

SUPPORT SUMMARY

1. Assessment & Market Sizing Demand

- Tick distribution: *Rhipicephalus microplus* is spreading across southern West Africa—including Nigeria, Benin, Togo, Ghana, Burkina Faso, and Mali.
- Cattle population: FAO reports over 8.5 million dairy cows in the region, translating to millions of doses annually.

2. Technical Support.

a) Manufacturing Infrastructure & Quality Compliance

- Recombinant antigen production
Bm86-based vaccines require recombinant protein production under GMP (Good Manufacturing Practice)
- WOA standards
The WOA Terrestrial Manual outlines principles for veterinary vaccine production.
- Regulatory capacity in West Africa. Exhibit gaps in policies, resources, and trained personnel.

b) Technical Expertise & Training

- Skilled workforce in process engineering, quality assurance/control, and veterinary regulatory affairs.
- Laboratory and production capabilities for antigen expression, process scale-up, and stability testing.

c) Distribution & Cold Chain

- Cold-chain logistics: Essential for vaccine stability.
- Delivery systems: Mobile or outreach programs.

3. Financial Support Needs

a) Capital Expenditure (CapEx)

- Facilities & Equipment: Fermentation bioreactors, purification systems, formulation and filling equipment, cold storage, and QC labs meeting GMP.
- Regulatory support: Resources for upgrading facilities

(b) Operational Expenditure (OpEx)

- Raw materials & consumables: Media, adjuvants, reagents, packaging.
- Personnel: Hiring and training staff.
- Quality assurance: Ongoing validation, sterility testing, batch release.
- Distribution logistics: Transport, cold chain, outreach campaigns.

c) Development Costs

- Initial R&D for Bm86 variants suited to local tick strains.
- Pilot studies, field efficacy trials, vaccine registration in each country.

d) Demand-Side Support

- Subsidies or cost-sharing: Encourage uptake among smallholder farmers.
- **Public-private partnerships:** Engage governments, NGOs (e.g., GALVmed's MAHABA initiative) for demand stimulation and financing.