THE AU-IBAR 2021-2022 SURVEY TO DETERMINE THE ‘INSTITUTIONAL PREPAREDNESS OF AFRICAN COUNTRIES TO ELIMINATE RABIES BY 2030’

(This presentation is being given on behalf of the AU-IBAR who are the sole owner of this survey data with Permission form Dr Hiver Boussini – Animal Health Lead AU-IBAR, Hiver.Boussini@au-ibar.org)

Dr Kavosa Mudoga BVM, MPH
Director Animals in Communities
Study Objectives

Overall Objective

• To support development of a CONTINENTAL DOG-MEDIATED RABIES ELIMINATION STRATEGY

Specific objectives was to:

1) Review literature on the rabies landscape in Africa,
2) Understand the policy and institutional preparedness for the end rabies by 2030 campaign
3) Establish country-specific profiles of policies, institutions, and preparedness for rabies elimination towards supporting national rabies elimination strategies and programs (add-on).
Study Outputs

1. Landscaping of policies and institutional arrangements for rabies elimination in Africa by 2030
2. Abridged version of Landscaping of policies and institutional arrangements for rabies elimination in Africa by 2030
3. Baseline survey on the preparedness of African countries to eliminate rabies by 2030
4. Country profiles on their rabies preparedness (43)
5. Included in reports are PESTEL (with literature review) and SWOT (with baseline survey)
Methodology

• Literature Review
• KAP survey on Kobo collect from December 2021 and April 2022
• 58 respondents interviewed
• 43 CVO questionnaires/ interview done
• Analysis on 39 (71%) CVOs and 16 (29%) from partner organisations.
Literature Review

Landscaping of policies and institutional arrangements for rabies elimination in Africa by 2030
Observations from literature

Reviewed 200 documents

• In Africa, the annual livestock losses from rabies US$ 280 million; GDP loss of US$ 773 million
• Wildlife rabies from livestock grazing around national parks and illegal wildlife hunting
• 80% of human cases in rural areas; >40% of rabies deaths in children (primarily boys) aged less than 15 years.

• Literature academic, biased for monitoring, surveillance, virus typing.
• Not enough quantitative data to help plan a rabies program

Literature Gap

• Insufficient economic, planning and institutional data for one-health project formulation (processes, workplans etc.).

• Very little literature to guide policy formulation
Online Survey

Baseline survey on the preparedness of African countries to eliminate rabies by 2030
Animal Population Data

- No geo-referenced dog census (74%) and wildlife (90%)
- Lack of reliable rabies morbidity and mortality data
- No gender-disaggregated data
- 69% CVOs don’t aware when national census is done.
- 16% countries do national census every 1, 5 or 10 years.
- 26% countries guesstimate dog populations

Geo-referenced census of wildlife, livestock and dogs, as reported by CVOs from 39 African countries.

Geo-referenced wildlife census by species

Geo-referenced Livestock census by species

Geo-referenced or basic estimated census of dogs
Dog, Livestock, Wildlife rabies numbers

- Tanzania: highest dog rabies - 2,030
- 8 countries: No data on rabid dogs
- 72%: No data on livestock rabies deaths
- Chad and Algeria: highest livestock deaths
- 5 countries: with wildlife rabies deaths
- Most have no wildlife data

Number of dogs infected by rabies per in 2021 (39 CVOs)

- Over 1,000: 3%
- 100 to 999: 15%
- Below 100: 46%
- None: 28%
Dog Population Management

• 87% CVOs believe vaccinations and DPM together not vaccinations alone.

• All 39 CVOs believed rabies and DPM for education, chiefs, religious, influencers.

• 85% believe DPM for wildlife; 50% partners don’t know DPM importance in wildlife.

• 62% CVOs believe rabies has affected wildlife populations.

• Challenges for wildlife rabies management—lack of funds, No dog census; inadequate wildlife surveillance, explosion of dog populations, hunting dogs not regulated
Gender and vulnerability disaggregated Data

Who takes dogs for vaccinations?

Boys or Girls

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mostly</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td>13%</td>
<td>74%</td>
</tr>
<tr>
<td>Never</td>
<td>25%</td>
<td>8%</td>
</tr>
</tbody>
</table>

PLWD

<table>
<thead>
<tr>
<th>Frequency</th>
<th>PLWD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mostly</td>
<td>0%</td>
</tr>
<tr>
<td>Rarely</td>
<td>67%</td>
</tr>
</tbody>
</table>

Mostly: Boys, Girls
Rarely: Boys, Girls
Gender and vulnerability disaggregated Data

Who has access to treatment?

Access to Treatment (reported by CVOs)

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Access</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Good</td>
<td>16%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Access to Treatment (reported by CVOs)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Access</td>
<td>45%</td>
<td>41%</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>36%</td>
<td>40%</td>
</tr>
</tbody>
</table>
Politics and Governance

Political Support not translating to multisectoral guidelines, regulations or budget allocation

Parliamentarians' attention to legal instruments that support zoonotic control and rabies eradication (39 CVOs and 16 partners)

- **Agree**: 19% (CVOs), 25% (Partners), 33% (Undecided)
- **Disagree**: 33% (CVOs), 28% (Partners), 28% (Undecided)
- **I do not know**: 0% (CVOs), 0% (Partners), 0% (Undecided)
- **Undecided**: 44% (CVOs), 44% (Partners), 44% (Undecided)

Legal instruments that support rabies control in place (39 CVOs and 16 partners)

- **Yes**: 13% (CVOs), 33% (Partners)
- **No**: 0% (CVOs), 0% (Partners)
- **I do not know**: 5% (CVOs), 5% (Partners)

www.au-bar.org
Reasons for high and low priority on rabies from politicians

Main Reasons CVOs perceived high priority from political structures

- Rabies is prioritized: 28%
- Availability of vaccination: 18%
- World Rabies Day: 13%
- Awareness of impact of rabies: 13%
- Collaboration between ministries: 10%
- Commitment to fight rabies: 8%
- Community sensitization: 8%

Main Reasons CVOs perceived low priority from political structure

- Not aware of impact: 8%
- Lack of resources: 8%
- No infected humans: 5%
- No vaccination campaign: 3%
- Lack of strategies: 3%
- Need new laws: 3%
Institutional Capacity
logistics, equipment, knowledge

- Logistics, tools and equipment to deliver NRE
  - Logistics support: 11% Agree, 86% Disagree
  - Laboratory services: 49% Agree, 51% Disagree
  - Trained manpower: 59% Agree, 41% Disagree
  - Tools & equipment: 23% Agree, 74% Disagree

- Technical knowledge to run the NRE program
  - Animal health practitioners: 15% Poor, 49% Average, 51% Good
  - CVOs: 6% Poor, 31% Average, 31% Good

Agree
Disagree

Animal health practitioners
CVOs
## Institutional Capacity Training

<table>
<thead>
<tr>
<th>Type of training undertaken</th>
<th>No. of Countries</th>
<th>% of assessed Countries (39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidemiological diseases surveillance</td>
<td>32</td>
<td>82%</td>
</tr>
<tr>
<td>Dog Bite Prevention and Management</td>
<td>25</td>
<td>64%</td>
</tr>
<tr>
<td>Sensitisation and Awareness for Rabies</td>
<td>24</td>
<td>62%</td>
</tr>
<tr>
<td>Animal Rabies diagnosis &amp; Reporting protocols</td>
<td>18</td>
<td>46%</td>
</tr>
<tr>
<td>Disease Control Drills</td>
<td>18</td>
<td>46%</td>
</tr>
<tr>
<td>Animal First Aid</td>
<td>18</td>
<td>46%</td>
</tr>
<tr>
<td>Human Rabies treatment protocols</td>
<td>17</td>
<td>44%</td>
</tr>
<tr>
<td>A veterinary disaster response team</td>
<td>17</td>
<td>44%</td>
</tr>
<tr>
<td>Human First Aid</td>
<td>17</td>
<td>44%</td>
</tr>
</tbody>
</table>
Institutional Capacity
Vaccines

- 62% CVOs and 38% partners No PrEp and PEP for veterinary, human and wildlife teams in the rabies process.
- 74% have national cold chain system for animal vaccines.
- 15% purchase through OIE vaccine bank.
- Most countries have >50% vaccine deficit against planned.
**Rabies Testing reagents, tools & equipment**

### Availability of reagents and equipment

N=26

<table>
<thead>
<tr>
<th>Abbreviation (Test)</th>
<th>Full Name</th>
<th>Countries using test (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFAT</td>
<td>Direct Fluorescent Antibody Test</td>
<td>12</td>
</tr>
<tr>
<td>DRIT</td>
<td>Direct, Rapid Immunohistochemical Test</td>
<td>1</td>
</tr>
<tr>
<td>ELISA</td>
<td>Enzyme-linked immunosorbent assay</td>
<td>1</td>
</tr>
<tr>
<td>FAT</td>
<td>Fluorescent Antibody Technique</td>
<td>3</td>
</tr>
<tr>
<td>FAVN</td>
<td>Fluorescent Antibody Virus Neutralization Test</td>
<td>1</td>
</tr>
<tr>
<td>FITC</td>
<td>Fluorescein isothiocyanate labelled antibody</td>
<td>1</td>
</tr>
<tr>
<td>IVCC</td>
<td>Viral Isolation on Cell Culture</td>
<td></td>
</tr>
<tr>
<td>MIT</td>
<td>Mouse Inoculation Test</td>
<td></td>
</tr>
<tr>
<td>RFFIT</td>
<td>Rapid Fluorescent Foci Inhibition Test</td>
<td></td>
</tr>
<tr>
<td>RT-PCR</td>
<td>Reverse transcription polymerase chain reaction</td>
<td></td>
</tr>
</tbody>
</table>
Monitoring & Surveillance

Countries with in-country rabies/zoonoses surveillance and reporting to OiE, FAO, AU-IBAR, or WHO

- 79% of countries report rabies outbreaks regularly on the AU-IBAR, OIE, FAO or WHO platforms.
- 21% of countries do not have rabies/zoonotic disease surveillance systems (national, subnational & community levels).
- 18% of countries do not report rabies outbreaks regularly on the AU-IBAR, OIE, FAO or WHO platforms.

Monitoring & Surveillance of Dog rabies for transboundary and dogs-in-transit

- 51% of countries do not have transboundary coordination, reporting, monitoring & surveillance of rabies zoonooses with neighboring countries.
- 31% of countries do have transboundary coordination but do not have vaccination regulations for dogs in transit (exportation, importation).
- 18% of countries do have transboundary coordination and vaccination regulations for dogs in transit (exportation, importation).
Leadership and coordination of rabies elimination at the continental level for AU-IBAR, AU-CDC & WHO (CVO rating)

- AU-IBAR: 44% FAR BELOW, 26% SLIGHTLY BELOW, 51% MEETS, 3% SLIGHTLY ABOVE
- AU-CDC: 44% FAR BELOW, 23% SLIGHTLY BELOW, 23% MEETS, 3% SLIGHTLY ABOVE
- WHO: 27% FAR BELOW, 21% SLIGHTLY BELOW, 5% MEETS, 5% SLIGHTLY ABOVE

Technical support of FAO: 59% MEETS
Technical support of OIE: 75% MEETS
Technical support of RECS: 28% MEETS
CVOs attributed the poor coordination:

- lack of good leadership
- few rabies programs
- inadequate rabies vaccines
- inadequate support from RECs,
- lack of a regional rabies elimination strategy.
- inadequate resources,
- technical support not readily available
- lack of geo-referenced population data on dogs, livestock and wildlife.
INSTITUTIONAL ARRANGEMENTS ARE ADEQUATE TO DELIVER RABIES ELIMINATION

COORDINATION MECHANISMS, LEGAL AND INSTITUTIONAL ARRANGEMENTS TO SUPPORT RABIES IN PLACE (39 CVOs)

- Legal Instruments adequately support Rabies control: 62%
- Additional coordination mechanisms are needed between OH partners to deliver Rabies elimination: 44%
- Institutional arrangements are adequate to deliver Rabies elimination: 38%

Stage of strategies for National Rabies Elimination & DPM

- Complete: 72%
- Developed: 10%
- Advanced: 8%
- Beginning: 10%

National Coordination
National Coordination

- Inadequate inter-sectoral coordination between livestock and wildlife authorities
- Poor technical and institutional coordination between the organisations, networks, private partners and government stakeholders
- Limited Cross-boundary linkages and collaborations.
- 38% CVOs said YES and 62% said NO to country’s laws providing a robust institutional framework for NRE and DPM
- 72% NRE is at formative stages; NRE advanced (Uganda, Kenya, Algeria, Morocco); NRE developed Eritrea, Tanzania, Rwanda, Tunisia)
- 54% CVOs country’s rabies control laws and animal welfare laws (namely, dog ownership regulations, breeding, owning, selling, disposal, and registration) LACK strong institutional integration for OH rabies coordination.
- 18% countries have specific rabies laws and regulations providing legal basis for rabies activities (Morocco, Zimbabwe, Uganda, Mali, Algeria, Kenya and Tanzania).
- Most Countries have Zoonotic Contingency plans as building block. BUT Togo, Liby, Djibouti NO contingency plans.
- 11 countries have rabies plans
Quality of the SARE planning, 18 CVOs done SARE

<table>
<thead>
<tr>
<th>Category</th>
<th>Very poor</th>
<th>Poor</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Equipment</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>DPM</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Surveillance and Monitoring</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Education and Awareness</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Vaccinations</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

Legend:
- Very poor
- Poor
- Satisfactory
- Good
- Very good
Rabies Budgets

Trend in annual rabies budget between 2015 and 2021, (n=13)

Rabies budgets compared to zoonotic diseases

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>74%</td>
<td>12%</td>
<td>62%</td>
<td>69%</td>
<td>64%</td>
<td>58%</td>
<td>69%</td>
</tr>
<tr>
<td>Program Coordination</td>
<td>4%</td>
<td>10%</td>
<td>6%</td>
<td>10%</td>
<td>13%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Tools Development</td>
<td>69%</td>
<td>13%</td>
<td>12%</td>
<td>10%</td>
<td>20%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>Early Warning Systems</td>
<td>70%</td>
<td>8%</td>
<td>12%</td>
<td>8%</td>
<td>15%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Community Sensitization</td>
<td>64%</td>
<td>15%</td>
<td>13%</td>
<td>5%</td>
<td>18%</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Equipment</td>
<td>69%</td>
<td>13%</td>
<td>5%</td>
<td>20%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>Technical Training</td>
<td>58%</td>
<td>15%</td>
<td>6%</td>
<td>21%</td>
<td>18%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>School Training</td>
<td>67%</td>
<td>15%</td>
<td>6%</td>
<td>21%</td>
<td>18%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Lab Support</td>
<td>64%</td>
<td>13%</td>
<td>20%</td>
<td>32%</td>
<td>26%</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Disease Surveillance</td>
<td>69%</td>
<td>8%</td>
<td>13%</td>
<td>26%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Vaccines</td>
<td>62%</td>
<td>10%</td>
<td>6%</td>
<td>18%</td>
<td>22%</td>
<td>22%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Legend:
- Below zoonotic budget
- Same level
- Above zoonotic budget
- No budget/ Not known
Gaps in current Rabies Elimination Activities

- Lack of funds: 62%
- Lack of awareness: 51%
- Poor dog population management: 26%
- Inadequate legislation: 26%
- Lack of coordination: 23%
- Lack of vaccines: 21%
- Lack of data on dog population: 18%
- Inadequate laboratory testing capacity: 15%
- Lack of logistics support: 15%
- Poor reporting: 15%
- Inadequate human resources: 13%
CVOs ranked recommendation (National Level)

- Awareness Creation: 54%
- Vaccination & Vaccination Campaigns: 38%
- Personnel Training & Capacity Building: 38%
- Legislation: 33%
- Budget Support: 31%
- Surveillance: 28%
- Strategy Development & Implementation: 23%
- Implement Dog Population Management: 23%
- Education/Rabies Program in Schools: 21%
- Laboratory Support & Strengthening: 21%
- Public Sensitization: 18%
- Accessible to Affordable Vaccines: 18%
- Dog Population Census/Survey: 13%
### CVOs ranked recommendations (Continental Level)

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training &amp; Capacity Building</td>
<td>21%</td>
</tr>
<tr>
<td>Elimination &amp; Control Strategy</td>
<td>18%</td>
</tr>
<tr>
<td>Vaccines &amp; Serum Bank</td>
<td>18%</td>
</tr>
<tr>
<td>Coordination Implementation &amp; Reinforcement</td>
<td>18%</td>
</tr>
<tr>
<td>Avail Funding &amp; Resources</td>
<td>15%</td>
</tr>
<tr>
<td>Information &amp; Data Sharing</td>
<td>15%</td>
</tr>
<tr>
<td>Monitoring</td>
<td>13%</td>
</tr>
<tr>
<td>Evaluation</td>
<td>13%</td>
</tr>
<tr>
<td>Vaccination &amp; Vaccination Campaign</td>
<td>10%</td>
</tr>
<tr>
<td>Awareness</td>
<td>10%</td>
</tr>
<tr>
<td>Legislations</td>
<td>10%</td>
</tr>
<tr>
<td>Laboratory Support</td>
<td>10%</td>
</tr>
<tr>
<td>Availability of Vaccines</td>
<td>8%</td>
</tr>
<tr>
<td>Harmonisation of Legislation</td>
<td>8%</td>
</tr>
<tr>
<td>Experience Sharing</td>
<td>8%</td>
</tr>
<tr>
<td>Improve &amp; Implement DPM</td>
<td>8%</td>
</tr>
<tr>
<td>Rabies Program in Schools</td>
<td>8%</td>
</tr>
<tr>
<td>Vaccines Accessibility</td>
<td>8%</td>
</tr>
<tr>
<td>Manufacturing Vaccines</td>
<td>8%</td>
</tr>
</tbody>
</table>

**Providing Leadership in the Development of Animal Resources in Africa (AU-IBAR)**
Study Recommendations

- **Political Advocacy**: Increase Zoonotic Budgets
- **Continental & National Rabies Elimination Strategies**: Rabies specific Regulations to clarify roles & responsibilities between OH actors
- **Ring Fence funding for rabies elimination**
- **Training & Education**: Gender disaggregated and vulnerability data
- **Monitoring & Surveillance**: Geo-referenced; Species-specific Animal Census
- **Georeferenced; Species-specific Animal Census**
- **Research**
- **Coordination**
- **Vaccination**: Dogs in Transit Hunting Dogs
- **Cross-border surveillance & coordination**
- **PrEP & PEP**
- **Dog Population Management**
- **Wildlife**
- **Laboratory mapping & reagents**
- **Rabies Awareness**

**Providing leadership in the Development of Animal Resources in Africa**
Institutional Policy

1. Develop a continental rabies elimination strategy.
2. Support national rabies control and elimination strategies.
3. Regional and continental bodies provide technical expertise, enhance coordination, improve leadership for NRE strategies.
4. Rabies protocols included in transboundary disease management at the national, regional and continental levels NOT lumped with other zoonotic diseases.
5. National level, the relevant public bodies should develop regulations that assign specific roles and responsibilities especially inter-ministerial and inter-departmental coordination in the reporting, information sharing, monitoring and surveillance of rabies elimination strategies.
6. Improve coordination of national One Health platforms by clarifying the responsibilities of non-state actors.
Awareness Creation

1. Create awareness among the relevant parliamentary committees to provide budgetary support for the NRE.

2. Lobby governments and development partners to increase funding for sufficient supply of rabies vaccine for both dogs and front-line workers.

3. Create community awareness on dog population management - improving dog welfare, first aid to victims of dog bites, dog registration, fertility control and vaccination compliance.
Capacity Building

1. Strengthen the lobbying capacity of communities to demand that governments increase funding for rabies elimination.

2. Strengthen the capacity of border public health and security personnel to effectively undertake rabies cross-border monitoring and enforcement for dogs-in-transit.

3. Training of veterinary technicians in mass dog vaccinations, dog population management surveillance and reporting within the One Health system.

4. Training of human health technicians in dog bites management, monitoring, surveillance and reporting within the One Health system.

5. Map out the national laboratories, select some laboratories as the main rabies diagnostic and testing center's, equip them with cost effective diagnostic tools and train laboratory technicians in rabies diagnostics.
6. Studies on dog ecology and epidemiology to guide evidence-based rabies elimination programming, monitoring and surveillance.

7. Undertake geo-referenced and species specific census for livestock, dogs and wildlife for CRE and NRE.

8. Incorporate gender-based programming to achieve over 70% coverage and that no dogs are left behind. Example: during mass vaccinations, dogs of vulnerable people may be missed out because they are unable to access the service. Furthermore, the interaction between gender and rabies is not taken into account when planning rabies elimination programs.

Mobilize Resources

1. Governments should increase animal health vote to livestock budget - zoonotic disease- ring fence rabies elimination budget.

2. Development partners to mobilize resources to support the Continental, Regional and National Rabies Elimination Strategy.
Dr Emily Kavosa Mudoga BVM, MPH
Email: kavosamudoga@actionforprotectionofanimalsafrica.org

For AU-IBAR
Dr Hiver Boussini
Email: Hiver.Boussini@au-ibar.org