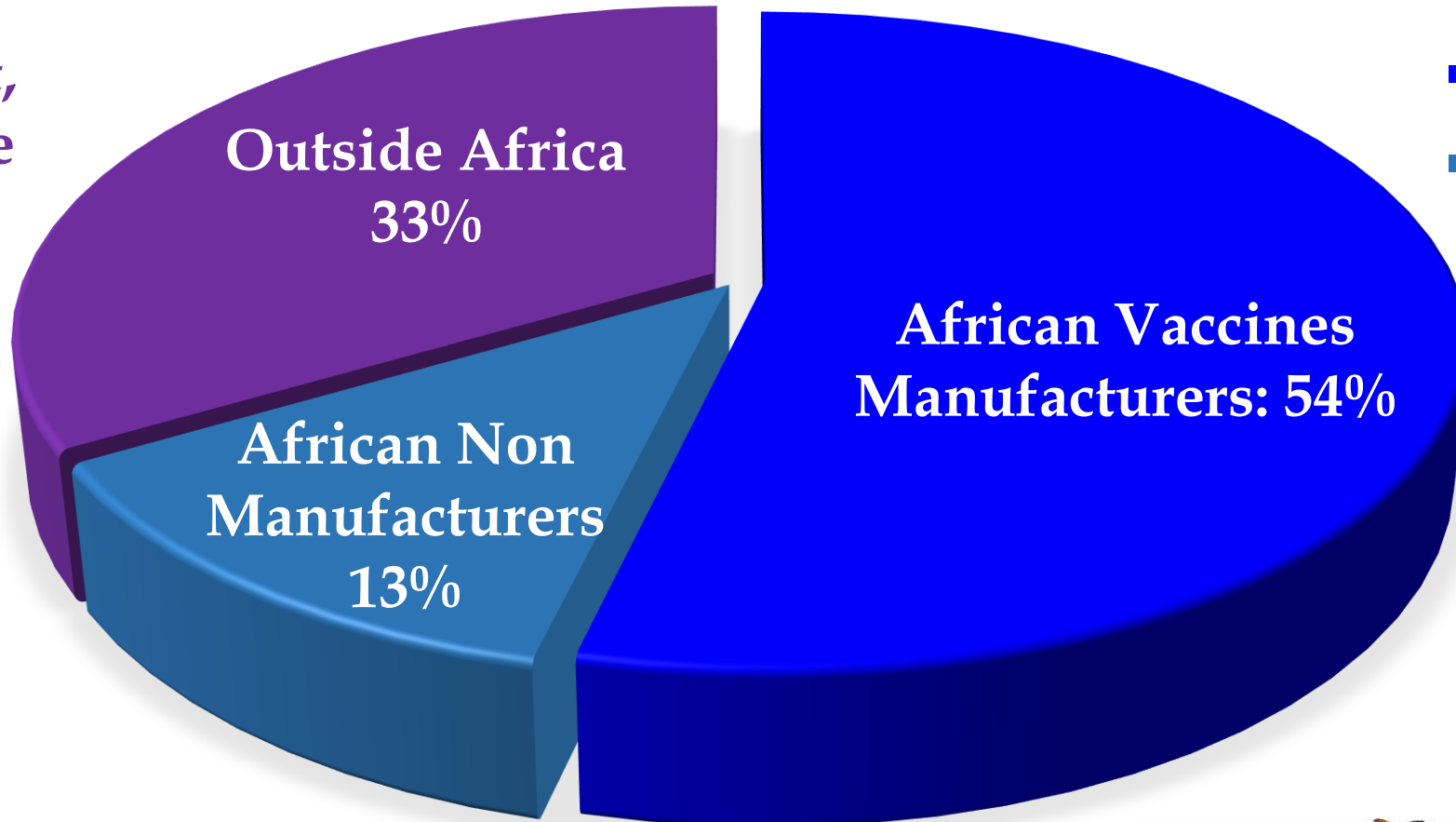


- ## ❑ Outside of Africa (18):
- US (**Zoetis, CEVA**), EU, (**Boehringer, CEVA, ZOETIS, HIPRA**), Russia (**ARRIAH**), Ukraine (**Biotestlab**), Turkey (**DOLVET, VETAL**), Jordan (**JOVAC**), Iran (**VIRA Vaccine, RAZIVSRI**), India (**Brilliant Biopharma, Biomed Indian Immunologicals, Ventri**), Vietnam (**AVAC**), Kazakhstan (**BIOTRON**)

# Origin of Vaccines Tested at AU-PANVAC...

Outside of Africa: 33%

Middle-East,  
Asia, Europe  
& USA



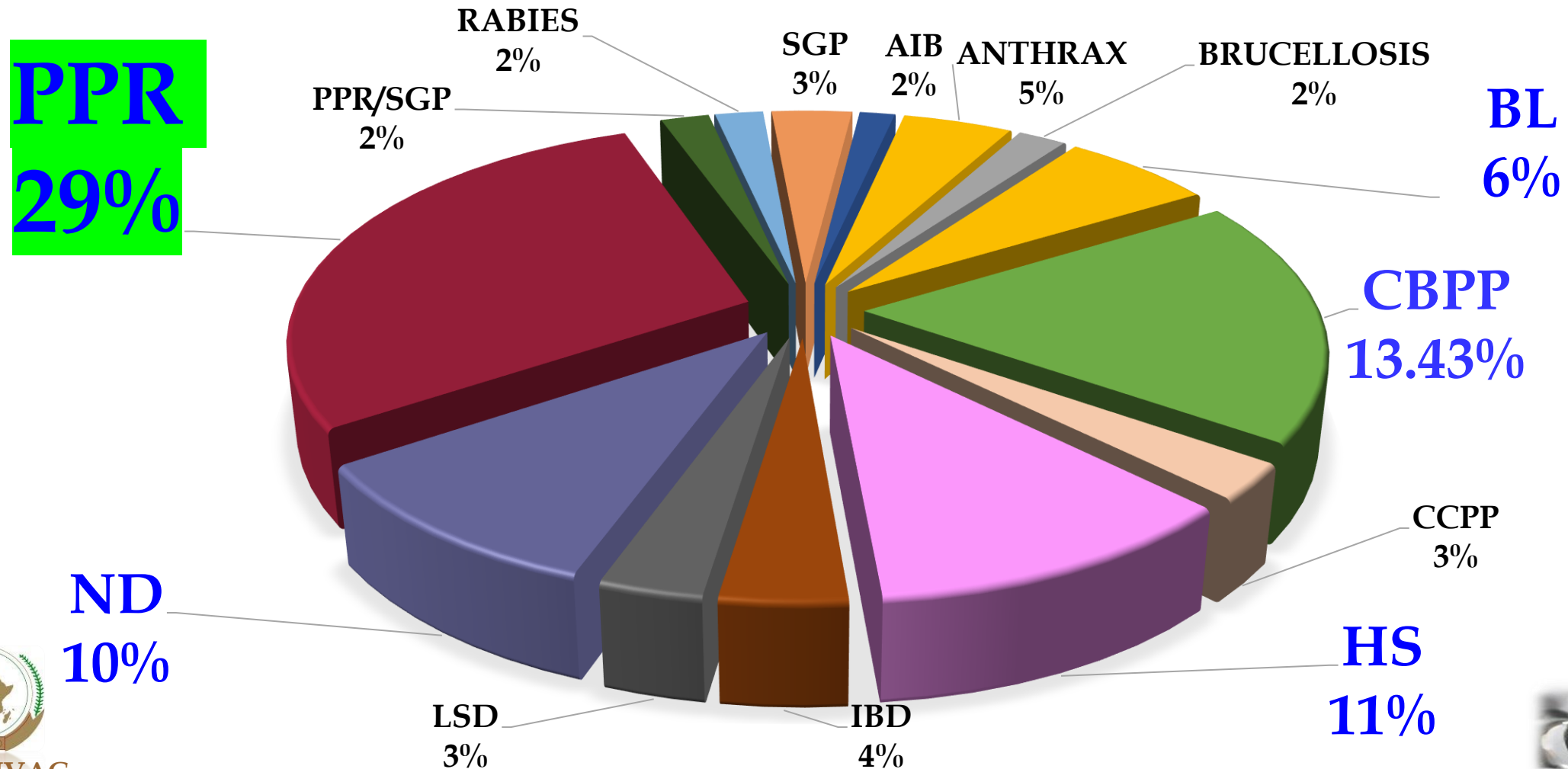
From Africa: 67%

- Vaccine Labs
- CVOs, Drug authorities & NGOs



# Major Vaccines Received for QC: 2018-2022

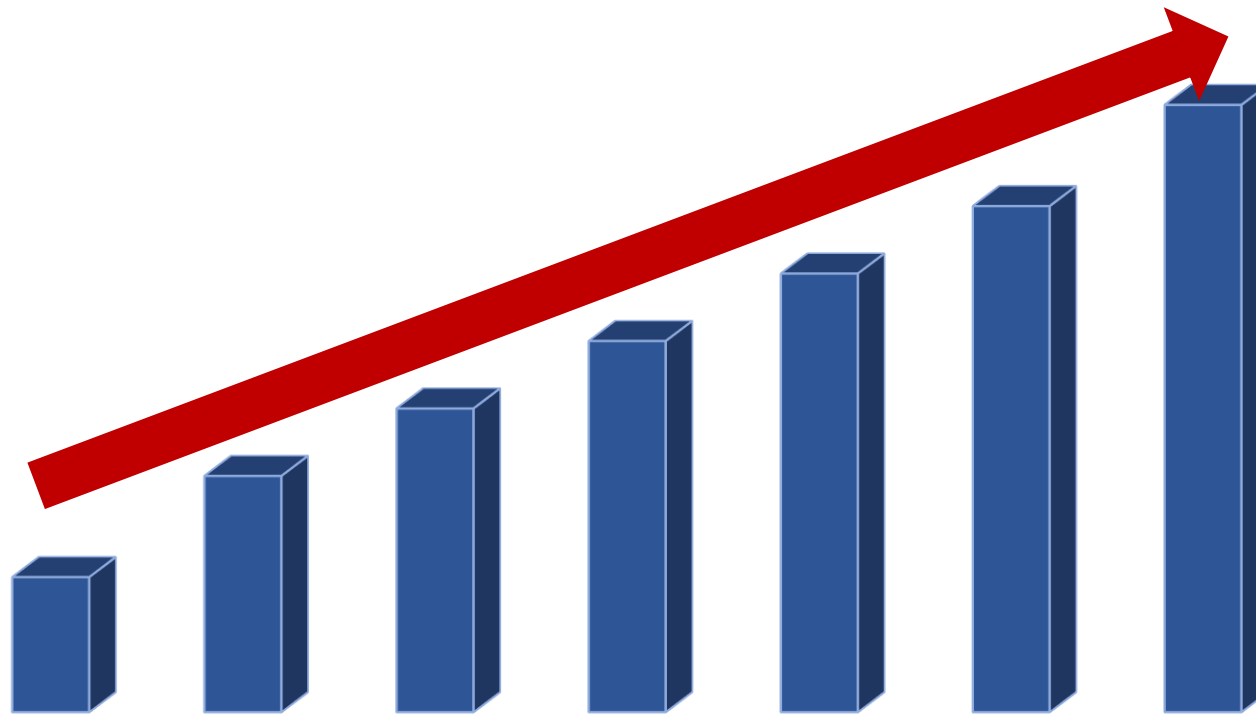
More than **50 type of vaccines** received



# Pass Rate of Vaccines Tested

- $\approx$  **350 Vaccine batches** received **Yearly**
- **One Month** to finalize QC tests/batch

**20%** of Good  
Quality Vaccines  
**(1983)**

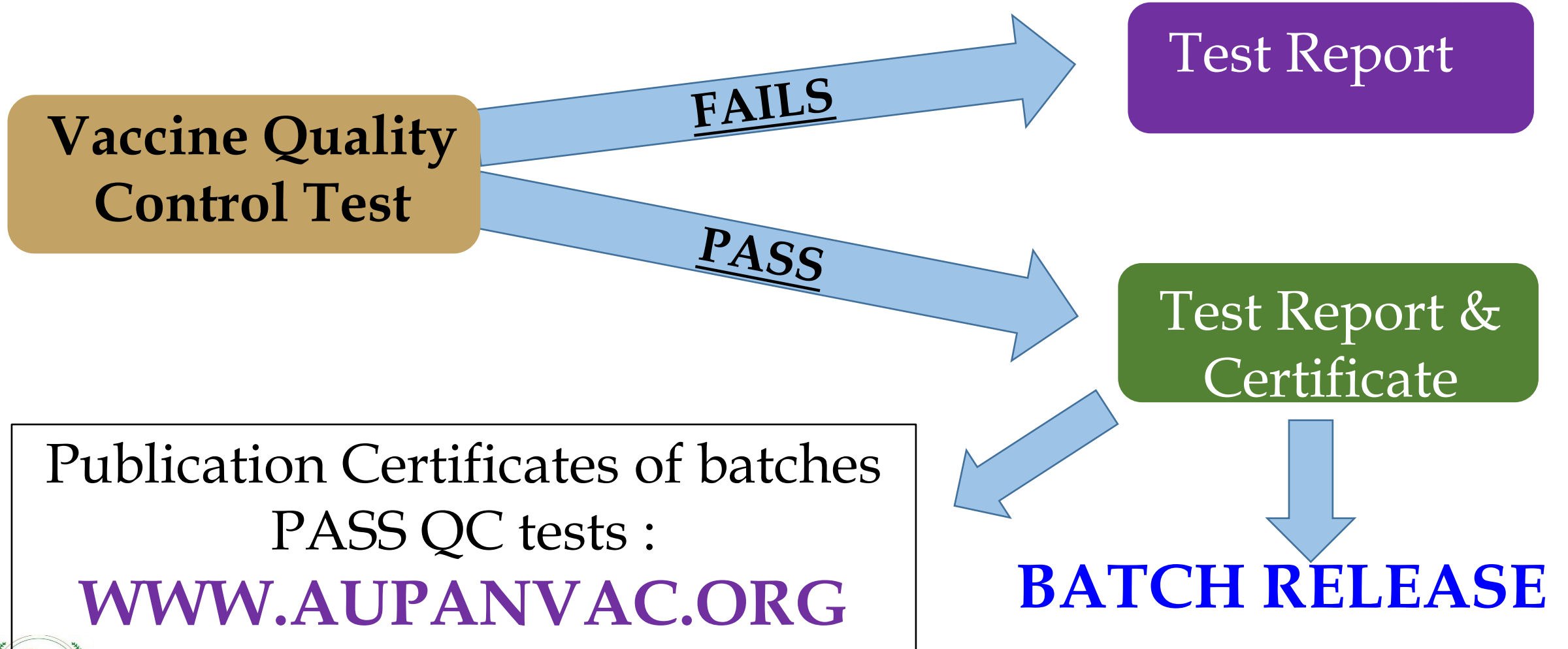


$\approx$  **90%** of Good  
Quality Vaccines  
**(To date)**





# Quality Control Test Report & Certificate



# Harmonization of Standards for Registration of Veterinary Vaccines and Certification of Manufacturing Facilities in Africa



- ❑ Organized by AU-PANVAC with the support of the Global Alliance for Livestock Veterinary Medicines (GALVmed), Abuja, Nigeria 03<sup>rd</sup> – 05<sup>th</sup> July 2023
- ❑ Participation: RECs, NRAs of AUMS, Veterinary vaccine manufacturing facilities, Director of veterinary Services (DVS), AU-IBAR, African Continental Free Trade Area (AfCFTA), World Organisation of Animal Health (WOAH), FAO, GALVmed.

# WORKSHOP Participants



# WORKSHOP Working Group Session



# OBJECTIVE OF THE WORKSHOP

- ❑ Create awareness and built consensus for the harmonization process of vaccine registration and inspection of vaccine manufacturing facilities
- ❑ Discuss the development of a continental harmonized approach for the registration of veterinary vaccines; and auditing of vaccine manufacturing facilities
- ❑ Review the requirements and standards for production and registration of veterinary vaccines in place in different countries and determine modalities for harmonization.
- ❑ Review the **challenges faced by Regulatory authorities and Vaccine manufacturers** in facility assessment and vaccine registration engagements
- ❑ Exploring the feasibility of establishing a **network of African regulatory authorities for the exchange of information on the process of harmonization in Africa** and the implementation of capacity building and technical meetings.

# OUTCOME FROM THE WORKSHOP DISCUSSIONS

- **Similarities have been observed between the format of the vaccine registration dossier structure in the RECs and AUMS, which provides a basis for harmonising the standards relating to the technical requirements for the registration of veterinary vaccines.**
- **The meeting acknowledge the support provided by AU-PANVAC to manufacturers in vaccine quality control and registration to fast track the registration of PPR vaccine through provision of technical assistance especially in the quality, safety and efficacy parts of the dossier**

# RECOMMENDATIONS OF THE WORKSHOP

- There was general agreement that the **“Guideline on the Technical Documentation required to be included in a Registration Dossier for an Immunological Veterinary Product”** developed by the EAC would be adopted as a **template** to be used in all RECs and National Regulatory Authorities in the **registration of PPR vaccine**
- AU-PANVAC in collaboration with National Regulatory Authorities and RECs to initiate the **development of a harmonised regulatory framework for auditing and certification of vaccine manufacturers in Africa by using the PPR vaccine (Nigeria 75/1)** as a model in support of the continental eradication of PPR as a model

# Diagnostics Production Initiative



❑ Diagnostics are developed and validated As per the Standards of

❑ 3 tests are currently available and published in peer review journal:

## 1. PPR bELISA kit for diagnosis of Pest des Petits ruminant's disease (2018)

- *The HPPR-bELISA (detection of antibodies against PPR H protein) for detection of PPR antibodies in sheep and goat serum samples. [Virology Journal, https://doi:10.1007/s00705-018-3782-1](https://doi:10.1007/s00705-018-3782-1).*
- *Reduce by **75% the cost** of testing small ruminants sera for PPR serology diagnosis*

## 2. Contagious Caprine Pleuropneumonia (CCPP)-bELISA for detection antibodies against Mycoplasma capricolum subsp. capripneumoniae (Mccp). (2019) [Veterinary sciences, https://doi:10.3390/vetsci6040082](https://doi:10.3390/vetsci6040082)

## 3. Immuno-Capture ELISA (ICE) for quantification of Mccp protein in CCPP vaccine. (2020) [Veterinary Medicine International, https://doi.org/10.1155/2020/4236807](https://doi.org/10.1155/2020/4236807)





# Mass Production of Diagnostics

- ❑ Automate platform (pre-coating plate) for production of ELISA Kits



- ❑ Production Capacity of **25 kits/Day** (a kit allows to test 2000 sera)



# Production & Distribution of Diagnostics for Animal Diseases surveillance

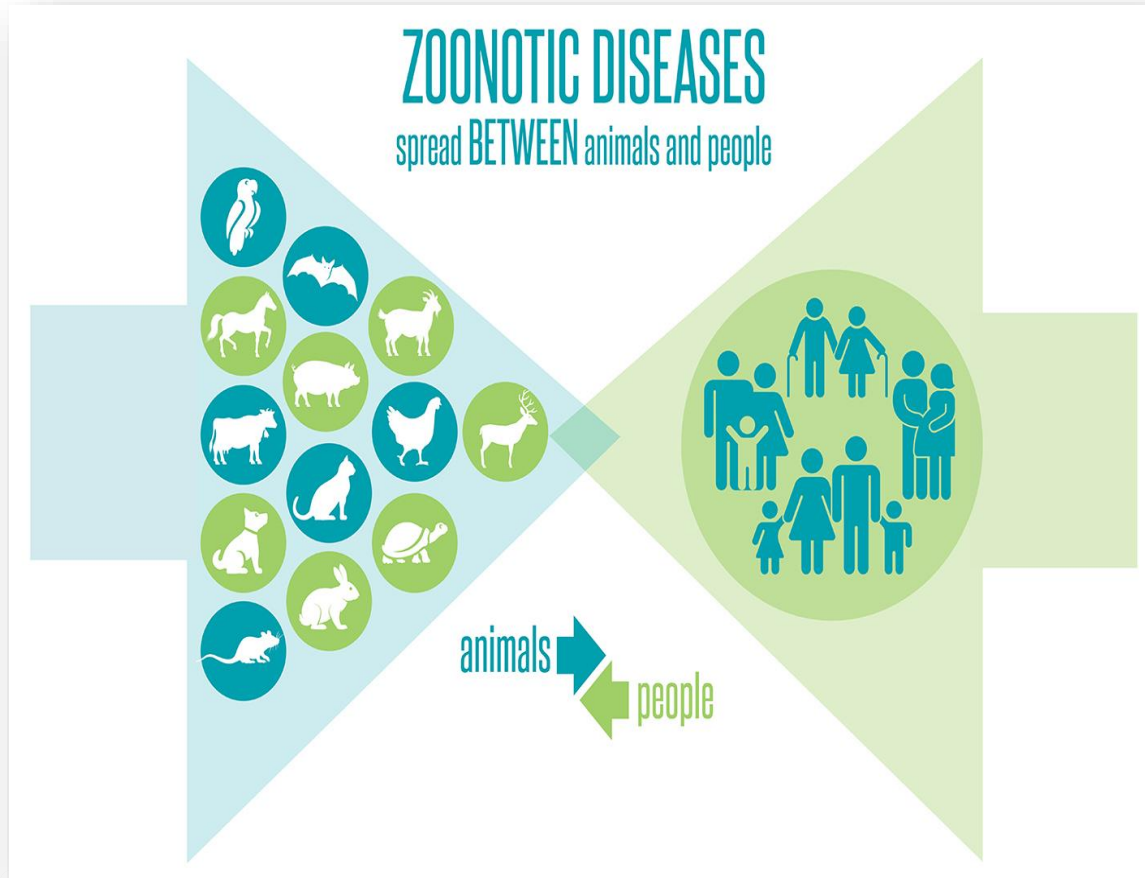
2018 to 2022 with the support of FAO

- More than **300 kits** distributed to **24 Countries** in Africa
- **12 kits** distributed to **6 countries outside of Africa:** (*Brunei, Tajikistan, Mongolia, Bhutan, Nepal, Georgia*)

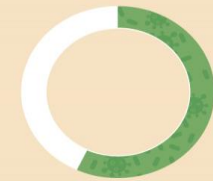


# Support in "One Health"

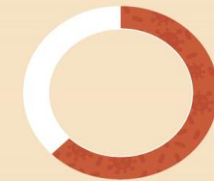
## Impacts of Animal Diseases



### Zoonotic diseases by the numbers



**60%**  
OF EXISTING  
HUMAN  
INFECTIOUS  
DISEASES ARE  
ZOOONOTIC



**75%**  
OF EMERGING INFECTIOUS  
DISEASES OF HUMANS  
(INCLUDING EBOLA, HIV,  
AND INFLUENZA) HAVE  
AN ANIMAL ORIGIN



**80%**  
OF AGENTS WITH  
POTENTIAL  
BIOTERRORIST  
USE ARE  
ZOOONOTIC  
PATHOGENS



**5** NEW HUMAN DISEASES APPEAR  
EVERY YEAR. THREE ARE OF  
ANIMAL ORIGIN

Source: <https://www.oie.int/en/for-the-media/onehealth>



# Veterinary Vaccines Certification in support of “One Health”

- ❑ **Prevention of zoonotic diseases such as:**
  - ❖ Anthrax,
  - ❖ RVF,
  - ❖ Rabies,
  - ❖ Brucellosis...
  
- ❑ **Vaccination also helps to**
  - ❖ Reduce antimicrobial use
  - ❖ Contributes to minimize antimicrobial resistance.



# AU-PANVAC Support during COVID-19 Pandemic



AU-PANVAC was launched as the **African Union COVID-19 Diagnostic Laboratory** by The Commissioner for Social Affairs (H.E Amira Elfadil) & Commissioner for Rural Economy and Agriculture (H.E. Josefa Sacko), May 2020.



# Testing COVID-19 Samples

## □ Collection of samples at AUC Clinic-Medical Doctors for transfer to AU-PANVAC

*AU staff, Member state Embassy, AU Consultants, AU Summits and Meetings Delegates, Partners & Int'l Organizations: AfDB, IFRC, GIZ, etc. ; Non-African Embassies; e.g., Kuwait, Vatican, Brazil, Portugal, Palestine, UAE, Saudi Arabia...*

## □ AU-PANVAC Testing Services

- Real time PCR
- Test report issued- **Within a day**
- 2020-2023: near to **100,000 samples** tested



# Rinderpest Holding Facilities in the World

Institute of Veterinary Control & Veterinary Collection (IVDC), **CHINA**

Institute of Drug Culture Center, Beijing, **CHINA**

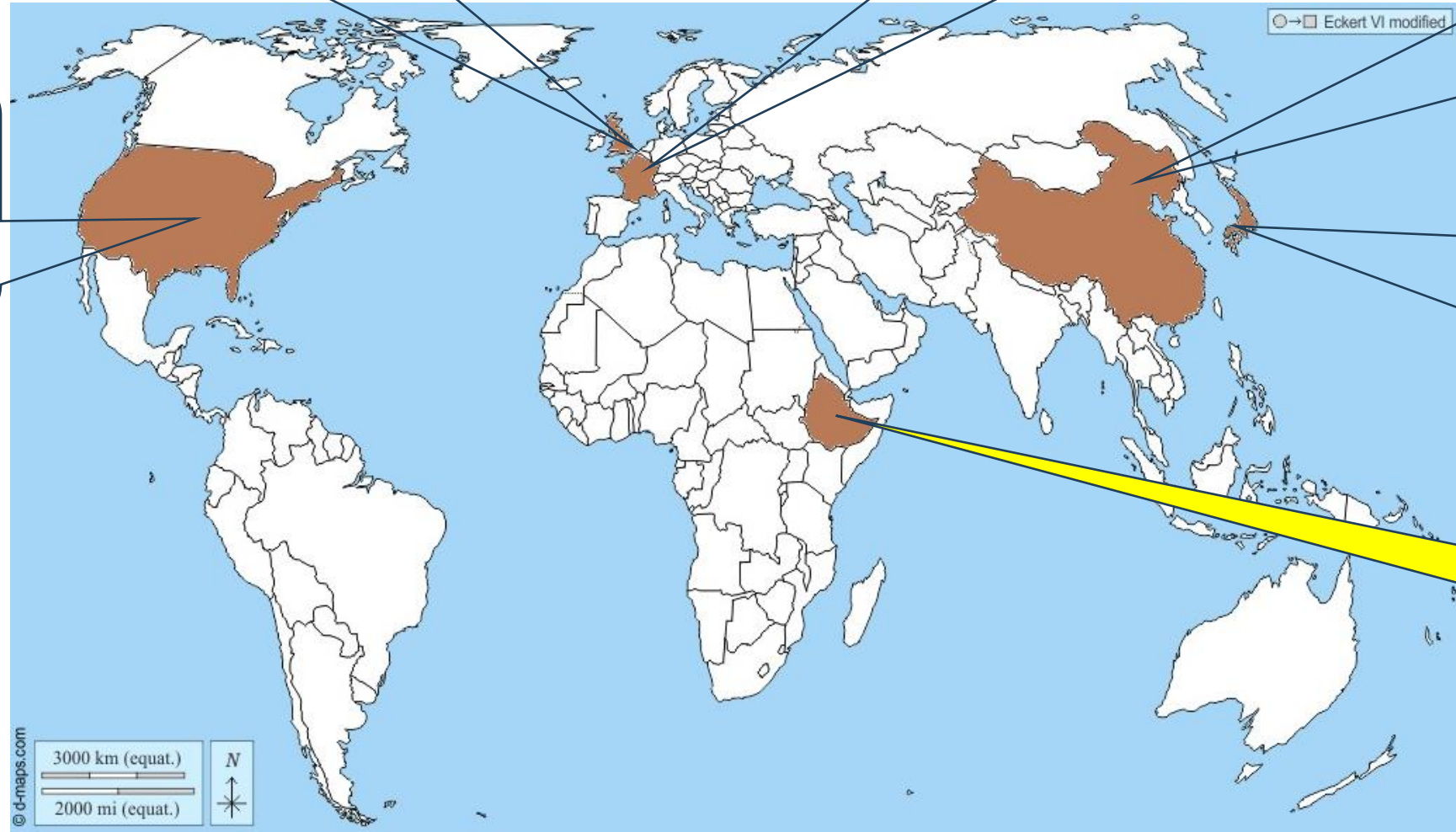
High Containment Facilities of Exotic Diseases Research Station, & National Institute of Animal Health, **JAPAN**.

**AU-PANVAC ETHIOPIA.**

The Pirbright Institute, Surrey, **UK**

CIRAD), Montpellier, **FRANCE**

USDA-APHIS, (FADDL), Plum Island, New York, **USA.**



# AU-PANVAC Rinderpest Holding Facility: Status

- ❑ **Category A:** Rinderpest Holding Facility for storing **Rinderpest Virus Containing Material**, excluding vaccine stocks
- ❑ **Category B:** Rinderpest Holding Facility for storing only manufactured **Rinderpest Vaccines, Vaccine stocks** and material solely for their production:





# Collection of RCM from AU-MS for safe storage at AU-PANVAC World-Class Lab

SUDAN, 2016

ETHIOPIA, 2019

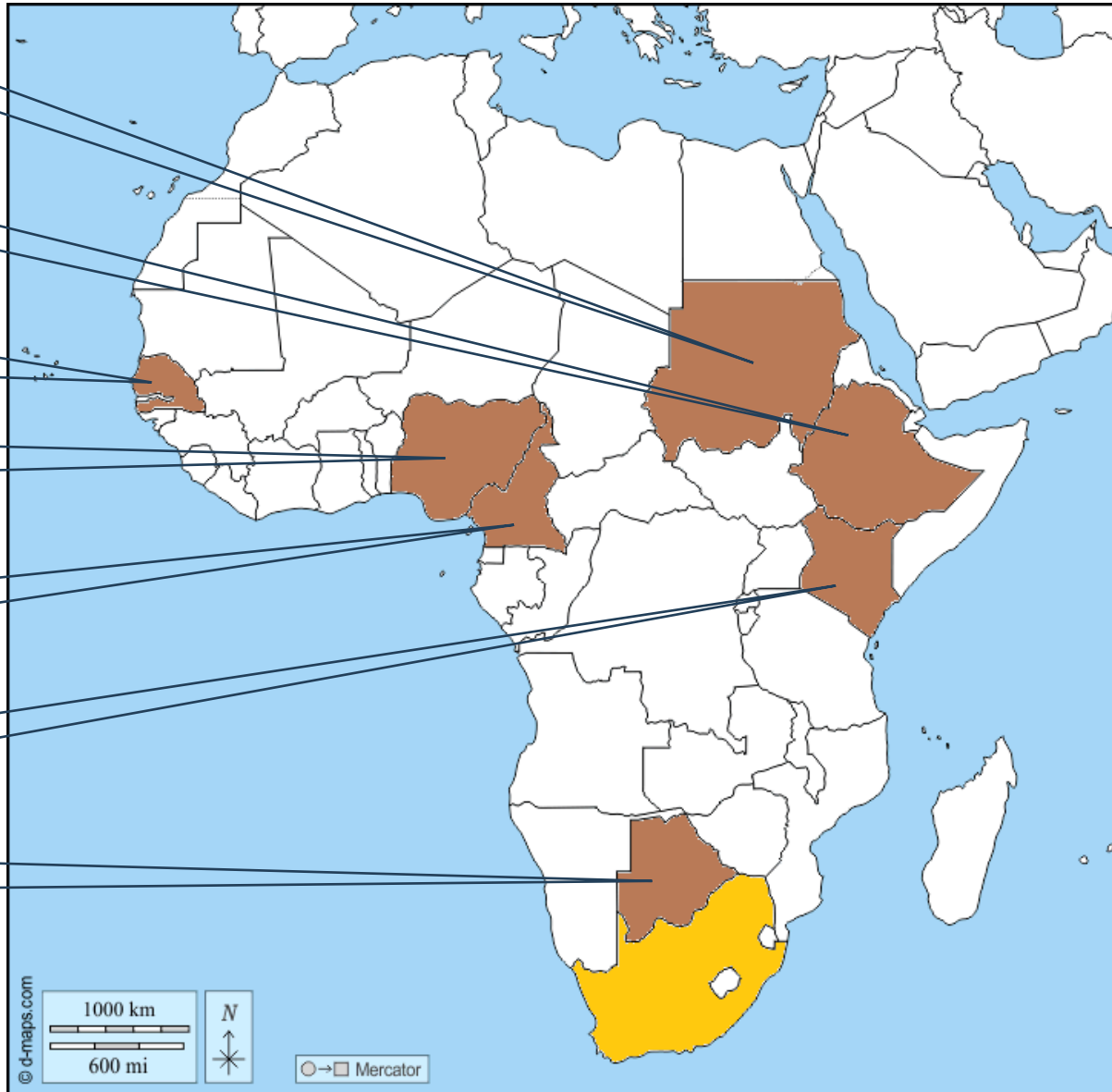
SENEGAL, 2016

NIGERIA, 2016

CAMEROON, 2012

KENYA, 2016

BOTWANA, 2015



## From 7 Countries



# Assisting AU-MS (in coll. with the FAO) for destruction of RCM

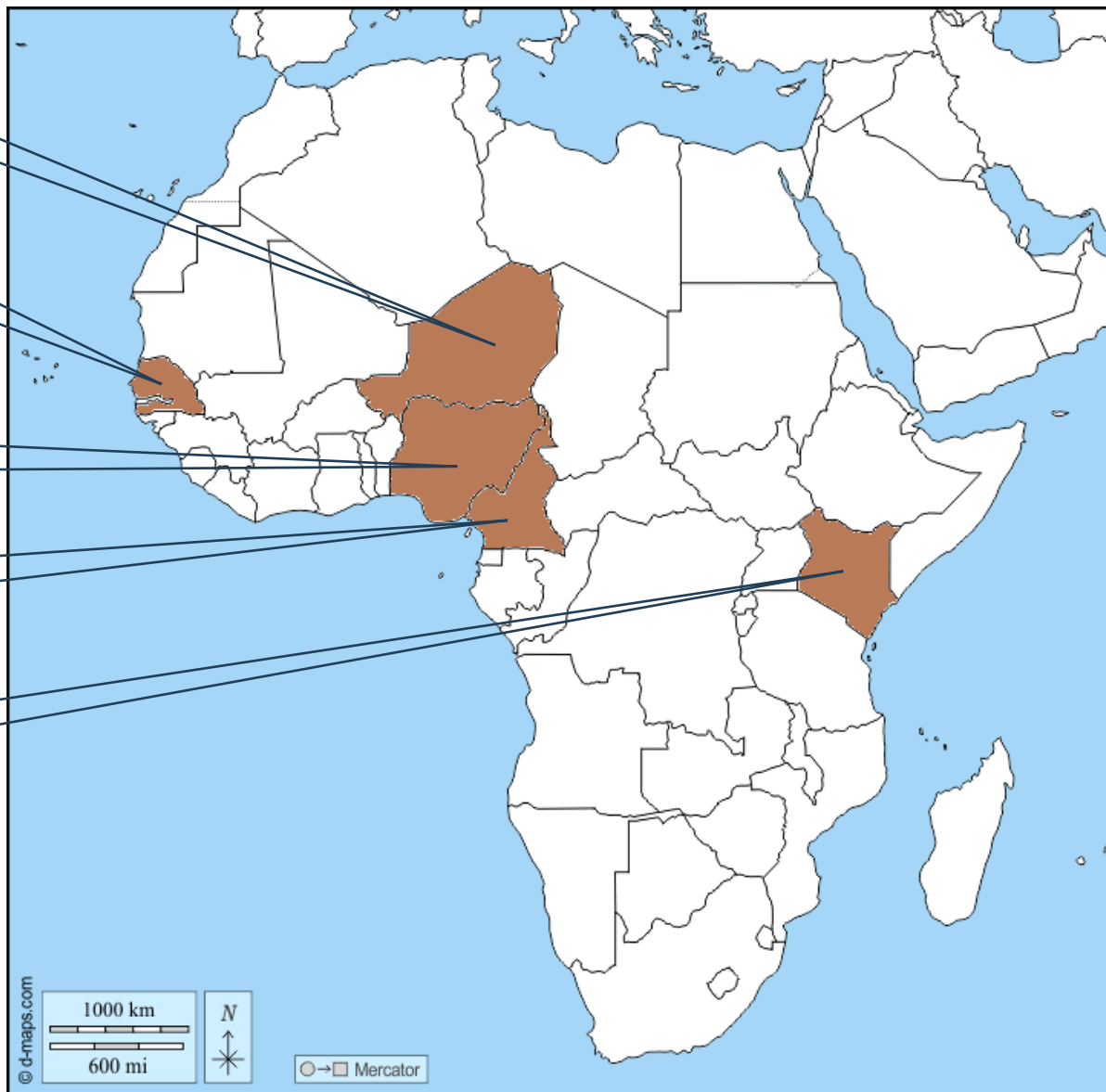
**NIGER, 2012**

**SENEGAL, 2016**

**NIGERIA, 2018**

**CAMEROON, 2016**

**KENYA, 2016**



## Assistance to 5 Countries



# RP Continental Vaccine Reserve

- Emergency vaccine bank was Inaugurated by Chairperson of the AUC (H.E Moussa Faki Mahamat) on **January 31<sup>st</sup>, 2018**



- RP Vaccine Reserve as Emergency preparedness for outbreak of RP
  - Current RP vaccine stock: **2,5 Million dose**
  - Future plan to increase to **10 million doses**

# AU- PANVAC New Facility Project

## Rational

- ❑ Enhance Biosafety and Biosecurity measures
- ❑ Consolidate in one site all the Facilities;
- ❑ Expand Laboratory operation and Training capacity



# Project on AU-PANVAC New Facility



The new facility will include the following:

- Vaccine Quality Control laboratories
- Biological reagent laboratories
- Process development laboratories
- Biosafety Level 3 Laboratories
- Training and Technology transfer Center
- Vaccine bank
- Conference and meeting rooms
- Offices, recreation facility and canteen
- Store: Highly secured Store rooms especially for storage of highly pathogenic organisms



# Handing Over Basis of Design of new Facility



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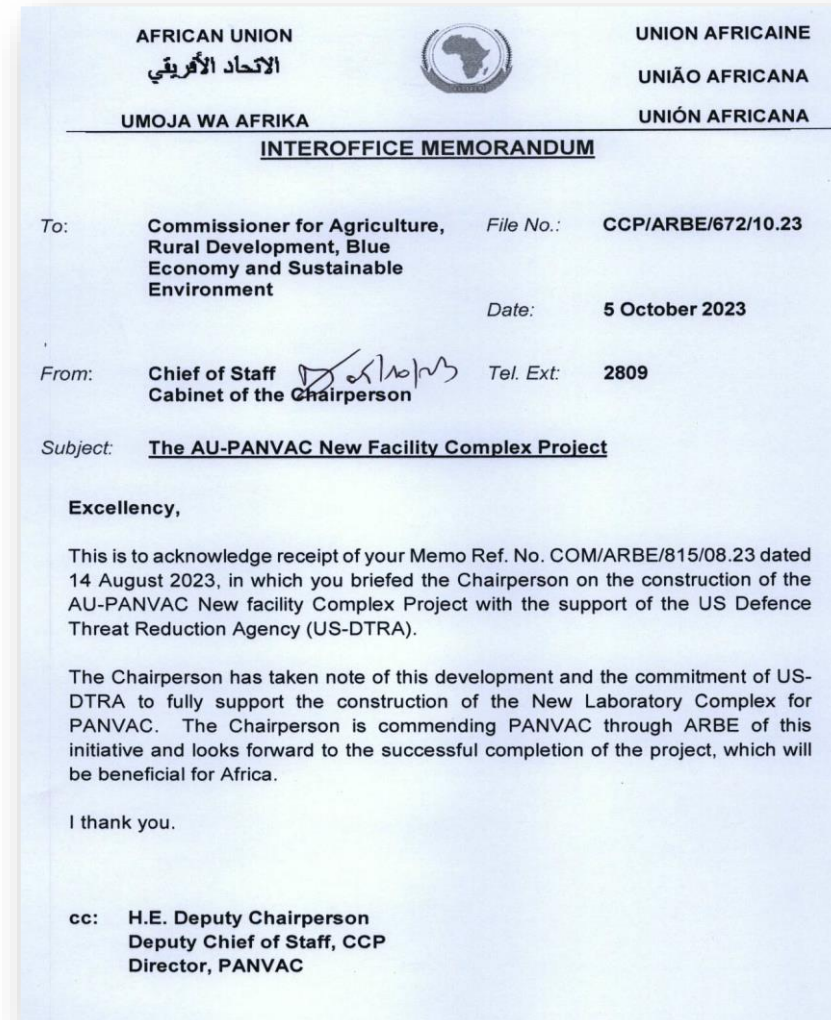
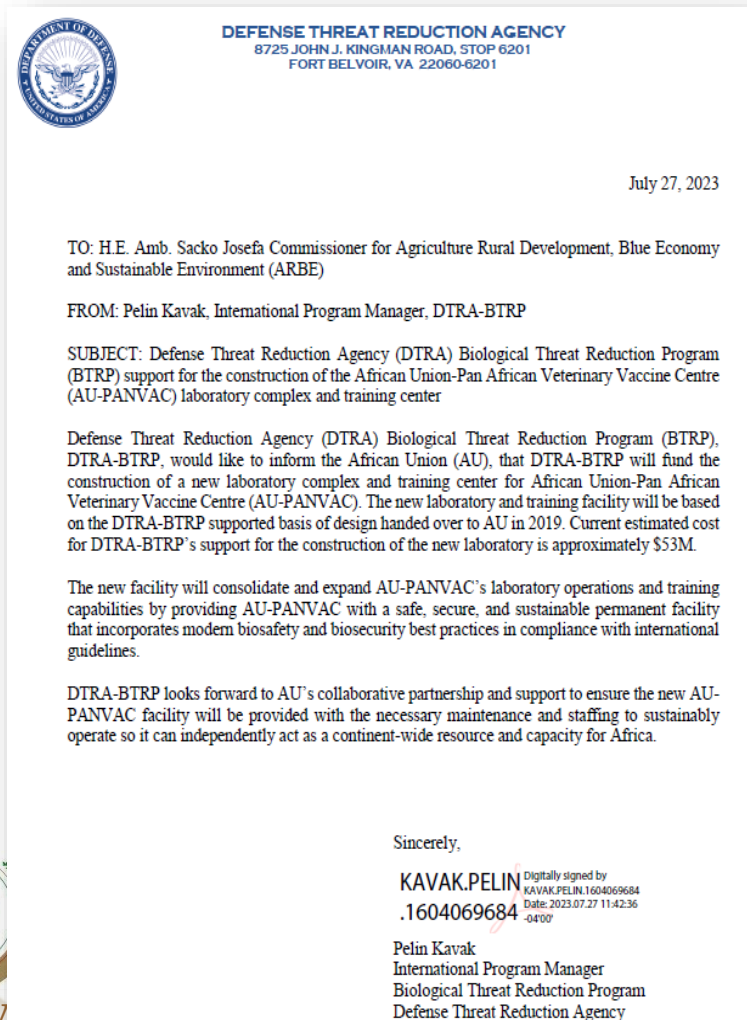
Handing over of the Basis of Design by US Ambassador to the Commissioner of REA, AUC -3<sup>RD</sup> APRIL 2019.



# US-DTRA Support for the New Facility

❑ Commitment for full Construction with **53 M USD**

❑ The Chairperson of AUC approved the new facility and commended PANVAC and ARBE



# Synergies and Partnerships



**AU-MSD**

**AU-MS Vaccine  
Producing Labs**

**Animal Health  
Centre in African  
RECs**



**BILL & MELINDA  
GATES foundation**



**US-DTRA**







**AU-PANVAC!**

**ADDING VALUE TO ANIMAL HEALTH AND HUMAN LIVES!!**



**WWW.AU-PANVAC.ORG**