World Organisation for Animal Health
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Country experience of Namibia in Rabies surveillance, data collection, and reporting

2nd Meeting of the Eastern Africa Sub-Regional Network for Rabies Control

10 – 12 October 2023 Addis Ababa, Ethiopia

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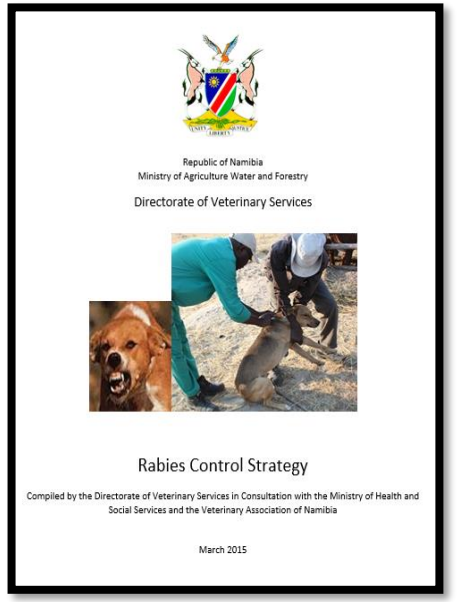
MINISTRY OF AGRICULTURE

PC-TAD

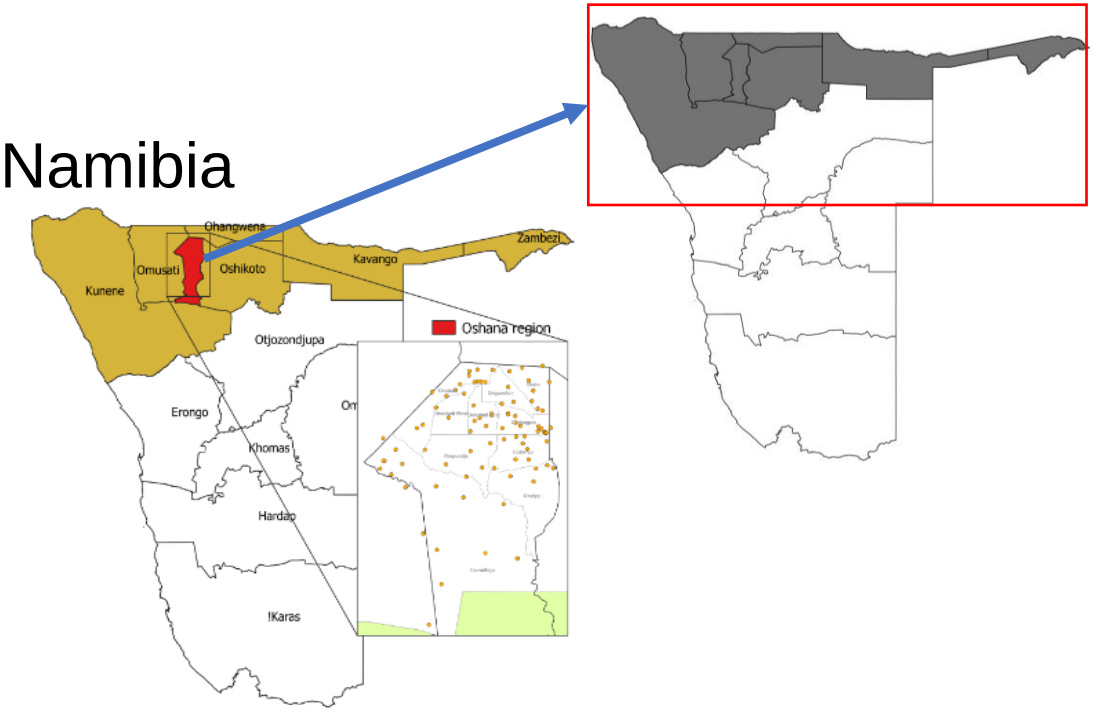
BMZ Federal Ministry for Economic Cooperation and Development

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



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
- Approx 1.2 million people
- Estimated dog pop - 272,000

Technical support provided by:

World Organisation for Animal Health
Founded as OIE

FRIEDRICH-LOEFFLER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Global Alliance for Rabies Control

Capacity building: training of the vaccinators

Rabies awareness education to the school children

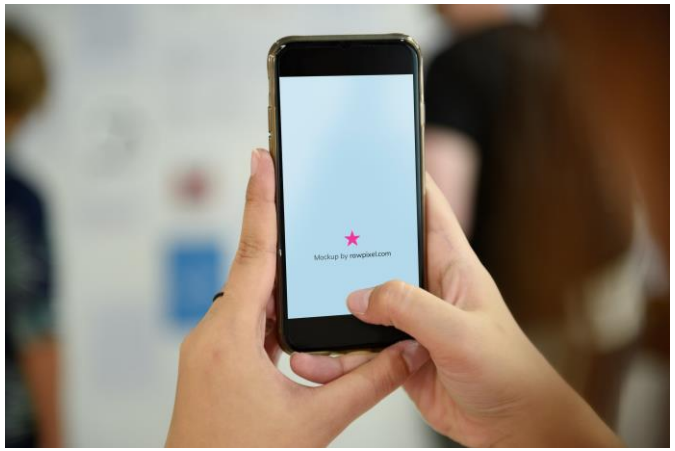
Dog rabies vaccination programme and data management

1) Mass Dog Vaccination campaign at central point
   - school holidays
   - morning and afternoon vaccination points

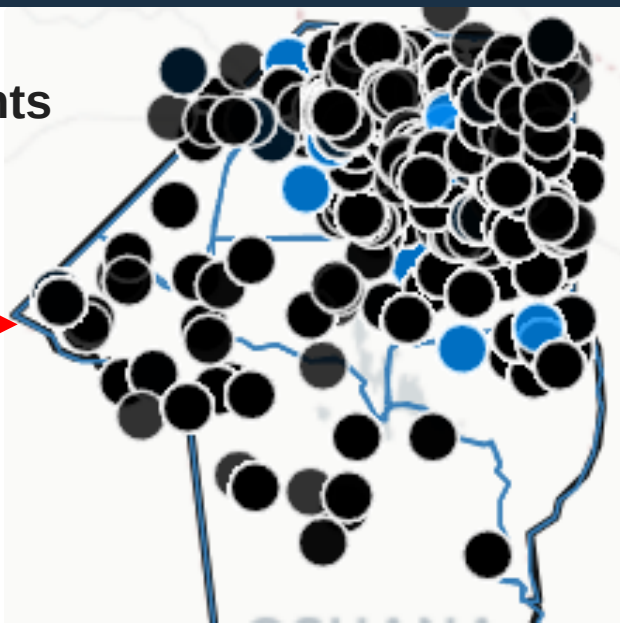
2) Integration of dog vaccination with CBPP and FMD vaccination in cattle at the crush pens
   - Cover the remote areas in the NCA

3) Regular vax at veterinary centres

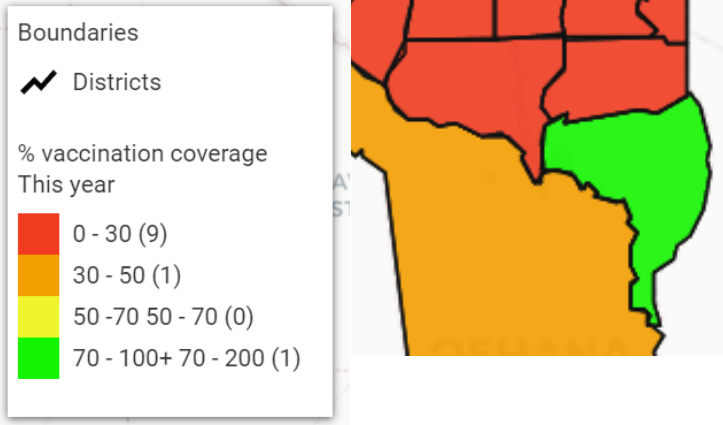
Dog vaccination data management – Mobile technology



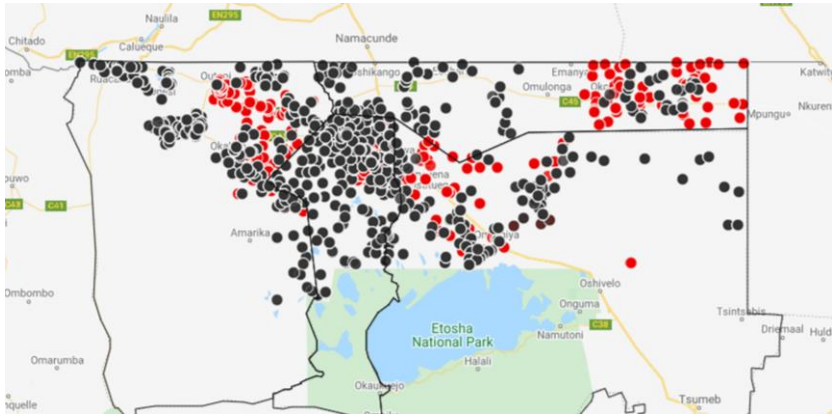
Vaccination points



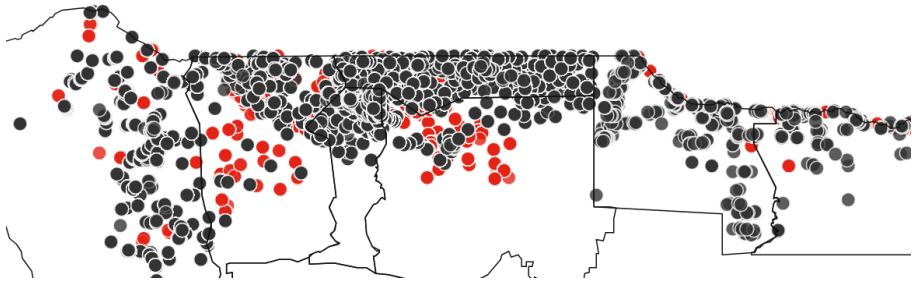
Calculate vaccination coverage



Benefits of tracking dog vaccination using mobile technology



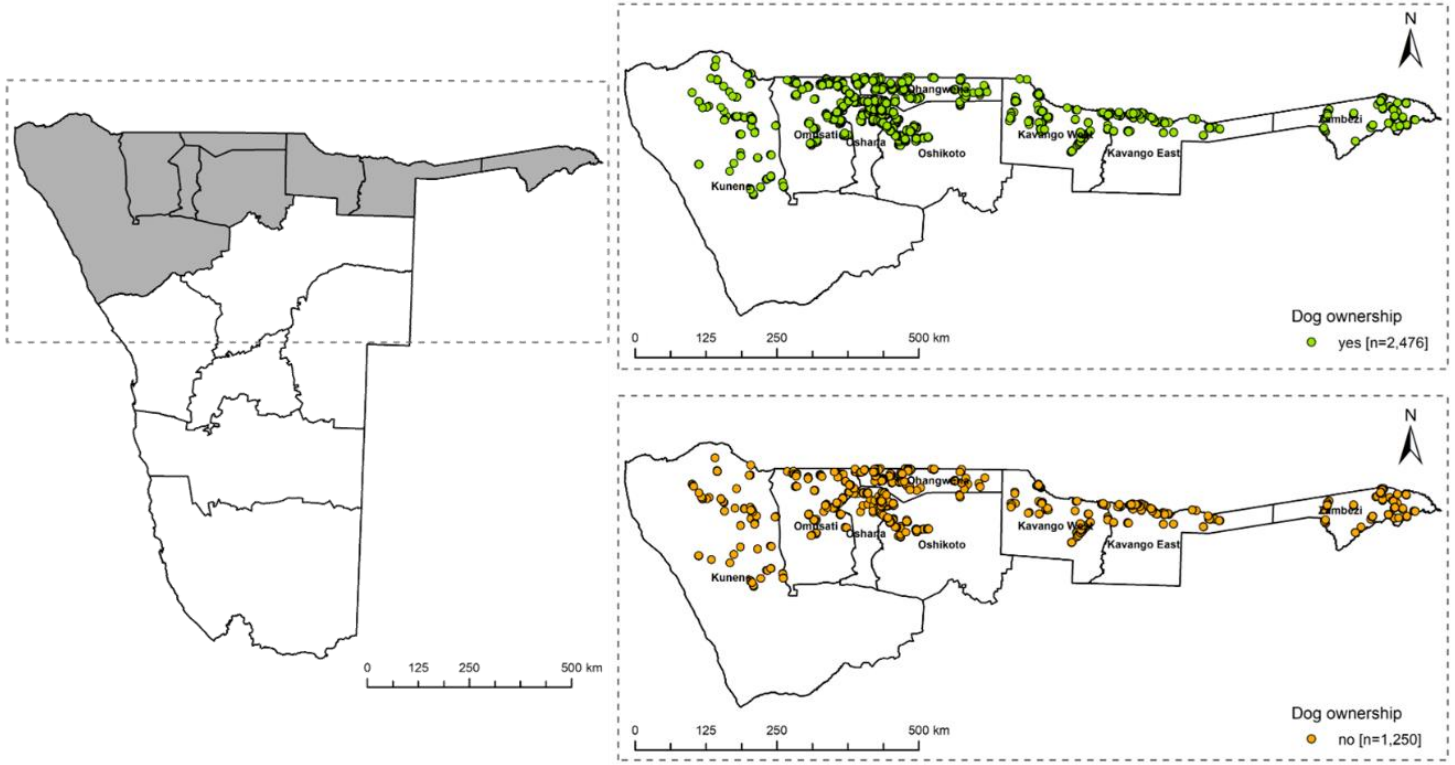
Red dots: 2019 vaccination
Black dots: 2020 vaccination

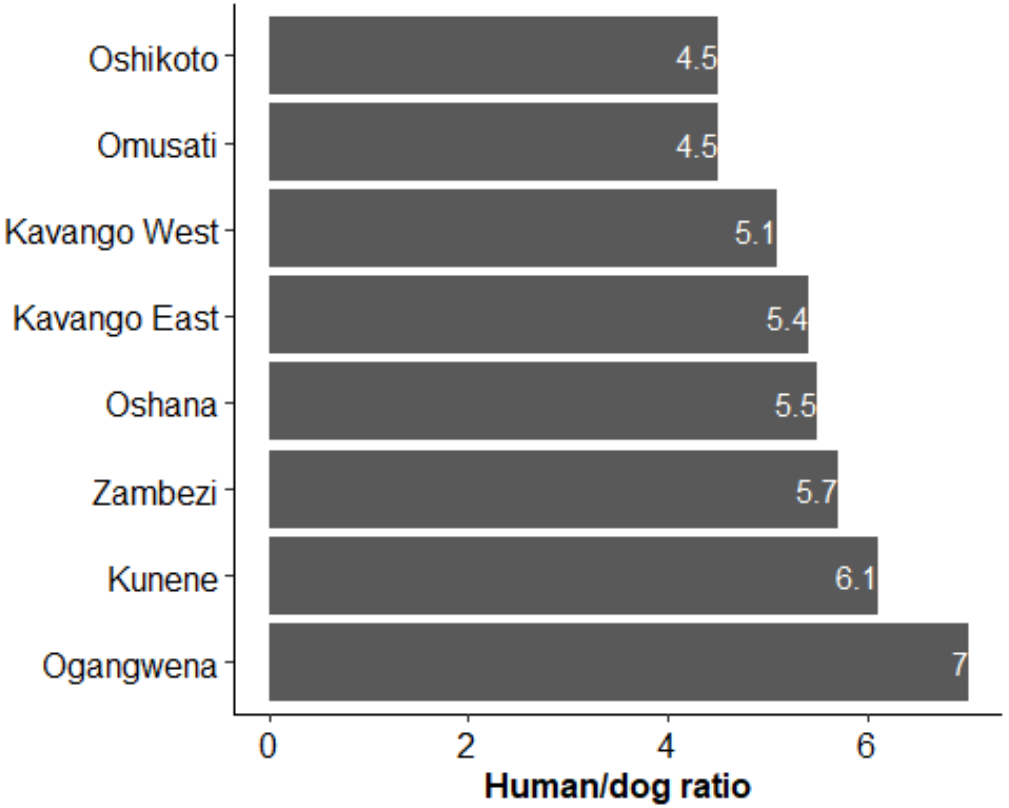


Red dots: 2021 vaccination
Black dots: 2022 vaccination

- 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

Dog population data – KAP survey



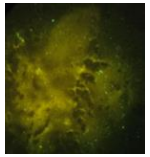


- Interviewed 3726 HHs locations in the survey area
  – used mobile app WVS App (Mission Rabies)
- 67% HH own dogs across eight regions
- Human/dog ratio: 5.45 (1 dog for every 5.45 people)
- Estimated 272,000 dogs in the NCA

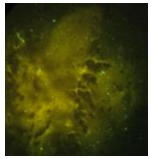
Rabies surveillance

- 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 carried by courrier service – NAMpost
  - Very fast TAT - results communicated within 24 hrs

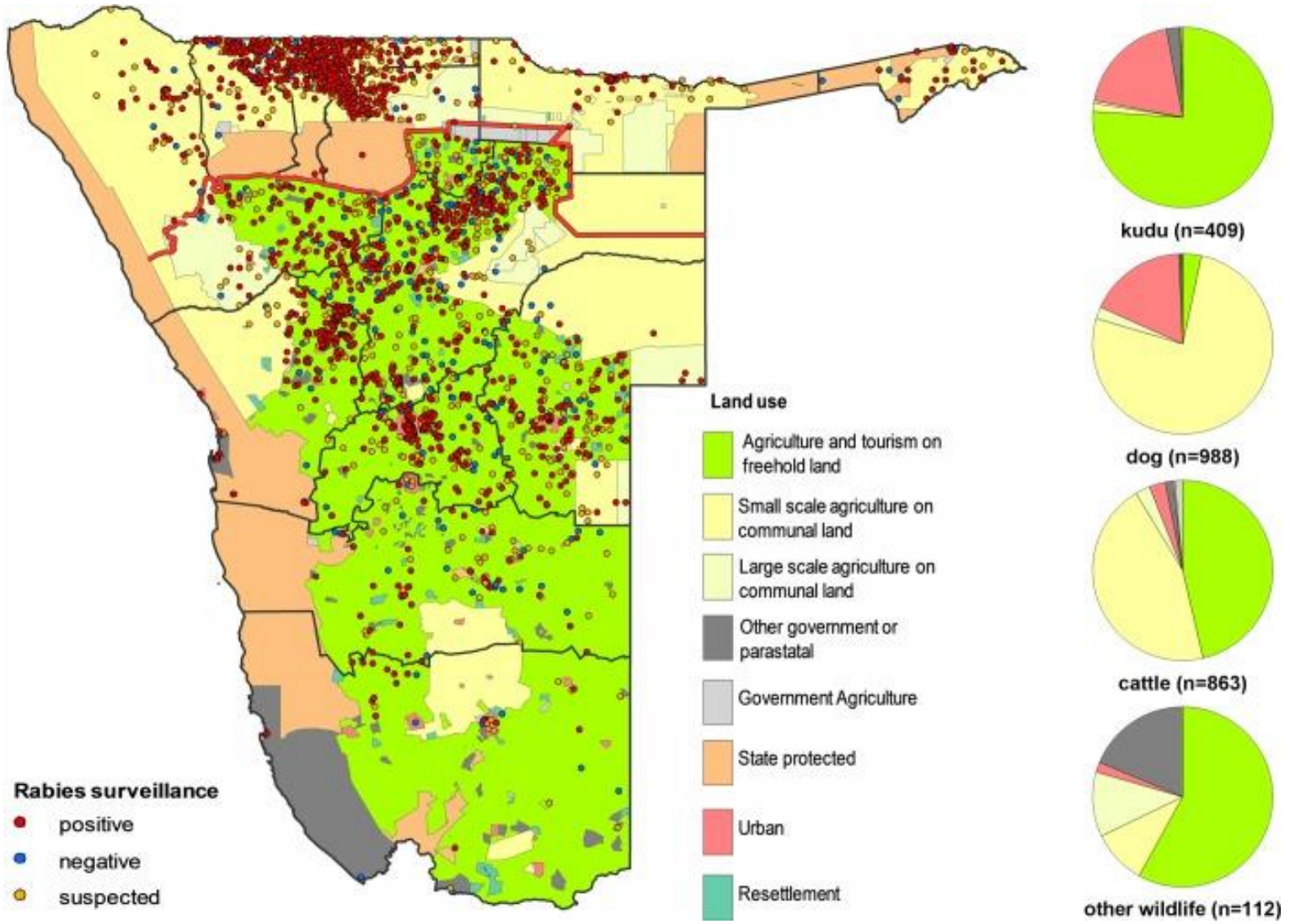
Regional rabies lab



Central Vet lab (rabies)

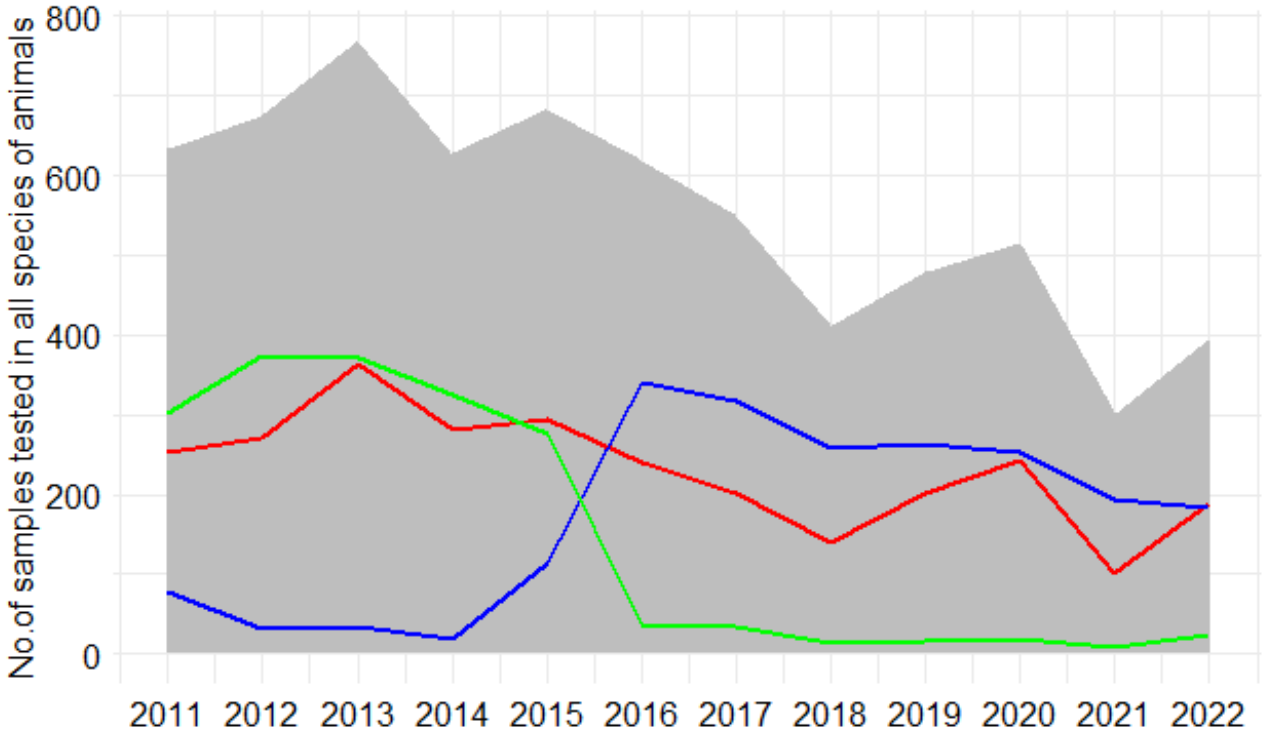


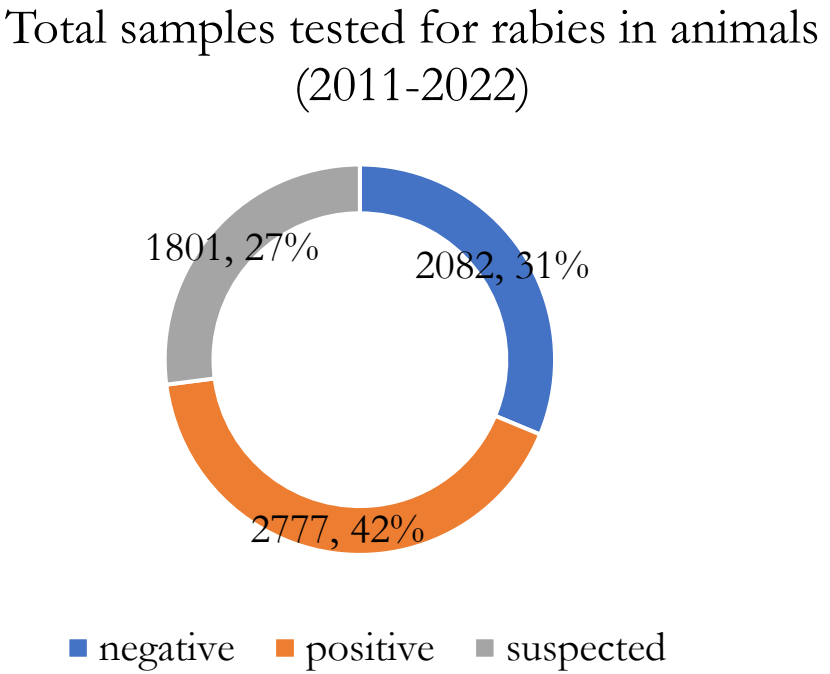
Rabies surveillance in animals - all species of animals and wildlife



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

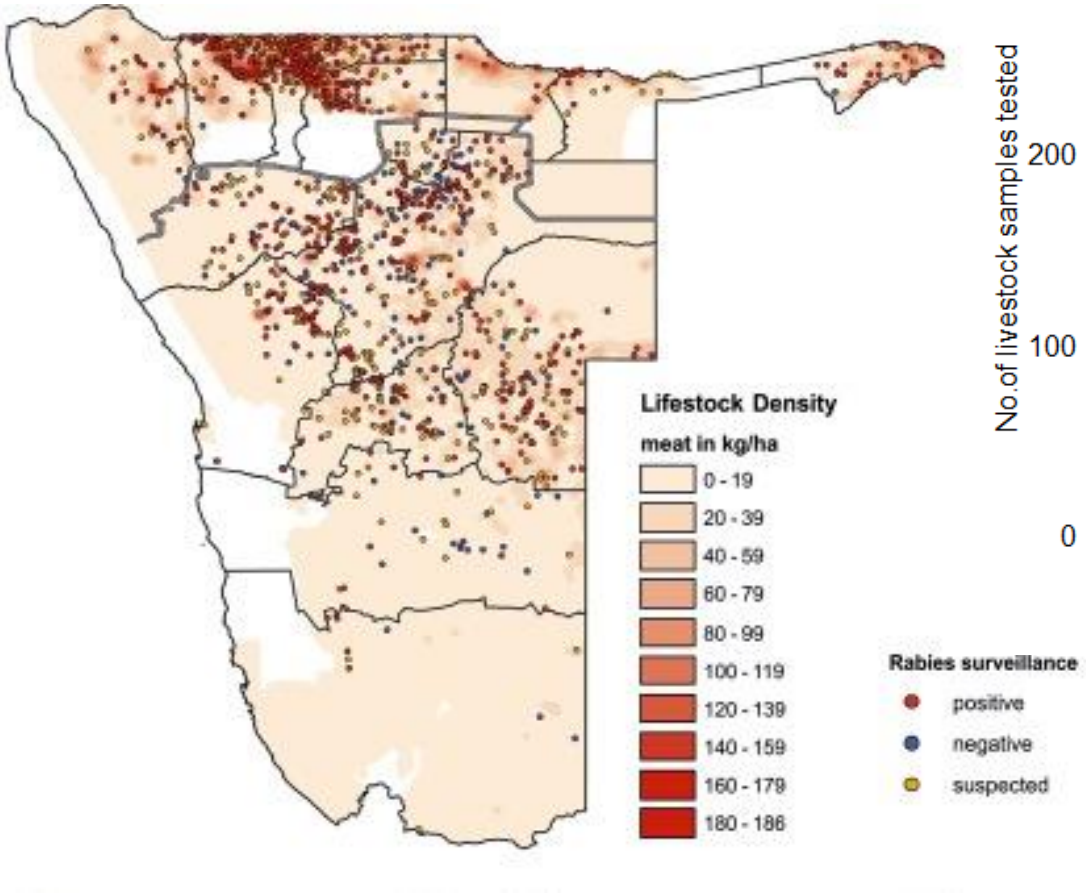


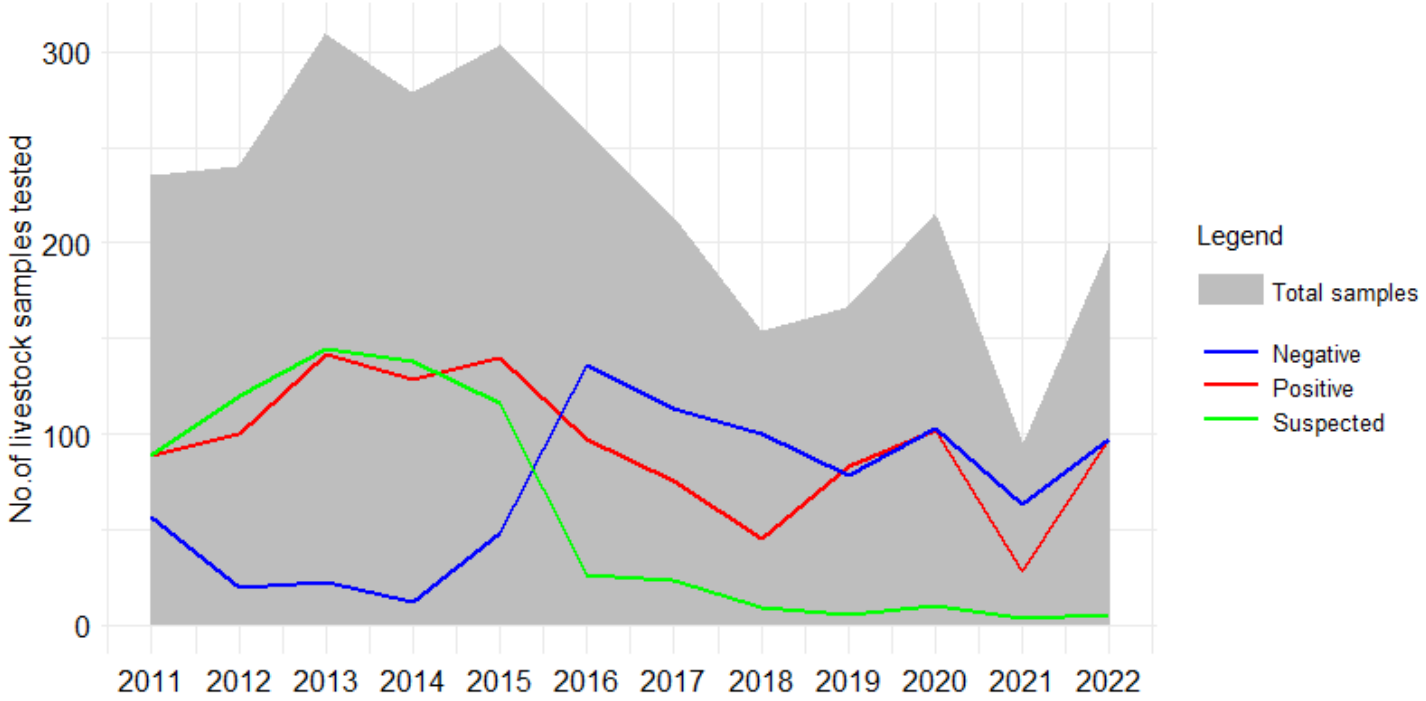


- 5000 samples tested in 12 years
- Average of 400 samples tested every year (range 300 - 600 samples)

Hikufe et al., 2019. PloS NTD

Rabies surveillance in livestock

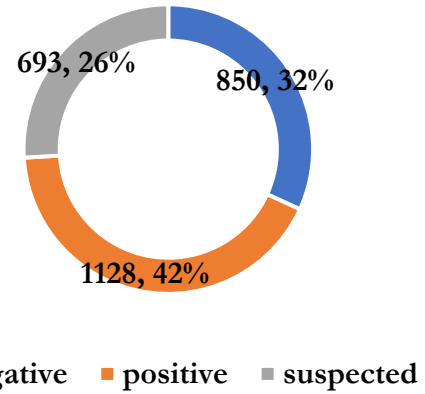




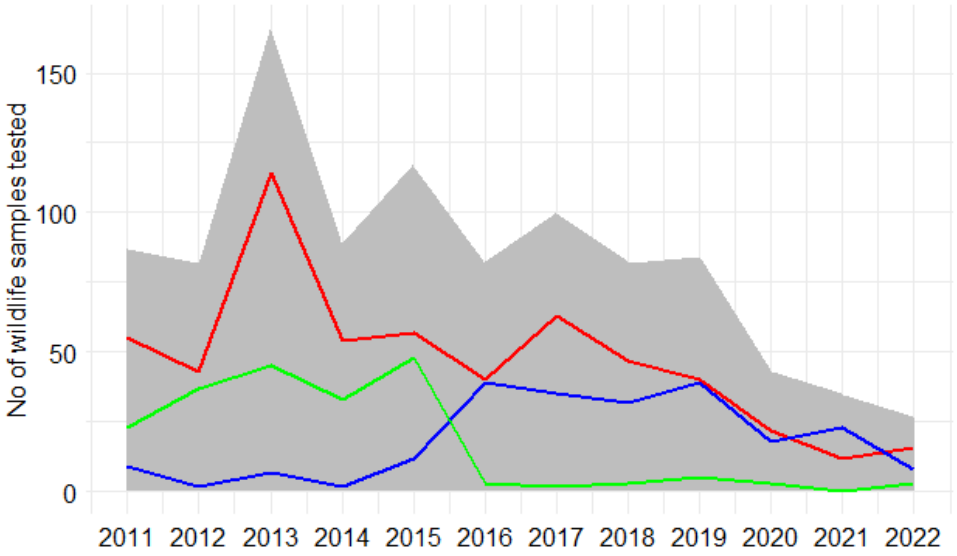
- 1978 samples tested (12 years)
- 165 samples tested every year (range 91-233 samples)

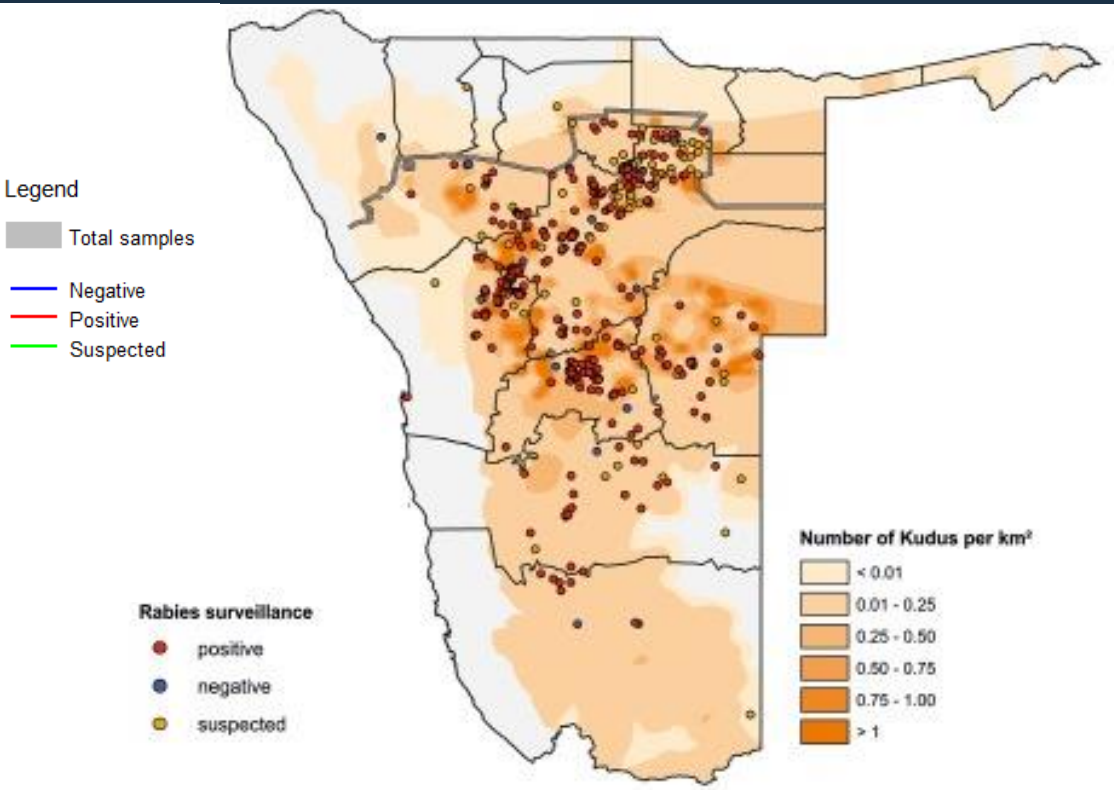
Hikufe et al., 2019. PloS NTD

Livestock samples tested for rabies (2011-2022)



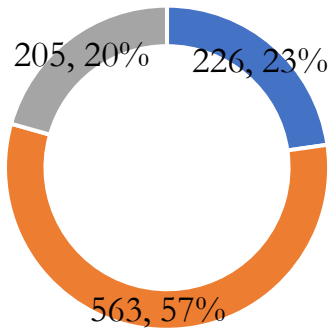
Rabies surveillance in wildlife





- 789 samples tested
- 65 samples tested every year (range from 24-121 samples)

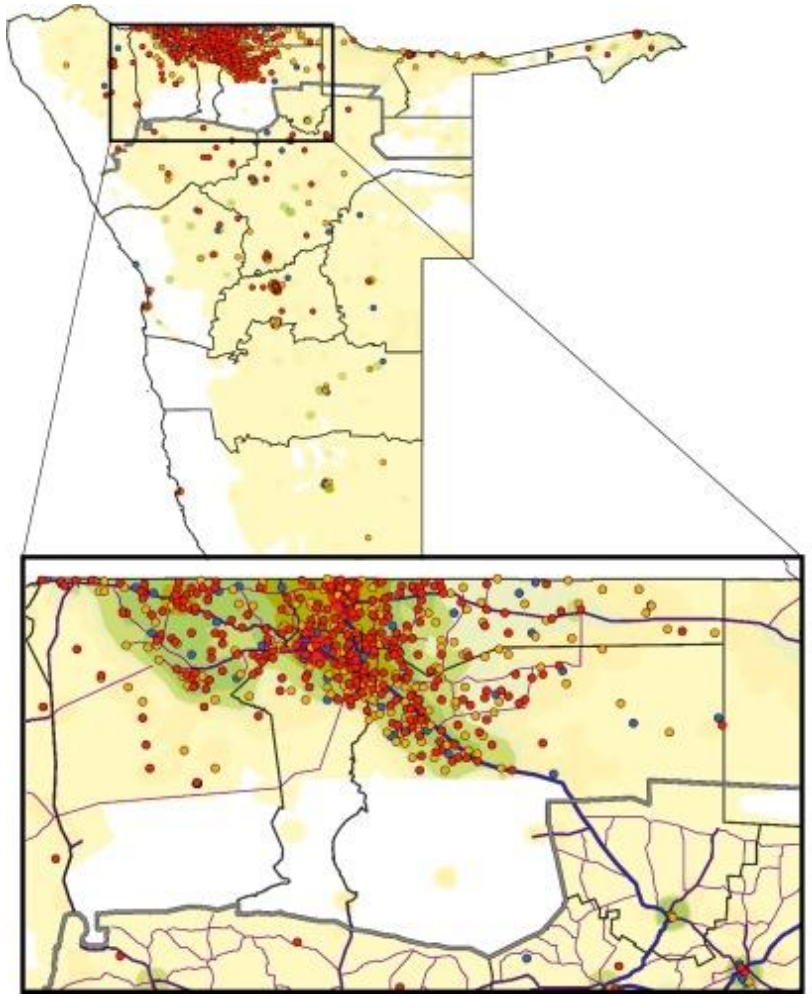
Wildlife samples tested for rabies (2011-2022)

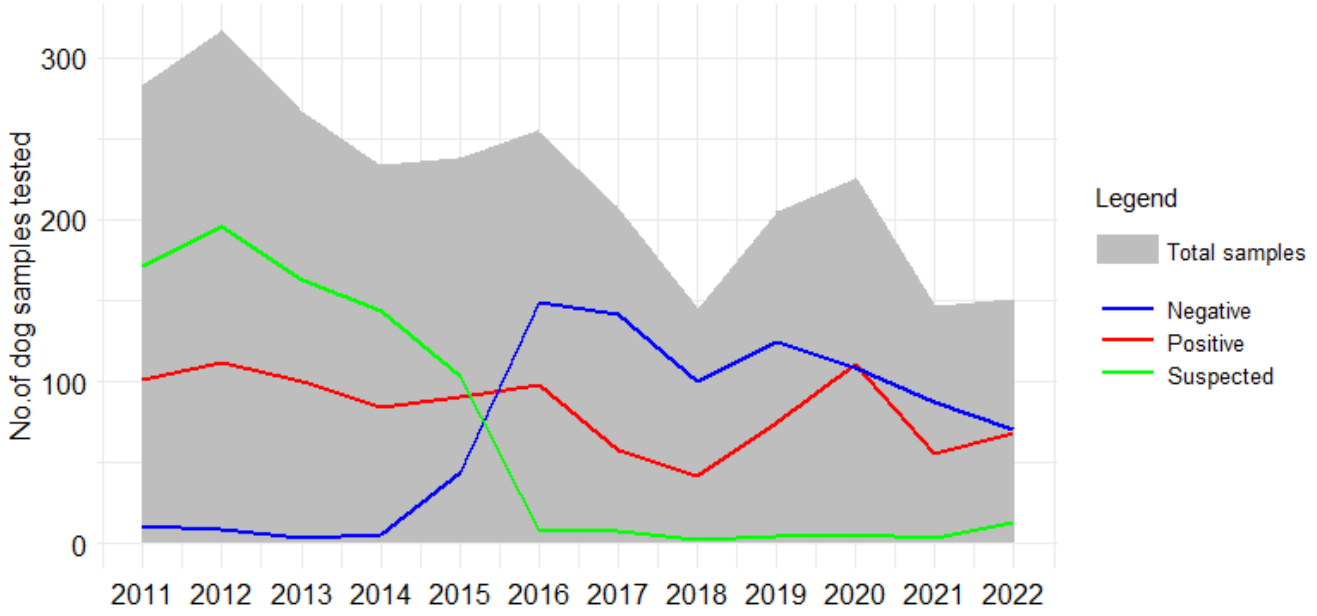


negative positive suspected

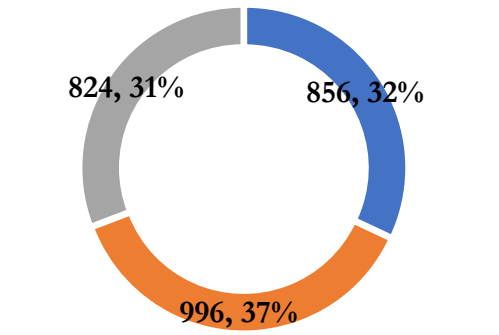
Hikufe et al., 2019. PloS NTD

Rabies surveillance in dogs





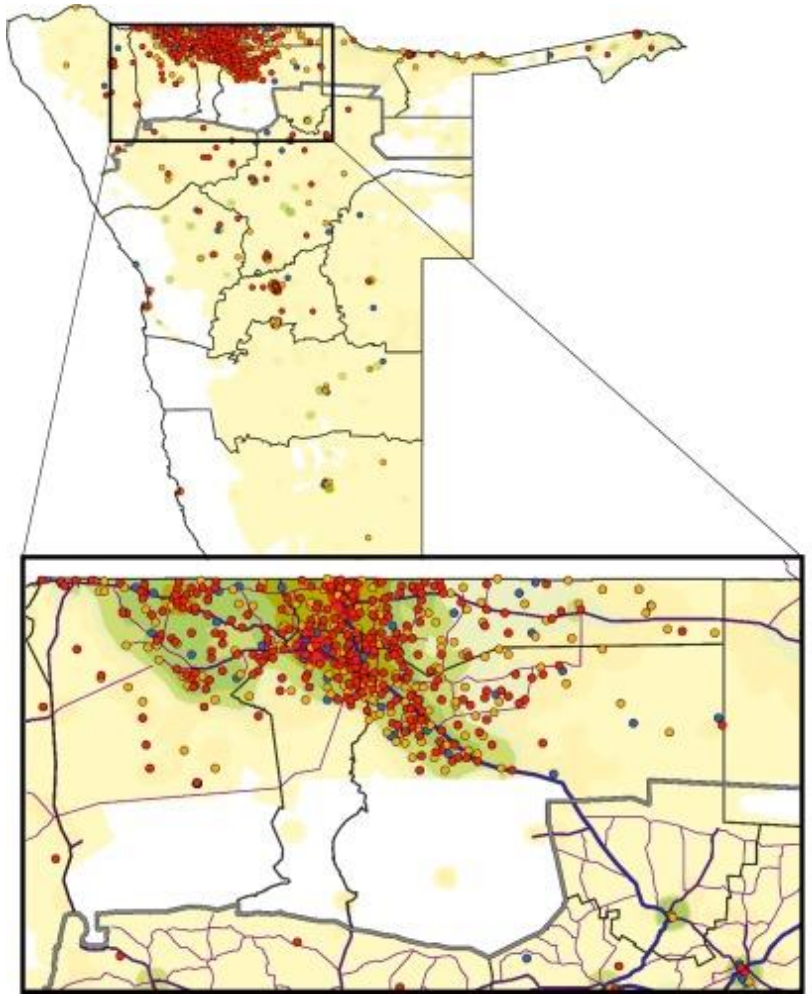
Samples tested for rabies in dogs (2011-2022)

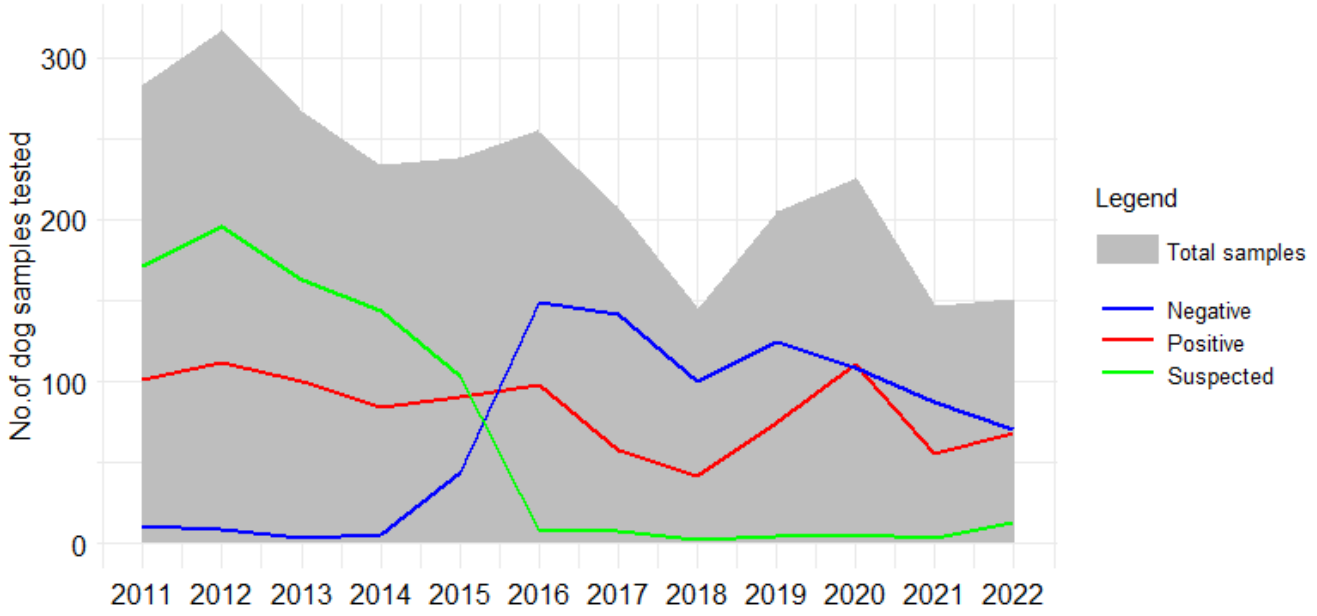


- 1852 samples tested (12 years)
- 155 samples every year (90-250 samples)

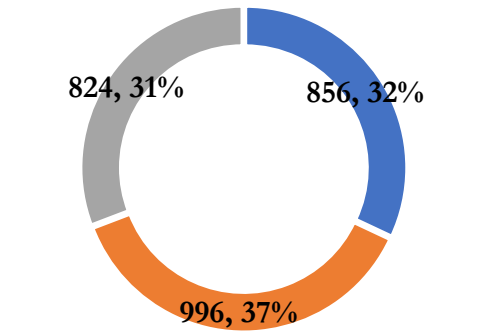
Hikufe et al., 2019. PloS NTD

Rabies surveillance in dogs





Samples tested for rabies in dogs (2011-2022)



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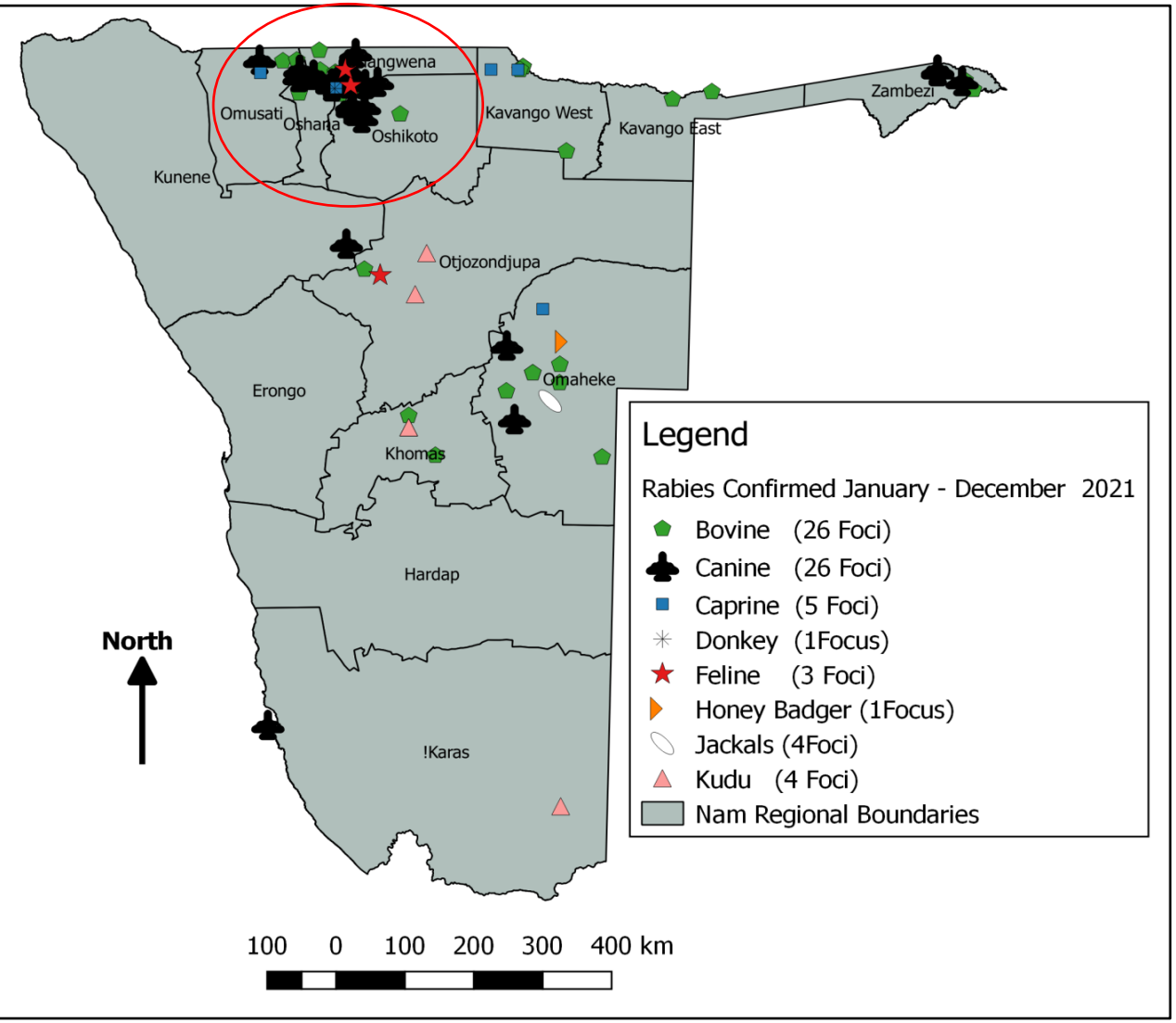
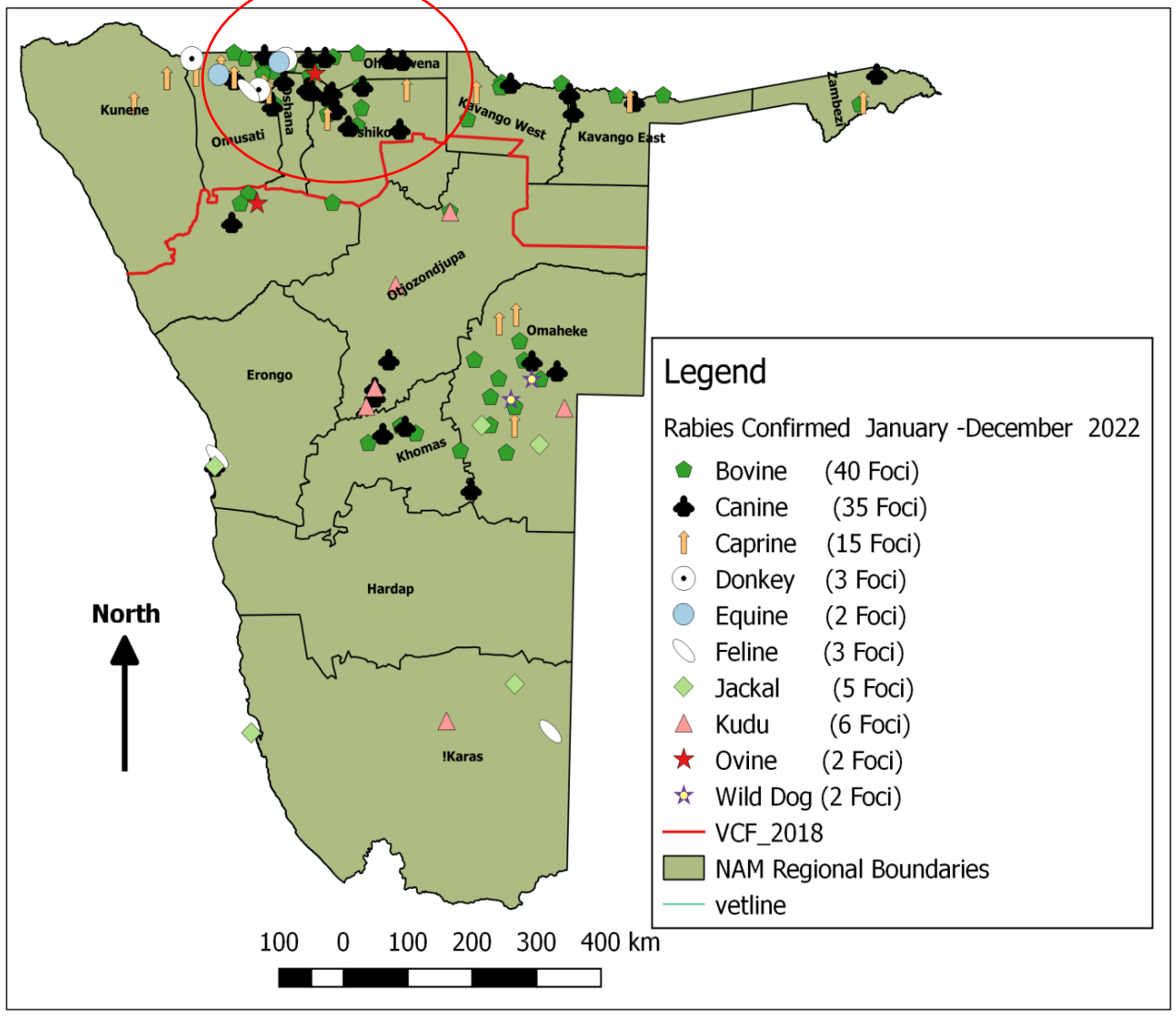
Rabies surveillance

2021

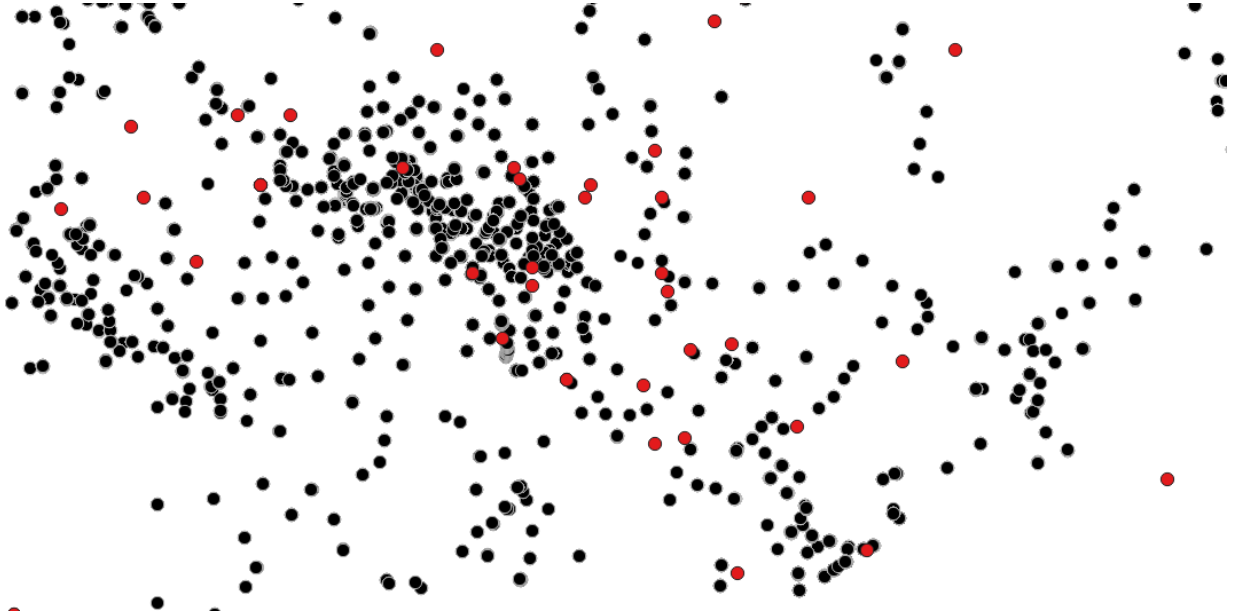


2022



Source: Hikufe 2023

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

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FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Parent laboratory

World Organisation for Animal Health
Founded as OIE

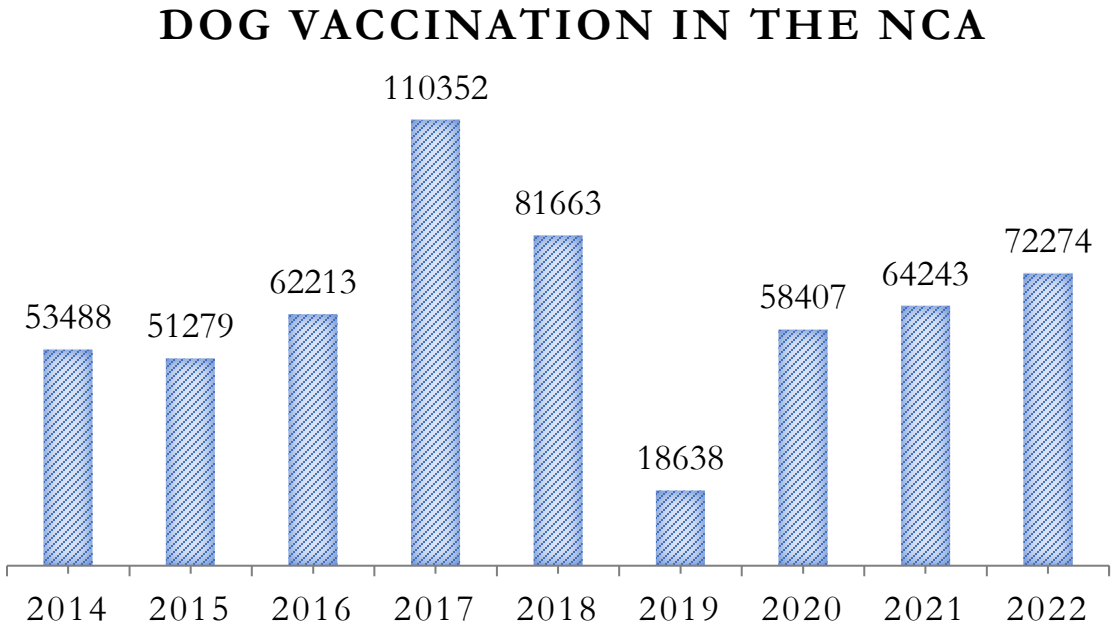
2019 -2024

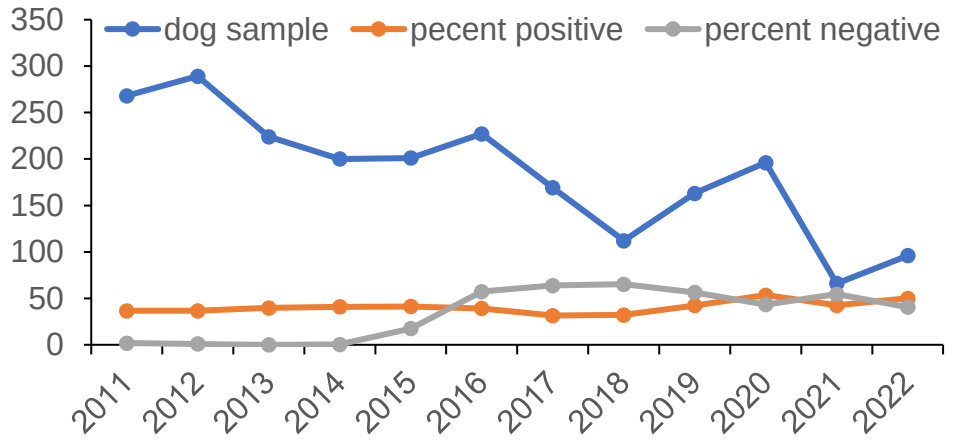
Bundesministerium für Ernährung und Landwirtschaft

Candidate laboratory, Namibia

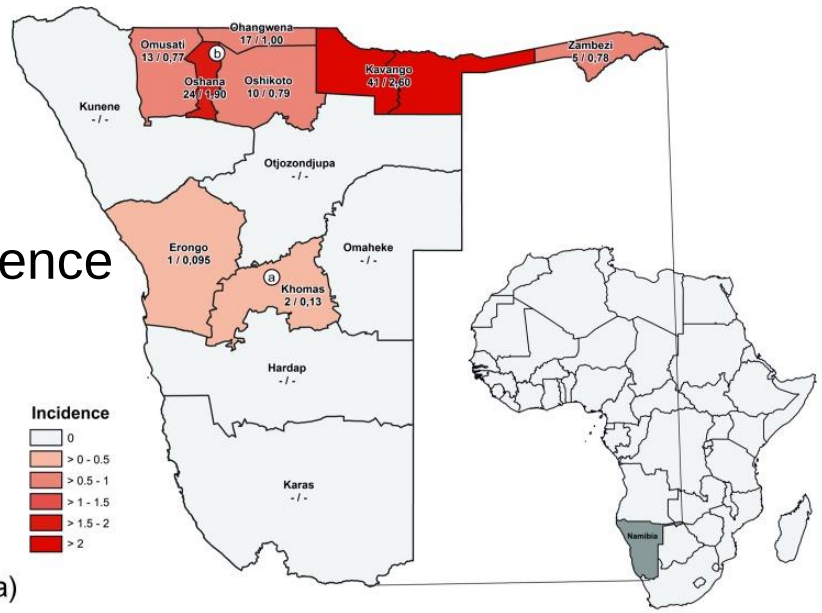
"Strengthening the Namibian Central Veterinary Laboratory in rabies diagnostics, control and research"

Impact of rabies control programme in Namibia - NCA

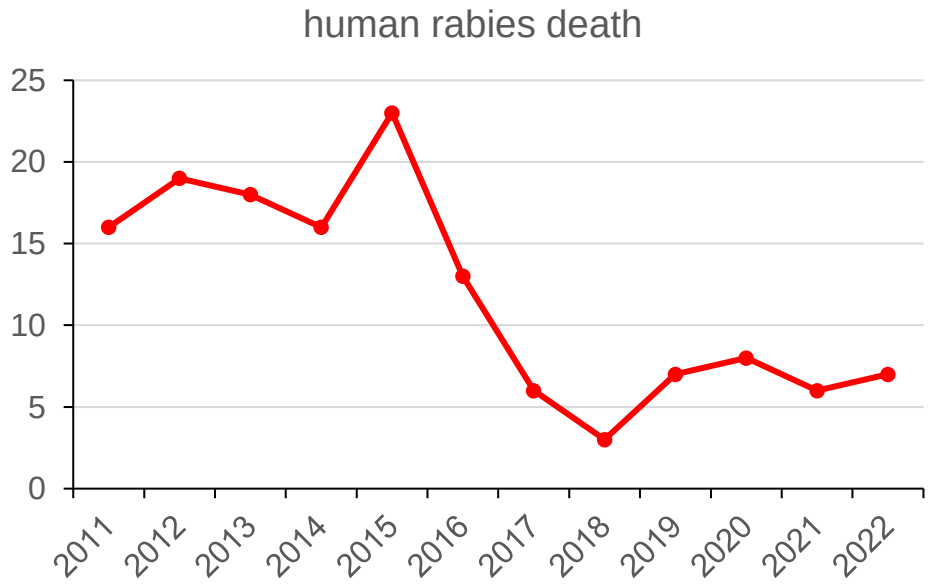




Human rabies incidence



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



Sharing of rabies information

PLOS | NEGLECTED TROPICAL DISEASES

RESEARCH ARTICLE

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

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

PLOS NEGLECTED TROPICAL DISEASES

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[1☯‡], Tenzin Tenzin[2☯‡*], Andre Coetzer[3,4], Emmanuel H. Hikufe[5], Josephat Peter[6], Laina Hango[6], Tangeni Haimbodi[7], Johannes Lipinge[7], Frenada Haufiku[8], Matias Naunyango[9], Magano Kephas[9], Albertina Shilongo[5], Kenneth K. Shoombe[1], Siegfried Khaiseb[10], Moetapele Letshwenyo[2], Patricia Pozzetti[11], Lorenz Nake[11], Louis H. Nel[3,4], Conrad M. Freuling[12], Thomas Müller[12], Gregorio Torres[11]

Tropical Medicine and Infectious Disease — MDPI

Article

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

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

ELSEVIER — One Health — Volume 16, June 2023, 100562

Emergency response using oral rabies vaccination of dogs –field data from Namibia demonstrate high efficiency

Conrad M. Freuling [a], Frank Busch [b], Mainelo Beatrice Shikongo [c], Nzwana Silume [c], Jolandie van der Westhuizen [d], Siegfried Khaiseb [d], Albertina Shilongo [e], Thomas Müller [a]

frontiers in Veterinary Science — ORIGINAL RESEARCH

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

Umberto Molini[1†], Rainer Hassel[1†], Steffen Ortmann[2], Ad Vos[2], Malaika Loschke[1], Albertina Shilongo[3], Conrad M. Freuling[4] and Thomas Müller[4*]

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

viruses — MDPI

Communication

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

Conrad M. Freuling [1,*], Jolandie van der Westhuizen [2], Siegfried Khaiseb [2], Tenzin Tenzin [3] and Thomas Müller [1]

PLOS NEGLECTED TROPICAL DISEASES

RESEARCH ARTICLE

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

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

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

World Organisation for Animal Health — Founded as OIE

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Latest disease alerts 16.09.2023 / Sheep pox and goat pox, Bulgaria

Namibia's battle against rabies: a One Health success story

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...

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

< News and Case Studies

Namibia's national plan for rabies elimination delivers benefit

By: United Against Rabies

World Organisation for Animal Health
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Country experience of Namibia in Rabies surveillance, data collection, and reporting

2nd Meeting of the Eastern Africa Sub-Regional Network for Rabies Control

10 – 12 October 2023 Addis Ababa, Ethiopia

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MINISTRY OF AGRICULTURE

PC-TAD

BMZ Federal Ministry for Economic Cooperation and Development

Thank you!

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