

# Country experience of Namibia in Rabies surveillance, data collection, and reporting



## 2<sup>nd</sup> Meeting of the Eastern Africa Sub-Regional Network for Rabies Control

10 – 12 October 2023 Addis Ababa, Ethiopia

TENZIN TENZIN  
WOAH, Gaborone  
E-mail: [t.tenzin@woah.org](mailto:t.tenzin@woah.org)



# WORKING TOWARDS RABIES FREE NAMIBIA

 <p>Rabies kills around <b>59,000</b> people every year in the world</p>	 <p>Dogs are the main source of human rabies <b>DEATHS</b></p>	 <p><b>99%</b> of human rabies deaths originate from dog bites</p>	 <p><b>VACCINATE</b> your dogs every year to Eliminate <b>RABIES</b></p>	 <p>Ensure <b>RESPONSIBLE</b> management of your dog to help prevent the spread of rabies</p>	 <p>Wash the animal bite wound thoroughly with soap and running water for at least 15 minutes. <b>IMMEDIATELY</b> visit the nearest hospital for medical advice.</p>
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Let's **COLLABORATE** and **WORK TOGETHER** to bring an **END TO RABIES**



RABIES ENDS HERE WITH ME




- 2015: Developed a National Strategy for Rabies Control
- 2021: WOAH endorsed Namibia's NSP

**OIE** WORLD ORGANISATION FOR ANIMAL HEALTH  
Protecting animals, preserving our future


**OIE SG 88** Newly recognised Members having an OIE endorsed Official Control Programme for dog-mediated rabies

	<b>Namibia</b>
	<b>Philippines</b>





Republic of Namibia  
Ministry of Agriculture Water and Forestry  
Directorate of Veterinary Services



**Rabies Control Strategy**

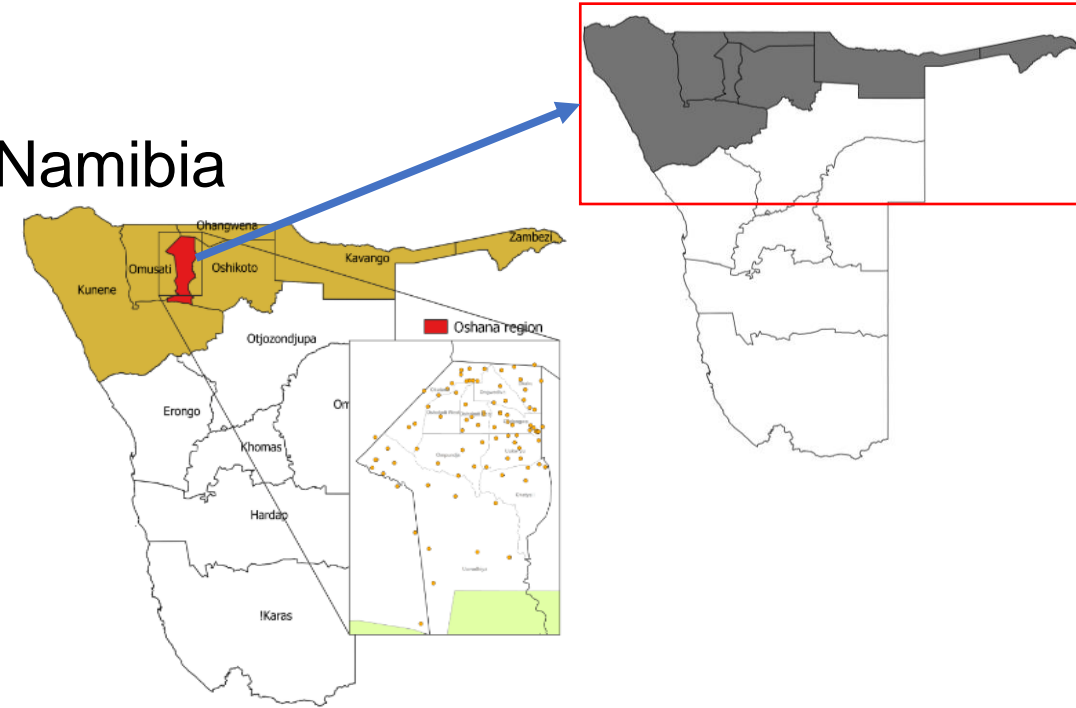
Compiled by the Directorate of Veterinary Services in Consultation with the Ministry of Health and Social Services and the Veterinary Association of Namibia

March 2015



# Implementation of a rabies elimination Project in Namibia

- Pilot project implemented in Oshana region
  - First campaign started on 2 May 2016
  - Roll out in the entire 8 NCA regions in 2017
  - Project funded by German government and Namibia



- NCA - large area - 263,000 sq km
- Estimated dog pop - 272,000

Technical support provided by:







Capacity building: training of the vaccinators





Rabies awareness education to the school children



# Dog rabies vaccination programme and data management

## 1) Mass Dog Vaccination campaign at central point

- school holidays
- Cover in the morning and afternoon vaccination points



## 2) Integration of dog vaccination with CBPP and FMD vaccination in cattle at the crush pens

- Cover the remote areas in the NCA

## 3) Regular vax at the veterinary centres



## Toolbox

Images: On

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Rabies – The Global Challenge

Rabies Roadmap and Resources

Events and Courses

News and Case Studies

About

The Rabies Roadmap

Resources

### Resources

This is a carefully selected collection of tools, research and other resources for anyone interested in rabies control and elimination. You can browse or use the dropdown menus to select the type of resources you are looking for. Please contact us if you have suggestions or questions about any of the materials.

### Tools

From vaccination to education, we present a comprehensive online toolbox of guides, apps and other resources to help you plan, prioritise and implement your rabies control programmes.

### Publications and Documents

Research papers, official documents, and articles.

### Courses & Training

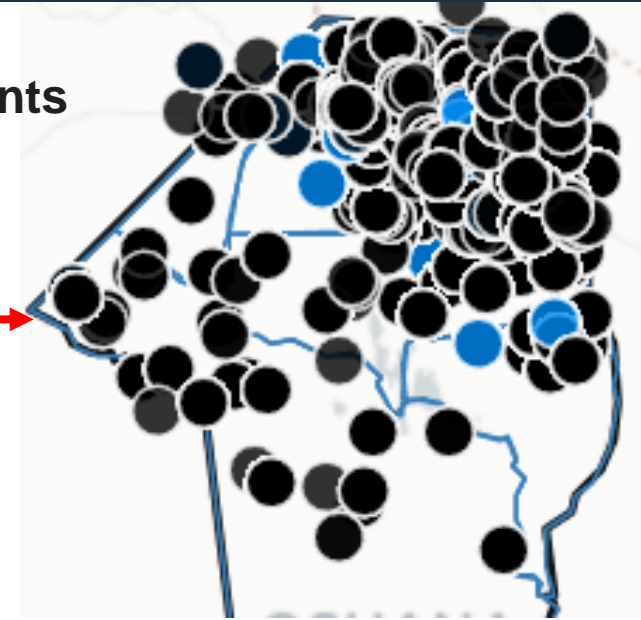
Want to learn more about rabies? Here are some courses to help you.

### Media Library

<https://www.unitedagainstrabies.org/toolbox>



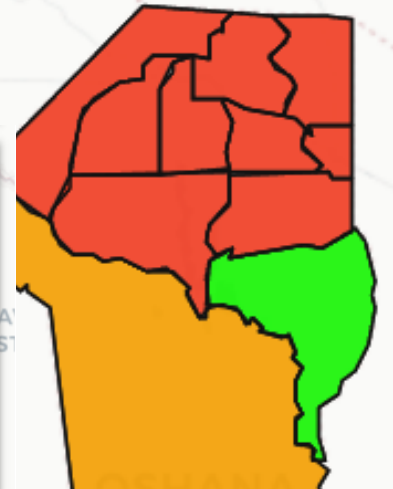
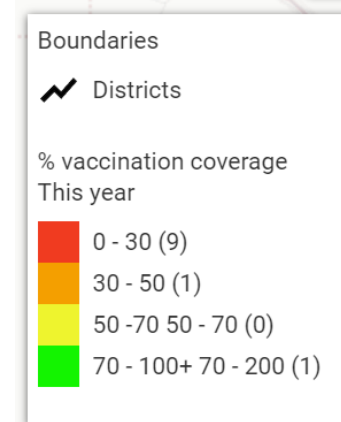
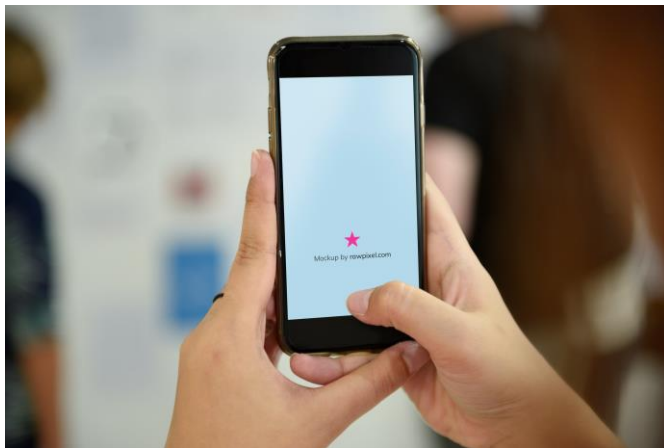
# Dog vaccination data management – Mobile technology



Vaccination points

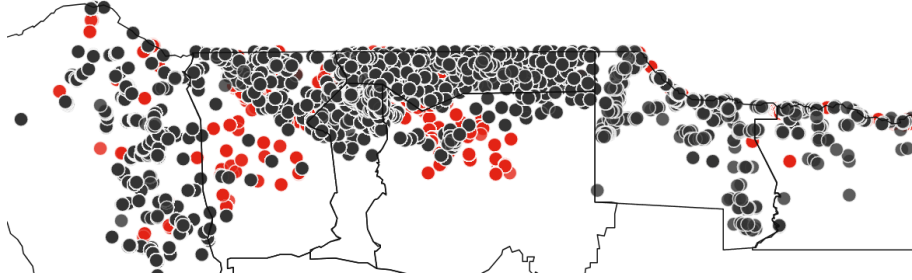


Calculate vaccination coverage





# Benefits of tracking dog vaccination using mobile technology

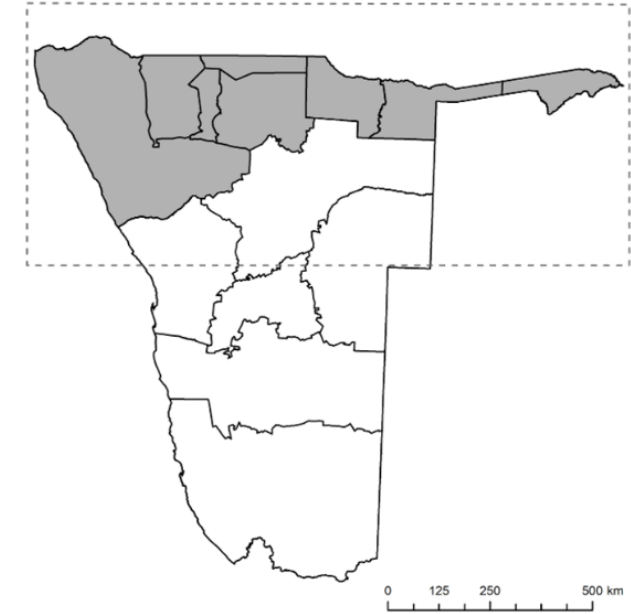


- Real time visualisation and tracking of the vaccination location
- Estimate vaccination coverage
- Sex of dogs – comparatively more males than females
- Age of dogs – more young dogs (<1 year) than adults
- Date and time of vaccination
- Less paper work



# Dog population data – KAP survey in the NCA

- Interviewed 3726 HHs locations in the survey area
  - used mobile app WVS App (Mission Rabies)
- 67% HH own dogs across eight regions
- Human/dog ratio: 5.45 (1 dog for every 5.45 people)

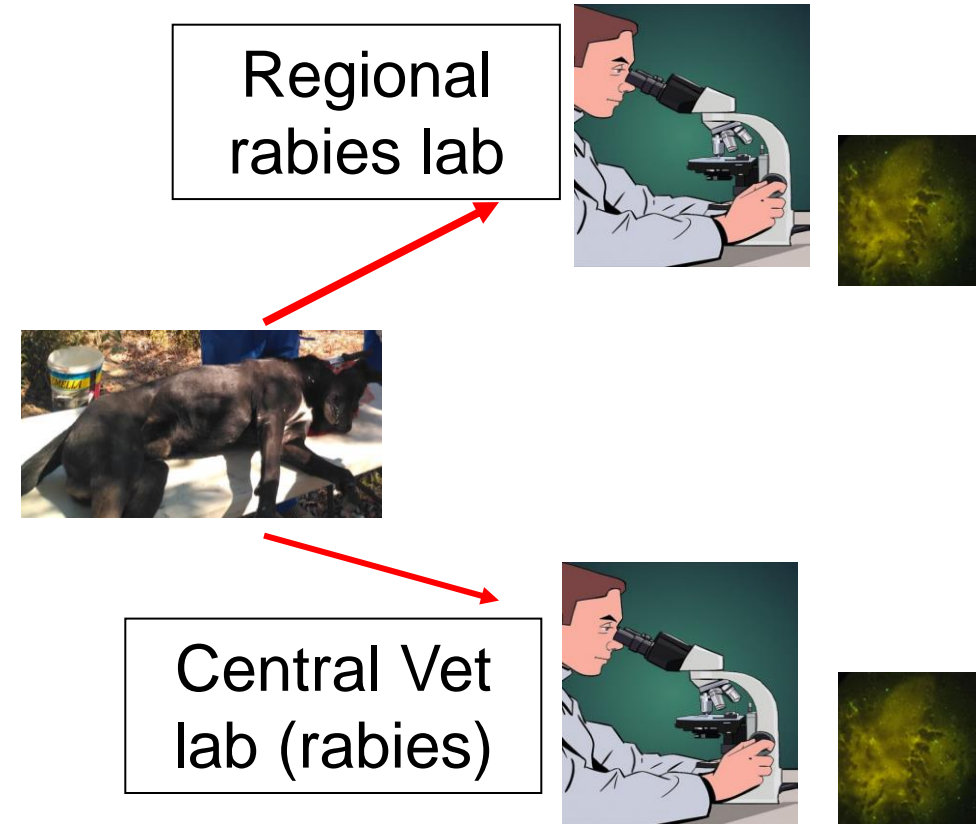




# Rabies surveillance

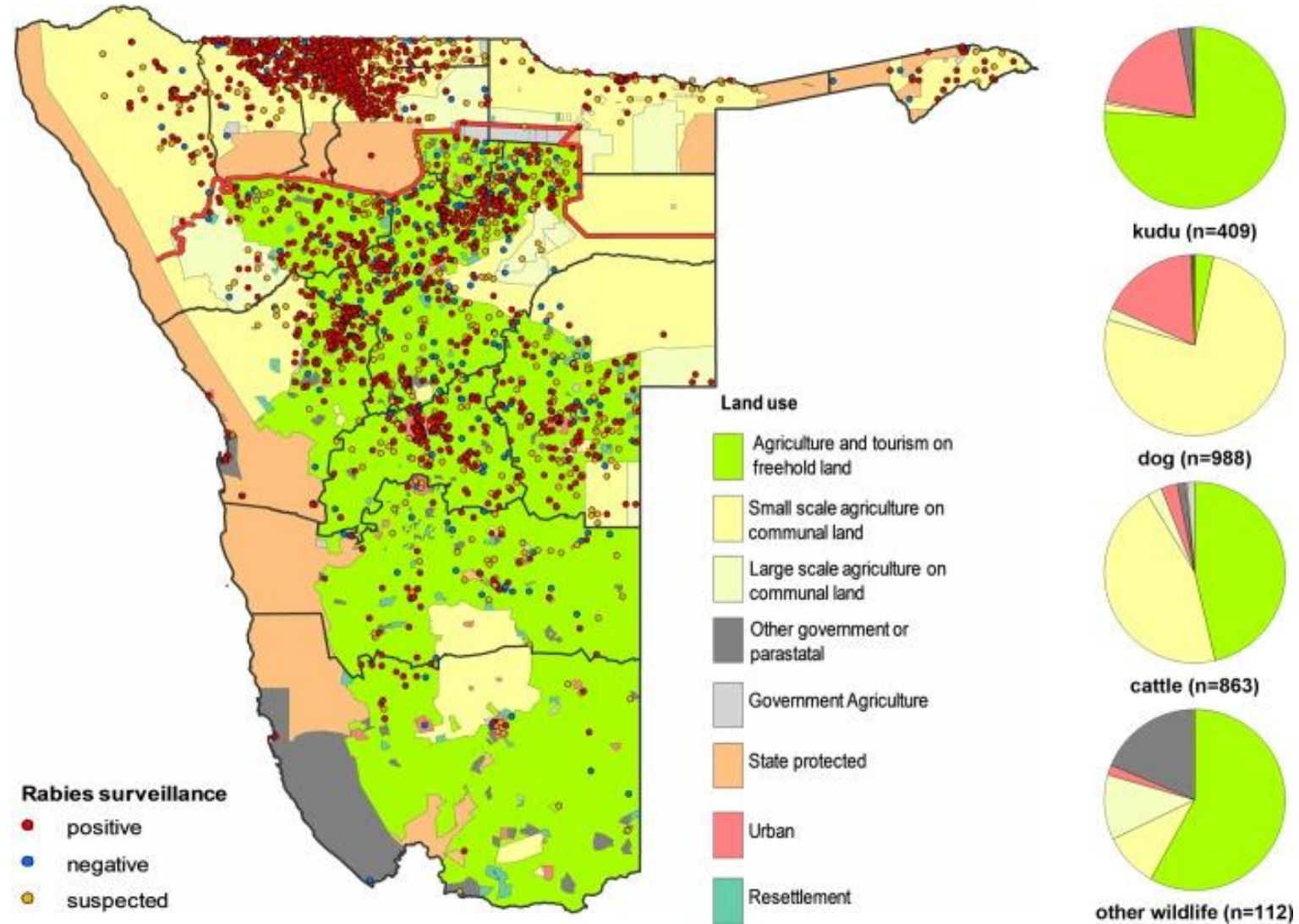
- Namibia has a fairly robust surveillance system

- Rabies suspect animal head – farmers submit to the vet centres or directly to the lab
- Veterinary team collect samples and submit it to the lab
- Samples are carried by courier service – NAMpost
- Very fast TAT - results communicated within 24 hrs



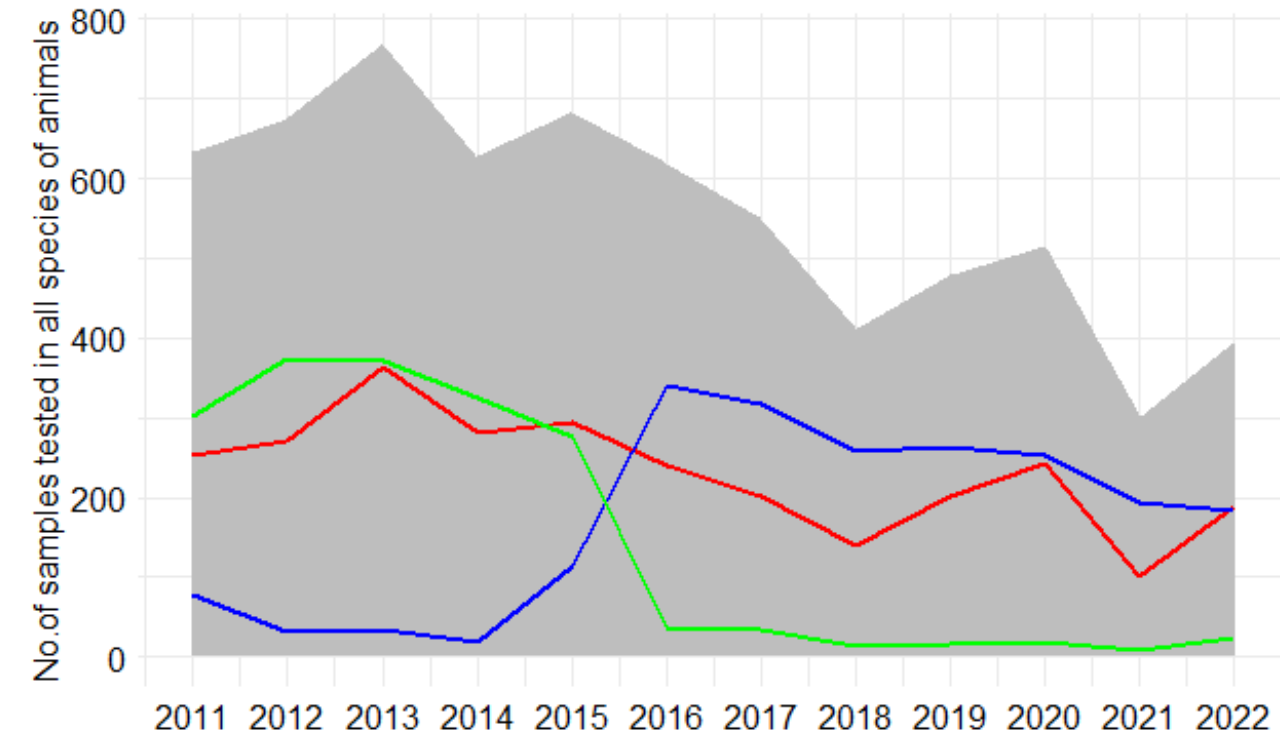


# Rabies surveillance in animals - all species of animals and wildlife



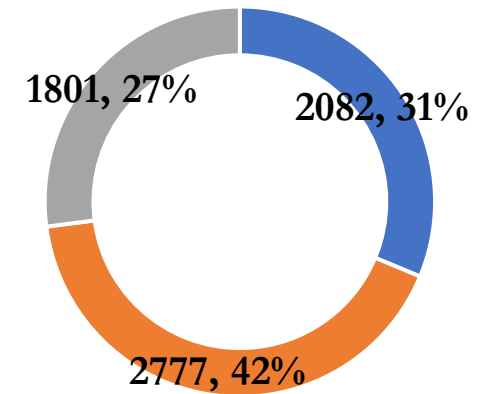
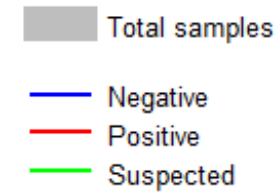
*Hikufe et al., 2019. Ecology and epidemiology of rabies in humans, domestic animals and wildlife in Namibia, 2011-2017. PloS NTD*

# Rabies surveillance in animals – all species of animals & wildlife



Total samples tested for rabies in animals (2011-2022)

Legend

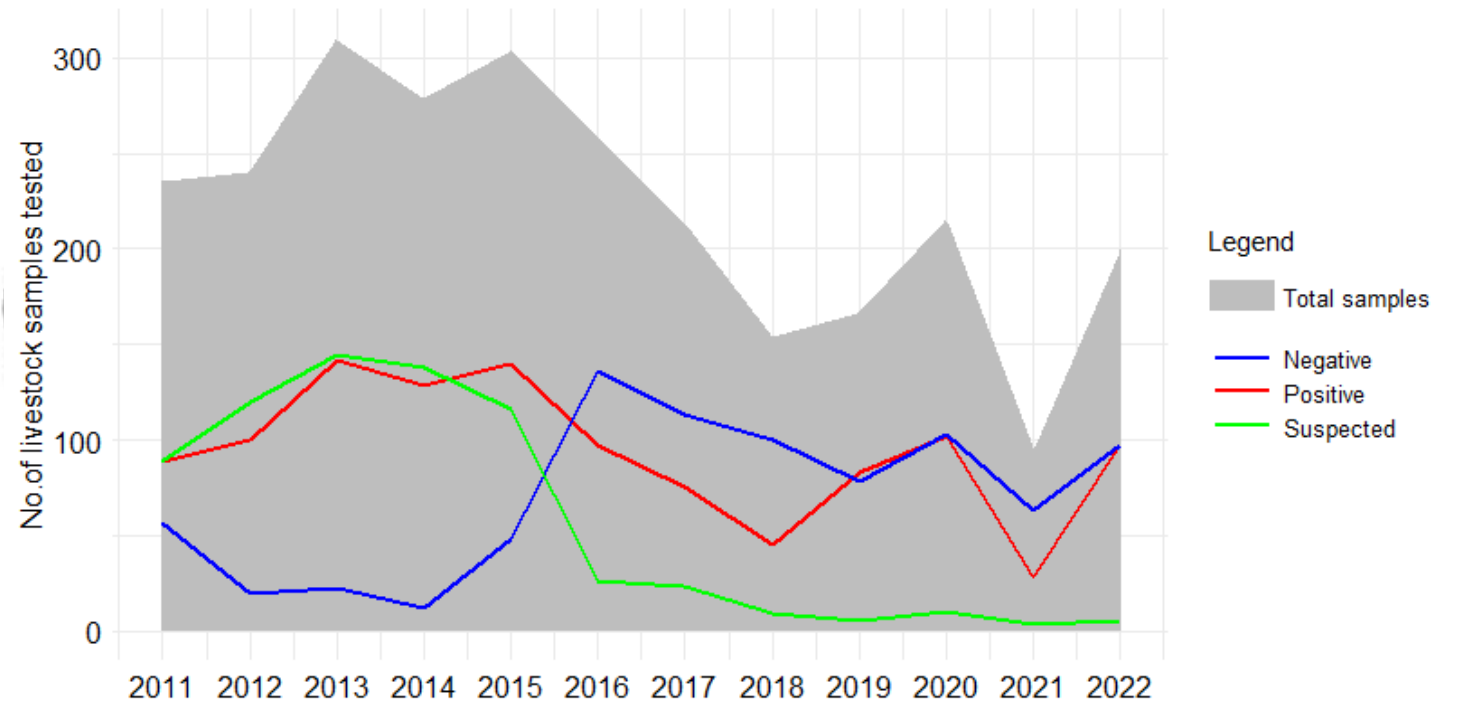
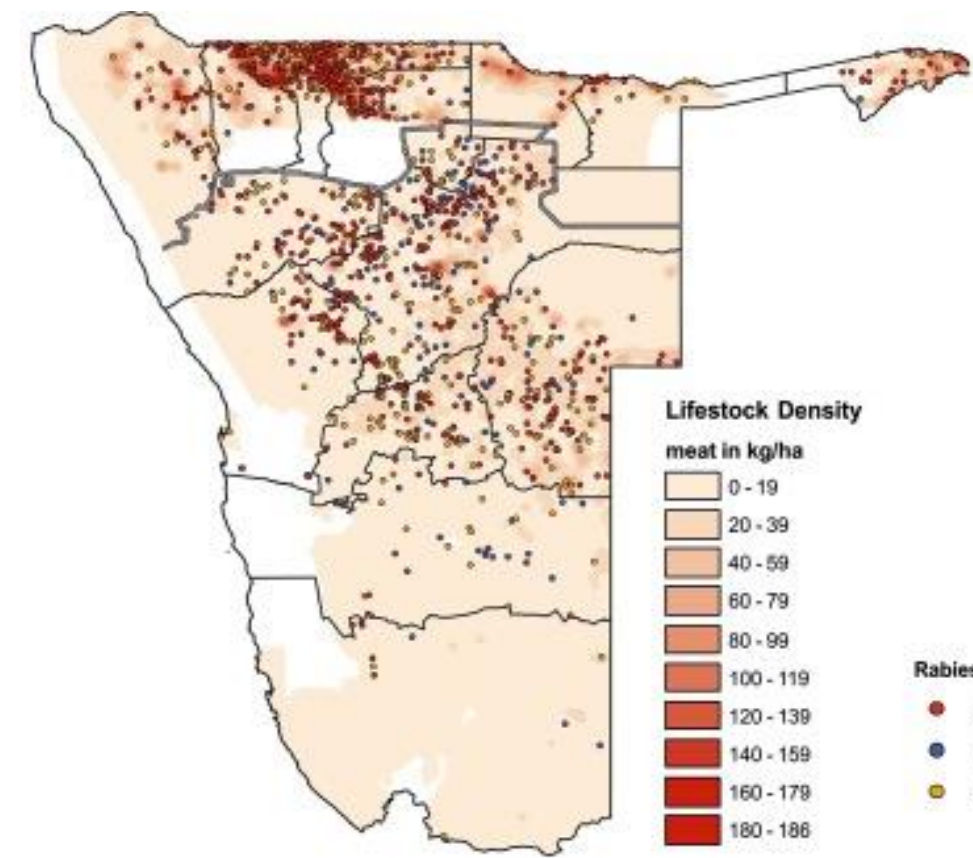


■ negative ■ positive ■ suspected

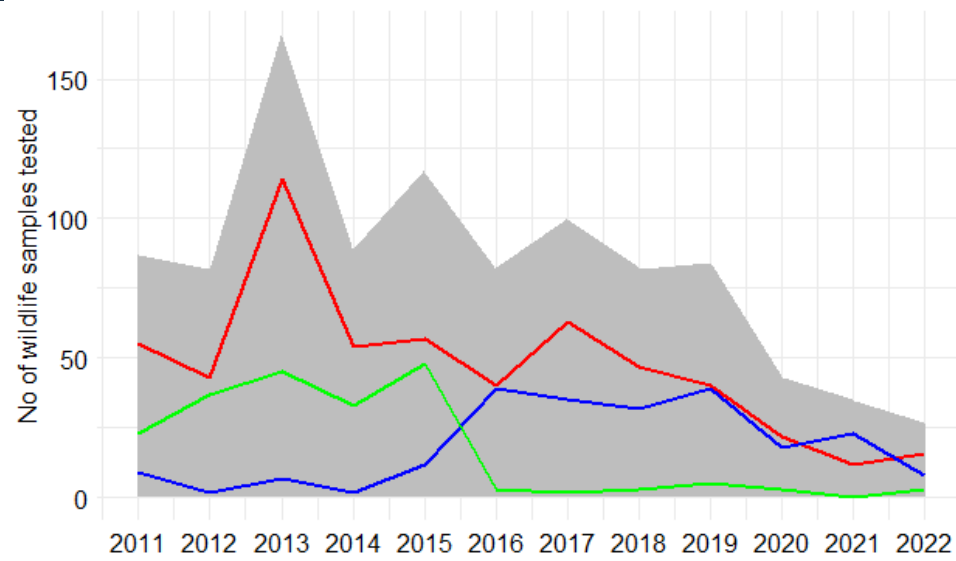
- 5000 samples tested in 12 years
- Average of 400 samples tested every year (range 300 - 600 samples)



# Rabies surveillance in livestock



# Rabies surveillance in wildlife

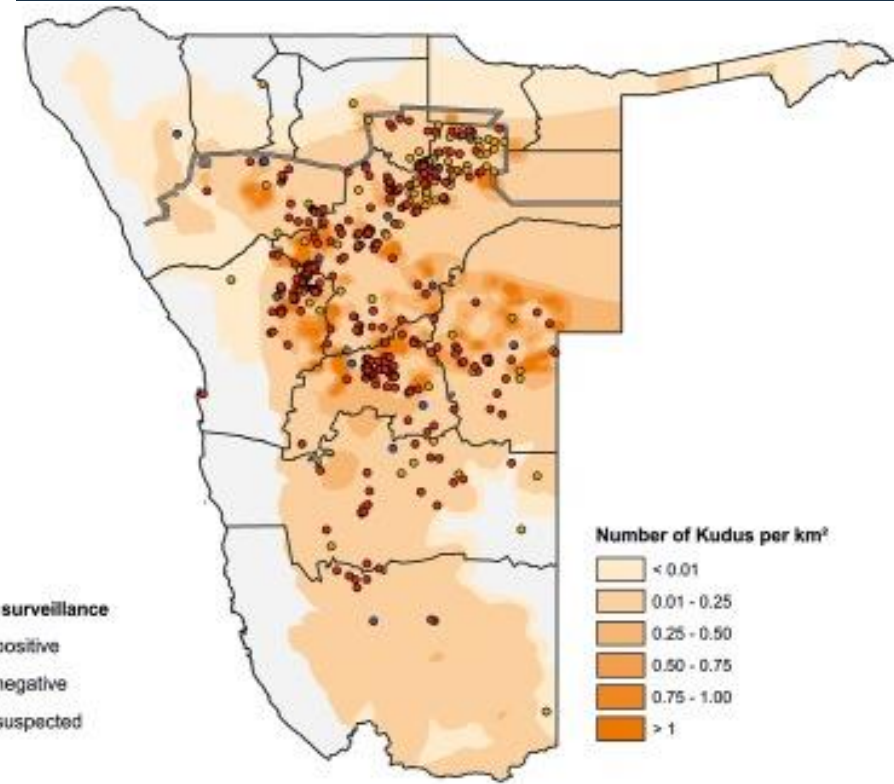


## Legend

- Total samples
- Negative
- Positive
- Suspected

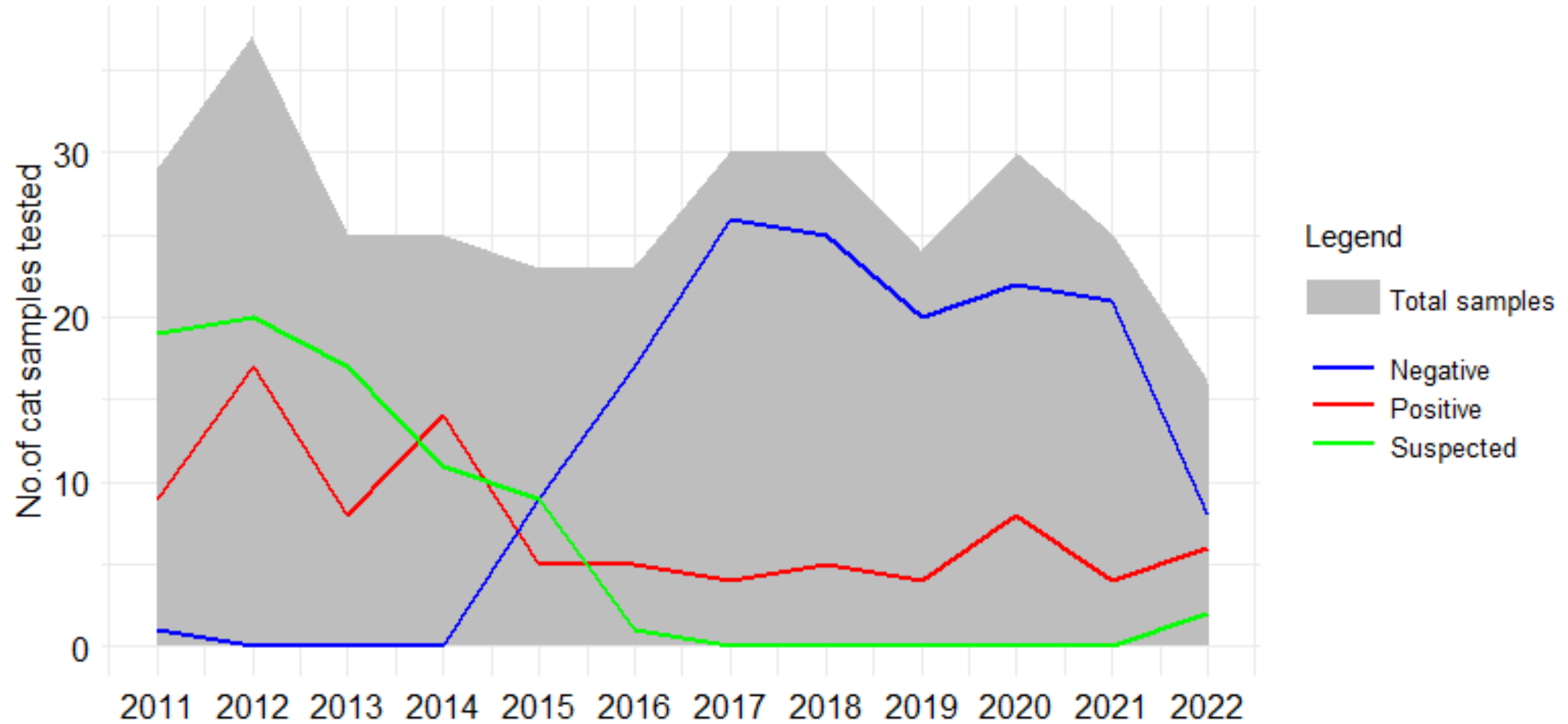
## Rabies surveillance

- positive
- negative
- suspected

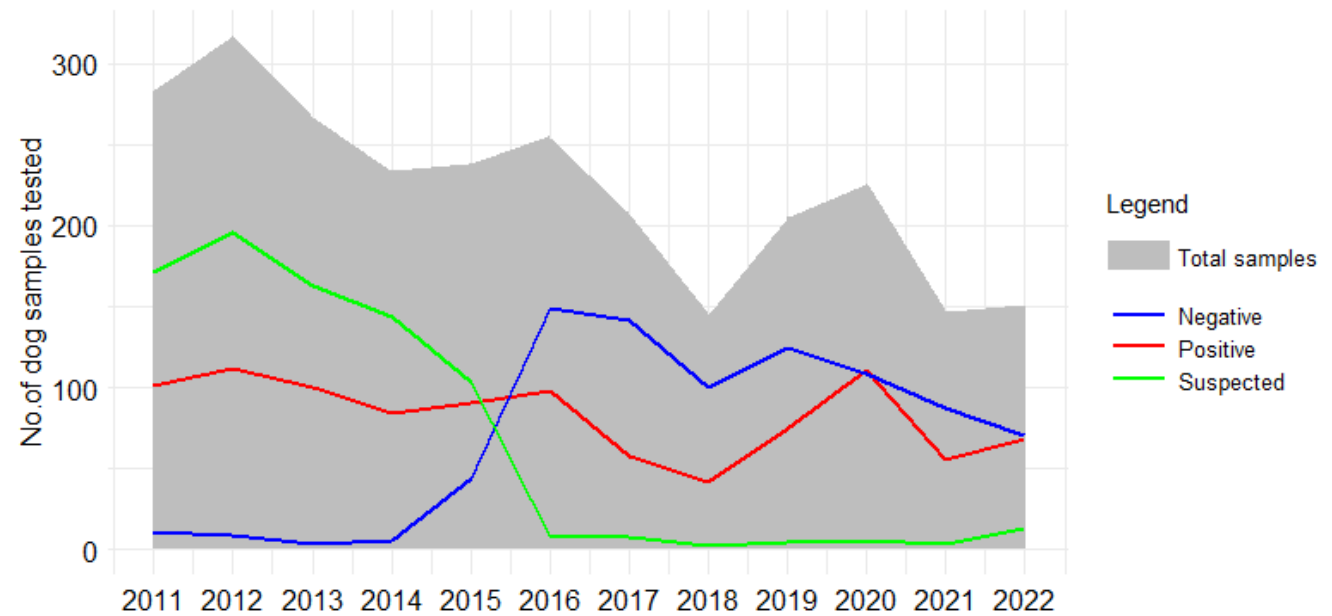
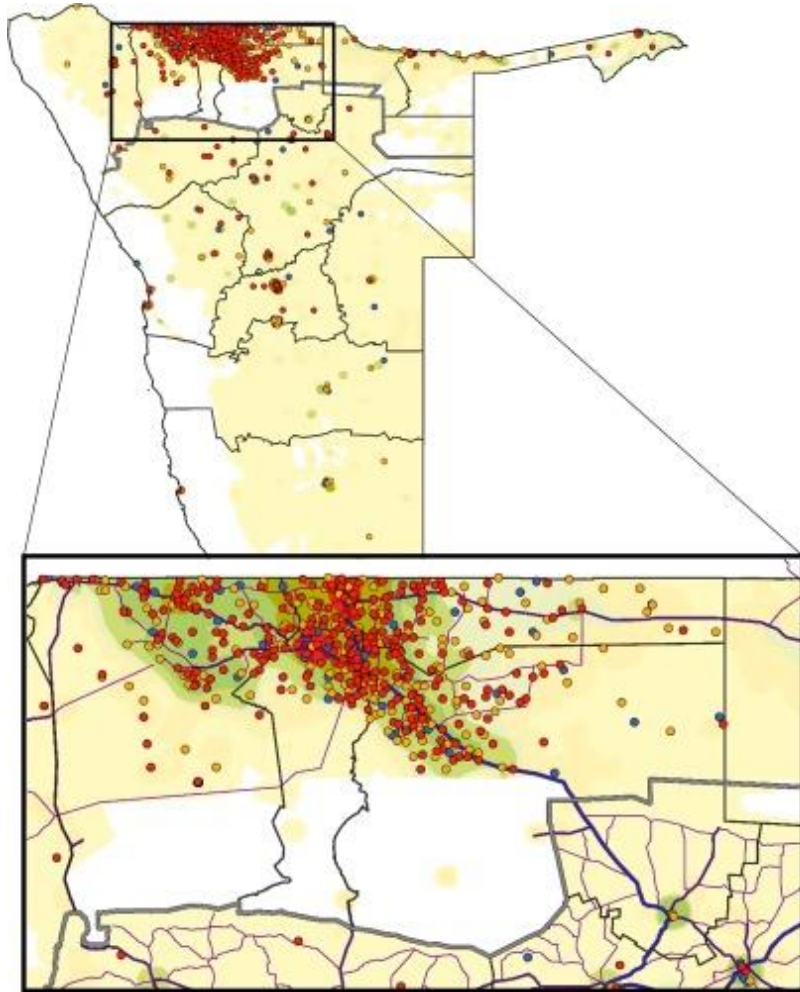




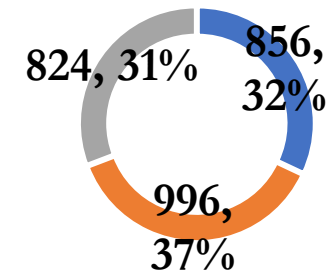
# Rabies surveillance in Namibia – cats



# Rabies surveillance in dogs



## Samples tested for rabies in dogs (2011-2022)

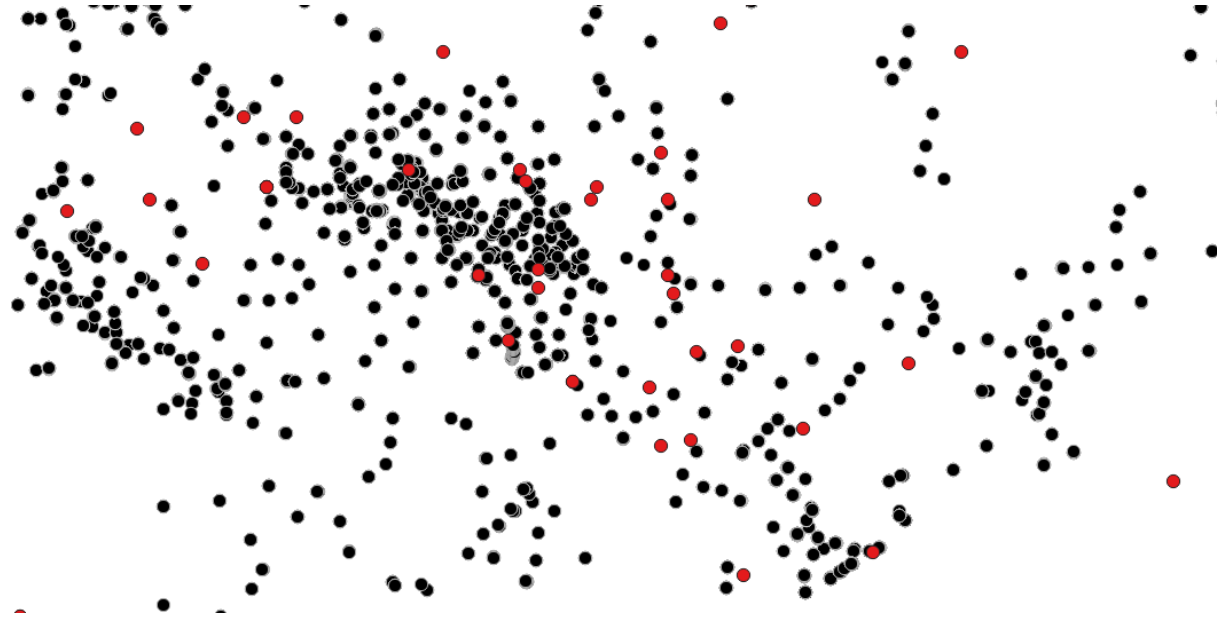


■ negative ■ positive ■ suspected

- 1852 samples tested (12 years)
- 155 samples every year (90-250 samples)



# How is rabies surveillance data used for decision making?



Red dots: rabies positive in dogs  
Black dots: dog vaccination points

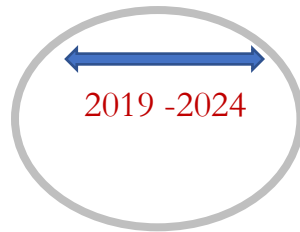
- Conduct risk-based mass dog vaccination campaign in rabies hotspot areas
- Conduct ring vaccination in outbreak areas

# Rabies laboratory twinning project

- WOAH Rabies Laboratory Twinning Project



Parent laboratory

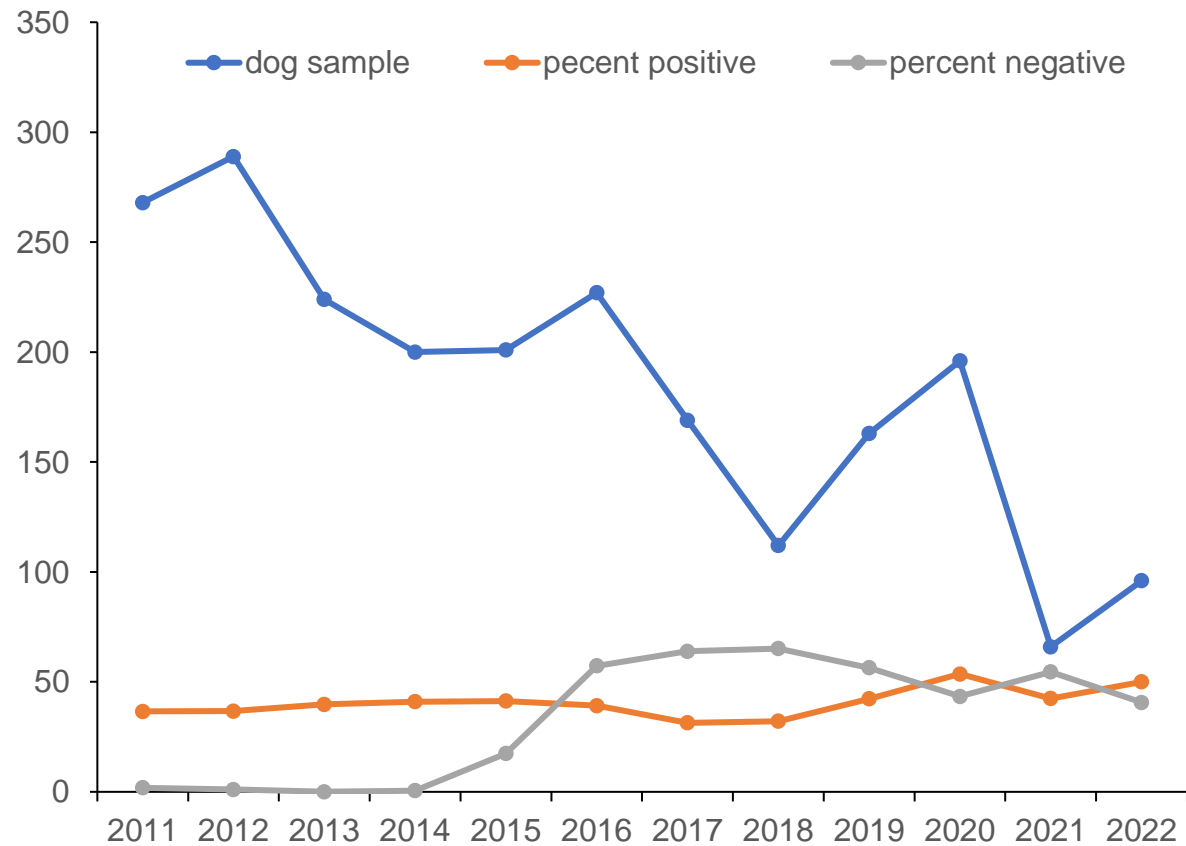


Candidate laboratory, Namibia

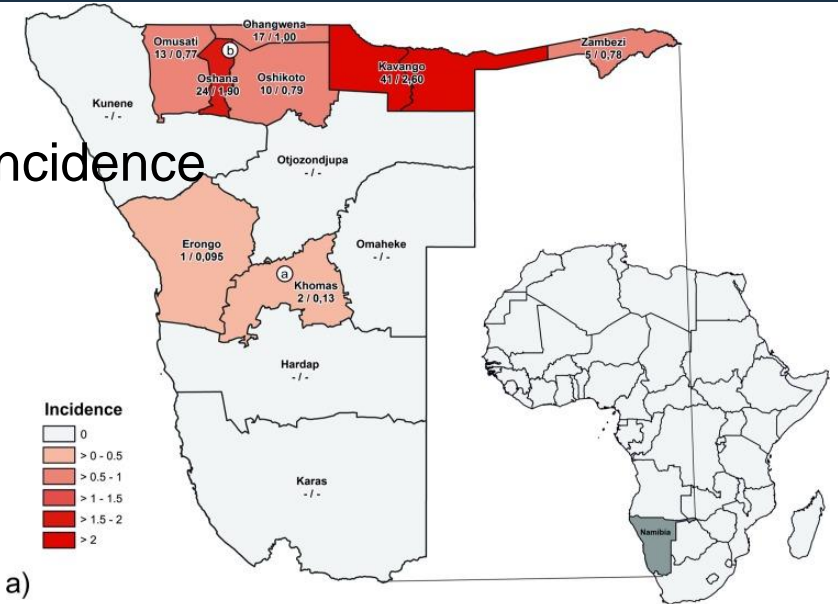
*“Strengthening the Namibian Central Veterinary Laboratory in rabies diagnostics, control and research”*



# Impact of rabies control programme in Namibia - NCA



## Human rabies incidence



- Drastic reduction of human rabies incidence
- Strengthen One Health collaboration
- Strengthen veterinary services capacity

*Hikufe et al, 2019. PloSNTD*  
*Athingo et al, 2020*

# Sharing of rabies information

RESEARCH ARTICLE

## Ecology and epidemiology of rabies in humans, domestic animals and wildlife in Namibia, 2011-2017

Emmanuel H. Hikufe<sup>1</sup>, Conrad M. Freuling<sup>2</sup>, Rauna Athingo<sup>3</sup>, Albertina Shilongo<sup>1</sup>, Emmy-Else Ndevaetela<sup>4</sup>, Maria Helao<sup>4</sup>, Mathews Shiindi<sup>4</sup>, Rainer Hassel<sup>5</sup>, Alec Bishi<sup>6</sup>, Siegfried Khaiseb<sup>6</sup>, Juliet Kabajani<sup>6</sup>, Jolandie van der Westhuizen<sup>6</sup>, Gregorio Torres<sup>7</sup>, Andrea Britton<sup>8</sup>, Moetapele Letshwenyo<sup>9</sup>, Karin Schwabenbauer<sup>9</sup>, Thomas C. Mettenleiter<sup>2</sup>, Nicolai Denzin<sup>10</sup>, Susanne Amler<sup>10</sup>, Franz J. Conraths<sup>10</sup>, Thomas Müller<sup>2</sup>, Adrianatus Maseke<sup>1</sup>



One Health  
Volume 16, June 2023, 100562



Article

## Fighting Dog-Mediated Rabies in Namibia—Implementation of a Rabies Elimination Program in the Northern Communal Areas

Rauna Athingo<sup>1,4</sup>, Tenzin Tenzin<sup>2,4</sup>, Albertina Shilongo<sup>3</sup>, Emmanuel Hikufe<sup>3</sup>, Kenneth K. Shoombe<sup>1</sup>, Siegfried Khaiseb<sup>4</sup>, Jolandie van der Westhuizen<sup>4</sup>, Moetapele Letshwenyo<sup>2</sup>, Gregorio Torres<sup>5</sup>, Thomas C. Mettenleiter<sup>6</sup>, Conrad M. Freuling<sup>6</sup> and Thomas Müller<sup>6,\*</sup>



Communication

## From Field Tests to Molecular Tools—Evaluating Diagnostic Tests to Improve Rabies Surveillance in Namibia

Conrad M. Freuling<sup>1,\*</sup>, Jolandie van der Westhuizen<sup>2</sup>, Siegfried Khaiseb<sup>2</sup>, Tenzin Tenzin<sup>3</sup> and Thomas Müller<sup>1</sup>



### Fighting dog-mediated rabies in Namibia and Angola: progress and challenges



In the heart of Namibia's Northern Communal Areas (NCA), a pioneering battle is being fought against rabies. Here, veterinarians and their teams are leading the charge, utilising innovative...

RESEARCH ARTICLE

## Application of the GARC Data Logger—a custom-developed data collection device—to capture and monitor mass dog vaccination campaigns in Namibia

Rauna Athingo<sup>1,4</sup>, Tenzin Tenzin<sup>2,4</sup>, Andre Coetzer<sup>3,4</sup>, Emmanuel H. Hikufe<sup>5</sup>, Josephat Peter<sup>6</sup>, Laina Hango<sup>6</sup>, Tangeni Haimbodi<sup>7</sup>, Johannes Lipinge<sup>7</sup>, Frenada Haufiku<sup>8</sup>, Mattias Naunyang<sup>8</sup>, Magano Kephass<sup>9</sup>, Albertina Shilongo<sup>5</sup>, Kenneth K. Shoombe<sup>1</sup>, Siegfried Khaiseb<sup>10</sup>, Moetapele Letshwenyo<sup>2</sup>, Patricia Pozzetti<sup>11</sup>, Lorenz Nake<sup>11</sup>, Louis H. Nel<sup>3,4</sup>, Conrad M. Freuling<sup>12</sup>, Thomas Müller<sup>12</sup>, Gregorio Torres<sup>11</sup>



ORIGINAL RESEARCH  
published: 22 October 2021  
doi: 10.3389/fvets.2021.737250



## Immunogenicity of the Oral Rabies Vaccine Strain SPBN GASGAS in Dogs Under Field Settings in Namibia

Umberto Molini<sup>1</sup>, Rainer Hassel<sup>11</sup>, Steffen Ortmann<sup>5</sup>, Ad Vos<sup>2</sup>, Malaika Loschke<sup>1</sup>, Albertina Shilongo<sup>3</sup>, Conrad M. Freuling<sup>12</sup> and Thomas Müller<sup>12</sup>

<sup>1</sup> School of Veterinary Medicine, University of Namibia, Windhoek, Namibia, <sup>2</sup> Ceva Innovation Center, Ceva Santé Animale, Dessau-Roßlau, Germany, <sup>3</sup> Directorate of Veterinary Services, Ministry of Agriculture, Water and Land Reform, Windhoek, Namibia, <sup>4</sup> Institute of Molecular Virology and Cell Biology, Friedrich-Loeffler-Institut, WHO Collaborating Centre for Rabies Surveillance and Research, OIE Reference Laboratory for Rabies, Berlin, Germany

RESEARCH ARTICLE

## Oral rabies vaccination of dogs—Experiences from a field trial in Namibia

Conrad Martin Freuling<sup>1,4,\*</sup>, Frank Busch<sup>2,4</sup>, Adriaan Vos<sup>3</sup>, Steffen Ortmann<sup>5</sup>, Frederic Lohr<sup>4</sup>, Nehemia Hedimbi<sup>6</sup>, Josephat Peter<sup>6</sup>, Herman Adimba Nelson<sup>7</sup>, Kenneth Shoombe<sup>8</sup>, Albertina Shilongo<sup>9</sup>, Brighton Gorejena<sup>10</sup>, Lukas Kaholongo<sup>10</sup>, Siegfried Khaiseb<sup>11</sup>, Jolandie van der Westhuizen<sup>11</sup>, Klaas Dietze<sup>2</sup>, Gai Geurtze<sup>12</sup>, Thomas Müller<sup>1</sup>

< News and Case Studies

## Namibia's national plan for rabies elimination delivers benefit

By: United Against Rabies



# Country experience of Namibia in Rabies surveillance, data collection, and reporting



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E-mail: [t.tenzin@woah.org](mailto:t.tenzin@woah.org)



# Thank you!

Contact: [t.tenzin@woah.org](mailto:t.tenzin@woah.org)

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12, rue de Prony, 75017 Paris, France  
T. +33 (0)1 44 15 19 49  
F. +33 (0)1 42 67 09 87

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