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#### OUR TRUSTEES

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Clarissa Baldwin CBE
Dr Rachel Foster



RT Hon Sir Desmond Swayne DT VR MP

Viscount Cranborne



Rabies is one of the oldest and deadliest diseases known to humankind, ruining the lives of millions of people worldwide each year.

But we're not backing down in the face of this terrible disease. We're pushing forward with everything we've got to put an end to rabies once and for all.

I founded Mission Rabies in 2013 with one clear objective: to eliminate rabies for good. And thanks to our targeted vaccination campaigns, expert surveillance, and life-saving education programmes, we're making progress every single day.

2022 has been another year of challenges, but I'm incredibly proud of what we've accomplished together. With your unwavering support, we've made huge strides in our education and awareness efforts. Our teams have delivered rabies prevention lessons to over one million children, empowered thousands of teachers, and reached hundreds of thousands of community members.

And across all our global projects, we're powering on to ensure as many dogs as possible receive rabies vaccinations to protect them and

the communities in which they live. This year alone, we've administered over 240,000 canine rabies vaccines to stop the disease in its tracks and prevent deadly outbreaks.

At our flagship projects in Malawi and India, we continue to provide year-round vaccination, education, and surveillance programmes to save lives. Meanwhile, our outreach projects worldwide are delivering expert advice, resources, and support through the International Rabies Taskforce.

We know that defeating rabies will take an army, but we also know that it's possible. And with your help, we're getting closer every single day. Thank you for standing with us on this life-saving mission. Together, we're making a difference that will be felt for generations to come.

Rock on!

Dr Luke Gamble BVSc DVM&S FRCVS
Founder & CEO Mission Rabies



# RABIES. DEADLY YET PREVENTABLE.

This cruel zoonotic disease kills at least one child every 10 minutes.

No parent should be forced to watch their child die of an entirely preventable disease, knowing it is too late to save them.

It is time to put an end to the suffering.

IT IS TIME TO
ELIMINATE RABIES.



Rabies has haunted people for millennia, and despite being 100% vaccine-preventable, it still causes unimaginable suffering today.

# THE WORLD'S DEADLIEST DISEASE.

#### Why?



### OVER 99% OF HUMAN RABIES CASES ARE CAUSED BY AN INFECTED DOG BITE.

Dogs serve as a reservoir for the disease and are the main source of transmission to humans.

The fear of rabies leads to the persecution and death of millions of healthy dogs every year, despite this being an ineffective method of rabies control.

#### RABIES KILLS OVER 59,000 PEOPLE EVERY YEAR.

40% OF THESE DEATHS ARE CHILDREN UNDER 15 YEARS OLD.

Lack of knowledge is a key reason why people are dying from rabies.

Without knowing how to behave around dogs, how to avoid getting bitten, or the crucial steps to take for life-saving treatment, people are constantly at risk.



# CREATING A RABIES FREE WORLD

Science shows that the most effective long-term rabies control strategy is through vaccination of dogs in endemic areas.

We head to rabies hotspots and run canine mass vaccination campaigns and education programmes - protecting both the human and canine populations. Human deaths in key project sites have been eliminated and we'll keep going until it's zero all around the world.



#### VACCINATE

By vaccinating 70% of any given canine population, we build herd immunity, break the transmission cycle, and stop the disease in its tracks.



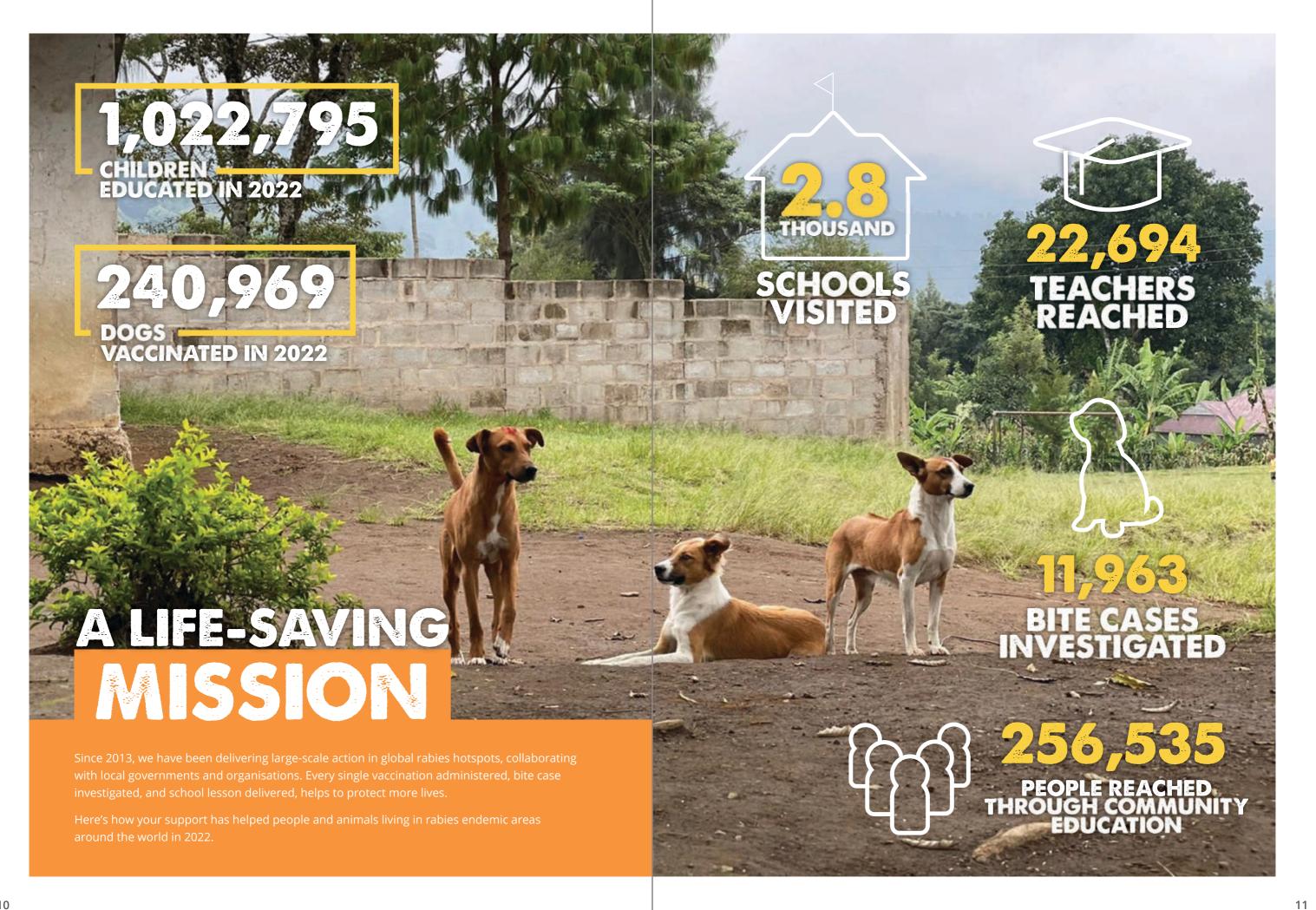
#### **EDUCATE**

By teaching those most at risk about rabies, we give people the tools they need to protect themselves.



#### **ELIMINATE**

We can reduce the threat through rabies surveillance. Tracing human bite cases back to their source, quarantining, and testing suspect rabid animals.





#### **MAJOR MILESTONES REACHED**

In 2022, we were proud to pass some massive milestones. In June, we reached the milestone of educating five million children worldwide since Mission Rabies began in 2013. Not only this, we were proud to reach the landmark of vaccinating two million dogs in September. Every dog vaccinated and every child educated takes us one step closer to our goal of eliminating human rabies deaths for good. It is only through the generosity of our supporters which makes achievements like this possible, as we all strive for a rabies-free future.



#### **GLOBAL ANIMAL HEALTH LEADERS COME TOGETHER**

In December 2022, Mission Rabies collaborated with the World Organisation for Animal Health (WOAH) and Bengaluru Veterinary College (KVAFSU) to conduct a five-day workshop on mass dog vaccination. Government representatives attended from ten Asian countries and six Indian states. Over 20 presentations were delivered, whilst practical demonstrations provided further opportunity to share methodology and foster discussion. The coming together of key international stakeholders, provided the opportunity to showcase the toolkits provided by the United Against Rabies Forum and International Rabies Taskforce, demonstrating how these can be utilised to assist governments in accelerating their progress towards elimination.





#### **OVER 1 MILLION CHILDREN EDUCATED IN 2022**

It has been a record-breaking year for our education teams who delivered rabies prevention lessons to over one million school children. We are thrilled to have been able to equip so many children with life-saving information via engaging sessions in over 2,863 schools. During 2022, Mission Rabies worked with over 22,000 teachers, allowing vital rabies prevention knowledge to reach even more children and keep them safe.





### VOLUNTEERS

With another year, comes another band of dedicated, hard-working, and passionate volunteers, who have enabled us to deliver largescale outreach projects around the world. Vaccinating thousands of dogs in a matter of a days is a massive undertaking, but with volunteers by our side, we are able to extend our reach and protect even more communities around the world. Hear from a few of the heroes who joined our campaigns during 2022.



Taking part of a Mission Rabies campaign has been a long-standing goal of mine. I became a veterinary nurse with the single hope that I could help protect and change the lives of animals worldwide. The two weeks spent vaccinating animals in Tanzania was a challenging but wholly worthwhile experience. You can really see first hand the change you're making to the lives of both local animals and humans alike. It is a true privilege to be able to take part in this work."

Megan - Outreach project: Tanzania



My time with Mission Rabies will always hold a special place in my heart. The work is exhausting, both physically and mentally, but so completely worth it. The work is important, and it's topped with making new friends, while connecting with old friends. Thank you for the opportunity to experience this incredible programme."

Joanna - Outreach project: Tanzania

"I am so grateful for the opportunity to see first-hand and contribute to the top-notch work Mission Rabies is doing in underserved communities in Uganda. The organisation, team spirit and working alongside local volunteers was nothing short of amazing! I felt valued from day one even as a non-vet/vet nurse everyone can contribute and make a difference. It was my first experience and certainly won't be my last. Sign-up to the next campaign and see for yourself."

Fanny - Outreach project: Uganda





**VOLUNTEER** WITH US!

### **CASE STUDY** SAVING SOPHEA

In April 2022, our Cambodia surveillance team encountered an alarming case of an 8-year-old girl named Sophea who had been bitten by a puppy. The puppy was showing signs typical of rabies before its death and later tested positive for the disease.

During our in-person investigation, we discovered that Sophea would regularly play with the puppy but had not made her parents aware when she was bitten. We ensured that Sophea immediately received the post-exposure rabies vaccinations needed to save her life at a local clinic. If these steps had not been taken, and symptoms had begun to show, it would have been too late to save her.

We requested permission to hold a rabies education session in the local school to teach children how serious the risk of rabies is, how to be safe around dogs, and what to do if they are bitten.



## 

Most rabies deaths occur in Asia and Africa. Our flagship projects are large scale interventions in India and Malawi that model best practice. They are based in two rabies endemic countries that face very different challenges when attempting to eliminate the disease. Headed by permanent teams, and supported by local governments, these One Health initiatives demonstrate how effective rabies control can be implemented at scale and create measurable improvements to the lives of the local community.











With a third of all estimated human rabies cases, India is the world's hotspot for the disease.

70,356

COMMUNITY MEMBERS REACHED

Goa: Providing a roadmap for other states to follow

Mission Rabies launched in Goa in 2013 after the State was identified as an ideal location to set the standard for rabies elimination across India. Since our first campaign, our programme has grown from strength to strength. In collaboration with the local government, it has developed to encompass comprehensive vaccination, education, and surveillance components.

Since October 2017, there have been no human deaths from rabies across the State and in June 2021, Goa became the first Indian State to be declared a 'Rabies Controlled Area'. This was a landmark achievement, setting a precedent for other States to follow. Our strategy in Goa has now shifted to focus on community engagement

and intensifying surveillance, especially at the State border.

ZERO
HUMAN RABIES DEATHS
IN GOA SINCE 2018

98,715

DOGS
VACCINATED

202,215

CHILDREN EDUCATED

1,767

SCHOOLS VISITED

#### Ready to respond 24/7

During 2022, we received over 3,882 phone calls to our Goa rabies hotline.

In many project areas, we run a toll-free rabies hotline for members of the public to report suspected rabies cases and receive assistance if bitten. The hotline is heavily promoted in the local area in which we work to enable any rabid dogs to be quickly investigated, and anyone bitten to receive immediate post-exposure treatment.

3,882

#### CALLS TO OUR RABIES HOTLINE



#### Bengaluru and beyond

Our vaccination programme in the city of Bengaluru has been running for three years with over 200,000 dogs vaccinated since the programme began. During 2022, 96,304 dogs were vaccinated, 125 rabid dogs were identified, and 97 human bite victims were identified during IBCM investigations – ensuring every person received a full course of post-exposure prophylaxis (PEP).

We have also provided support to a state-wide vaccination and education campaign carried out by the Department of Animal Husbandry & Veterinary Services, Government of Karnataka, which has a total of 4,300 veterinary institutes across the state. During September and October of 2022, they vaccinated 219,313 dogs and delivered information on rabies prevention to over 300,000 children.

**AN ADDITIONAL** 

315,617 DOGS VACCINATED

IN KARNATAKA STATE WITH MISSION RABIES SUPPORT

#### Ranchi, Jharkhand state

Ranchi was one of the original vaccination checkpoints during our launch in September 2013. Over the past 10 years, we have continued to make great progress across the city with a close collaboration with HOPE and Animal Trust. In 2022, our teams delivered rabies education to 8,324 children and 3,746 animals were vaccinated and sterilised.

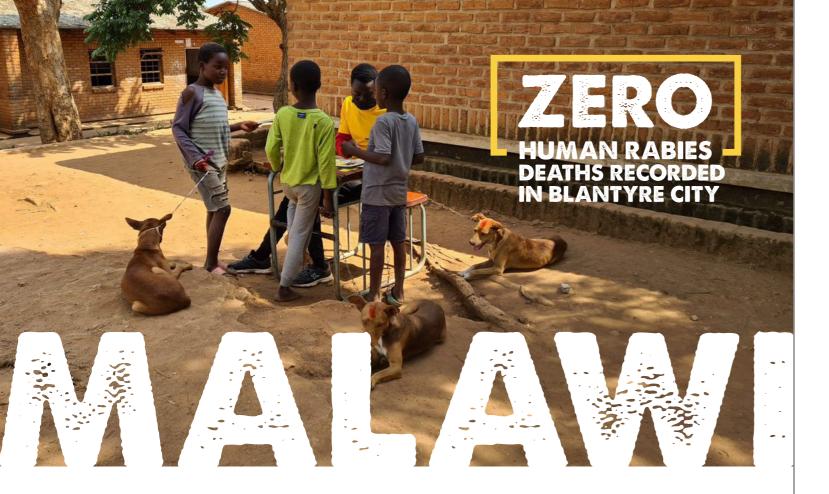
#### Moving forward in Mumbai

During 2022, rabies was declared a notifiable disease by Maharashtra State Health Department, giving a major boost to the rabies control activities across the State. Mission Rabies commenced work in Mumbai to deliver technical guidance to the local government, Brihanmumbai Municipal Corporation (BMC), and support the implementation of an effective rabies control programme. The BMC will be delivering an annual canine vaccination drive in the city, which has a large free roaming dog population. Training and support have been given on the WVS Data Collection App and our work will continue in 2023.





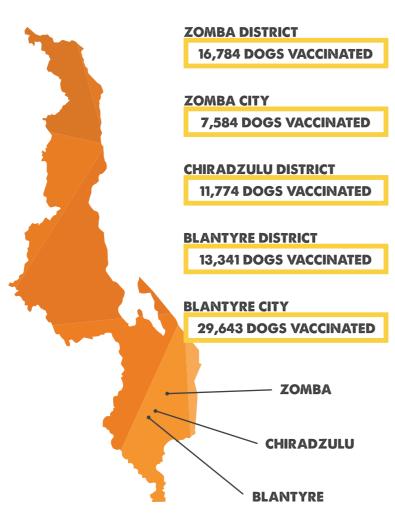




Mission Rabies began working in Malawi in 2015 after a single hospital recorded the highest number of child rabies deaths from any institution across the whole of Africa.

Excellent progress has been made in Malawi since our work here began in 2015. During 2022, our teams vaccinated over 81,000 dogs and achieved a vaccination coverage of at least 70% across all our working districts. Both human rabies cases and canine rabies cases have been reduced in the areas in which we work. Working in collaboration with the Department of Animal Health and Livestock Development (DAHLD), we have continued to deliver our large-scale vaccination, education, and surveillance programmes throughout Blantyre and the surrounding districts.

81,806
DOGS
VACCINATED



#### Education and awareness

2022 was an incredible year for our education teams in Malawi, with the programme reaching 808 schools, 740,692 children, and 10,394 teachers. Our education officers head into both primary and secondary schools across Malawi, to ensure pupils know how to protect themselves from rabies. We delivered 264 community workshops to 9,859 community members, and our education officers had direct interactions with 145,547 people. In addition to this core work, we also reached more than five million people through SMS campaigns, local TV and radio stations, and other community announcements.







740,692
CHILDREN EDUCATED



808

SCHOOLS VISITED

264

**COMMUNITY**WORKSHOPS

10,394

TEACHERS REACHED

#### React, respond, resolve

Our education and surveillance programmes go hand in hand. When more people are aware of the dangers of rabies and what to do when bitten, we can more effectively respond to rabies emergencies. Our surveillance team ensure rabid dogs are safely dealt with and those bitten receive post-exposure treatment before it is too late. During 2022, 2,220 dog bite cases were reported in Blantyre city and 1,425 in other areas.

Across Blantyre, Thyolo, Zomba and Chiradzulu districts, the number of positive canine rabies cases has reduced from 113 in 2021, to 51 in 2022.



Alongside our flagship projects, we run outreach programmes in global rabies hotspots. As well as saving lives, these projects provide an opportunity to implement current best practice in new settings. This helps drive forward our research and provide insight that guides practitioners around the world to effectively to eliminate human rabies deaths in their own countries. During 2022, we returned to Tanzania, Zambia, Mozambique, Ghana, and Uganda to deliver our life-saving vaccination and education programmes. In Cambodia, we continued with our critical rabies surveillance and education campaigns in preparation for a large-scale vaccination campaign in Phnom Penh in 2023.









#### A growing campaign in Phnom Penh

Cambodia has one of the highest rabies death rates per capita of any country in the world. We are working to change this in partnership with the Cambodian General Directorate for Animal Health and Production (GDAHP), as well as other stakeholders, such as the Institut Pasteur du Cambodge, and local animal welfare charities Animal Rescue Cambodia and Phnom Penh Animal Welfare Society. In 2023, we will commence the largest rabies vaccination drive ever carried out in the city of Phnom Penh.

With awareness being vital in the lead up to a mass vaccination drive, our team have been delivering rabies workshops within the local communities. In 2022, a total of 894 rabies workshops were delivered to 4,675 people, within both schools

and community groups. We have been increasing our surveillance efforts to ensure rabid animals are quickly identified and any people bitten receive urgent post-exposure treatment. During 2022, our surveillance team responded to over 5,438 suspect rabid dog cases. When a rabid dog was identified, ring vaccination was delivered within the area to limit the spread and protect the people and animals in the community.

4,675

COMMUNITY MEMBERS REACHED

5,438

CASES ENGAGED

## TANZANIA

#### Returning to the Meru District

In Tanzania, it is estimated that 1,500 people die from rabies every year. However, the disease is still greatly underreported and research suggests the number of deaths is perhaps up to 100 times higher than official figures. Working alongside Mbwa Wa Africa and our sister charity, Worldwide Veterinary Service, we run an annual vaccination and sterilisation campaign, helping to create a healthier dog population and protect both the animals and people in the communities.

During our 2022 campaign, we targeted fourteen wards within the Meru District with a total of 7,795 dogs vaccinated. We also administered vaccinations for 608 cats, bringing the vaccination total to 8,403. 277 of the rabies vaccines were administered at the WVS / Mbwa Wa Africa spay and neuter clinic, where the veterinary team performed 351 sterilisation surgeries. Where possible, running spay and neuter campaigns alongside a vaccination project is an incredibly effective way of improving the health and welfare of animal population.

25,415

CHILDREN EDUCATED

581

TEACHERS TRAINED



7,795
DOGS
VACCINATED





62

SCHOOLS VISITED

351

ANIMALS STERILISED



### MOZAMBIQUE

Pilot vaccination campaign in Chókwè

Rabies causes more than 1,300 human deaths every year in Mozambique, although epidemiological data is scarce. As well as being a significant public health risk, rabies is a great economic burden. In Mozambique, the cost of a single dose of rabies vaccine is 3,800 Meticals which is the equivalent of 50GBP. A full course of post-exposure vaccines equates to approximately 250GBP, which the vast majority of people simply cannot afford. In addition to this, rabies has a major impact on Mozambique's farming community through the loss of livestock.

Mission Rabies' first vaccination campaign in Mozambique was in 2021, focusing efforts on Massingir district, Gaza province. In November 2022, we returned to Gaza province but piloted a vaccination campaign in Chókwè, which is around 230km north of Mozambique's capital Maputo. Our team successfully delivered a seven-day campaign in Chókwè town and the surrounding villages, with over 1,000 dogs vaccinated and a 70% vaccination rate achieved.



1,002
DOGS
VACCINATED



Bosomtwe District experienced a significant increase in recorded dog bites in 2018. In collaboration with key local partners, we responded in 2019 with our pilot vaccination campaign, vaccinating over 4,000 dogs. This year, with the support of the UK's Animal and Plant Health Agency, we returned to Ghana with a focus on Kpone Katamanso Municipality in Greater Accra, due to reports of increased rabies incidence in the region.

During 2022, 5,054 dogs and 2,633 cats were vaccinated, successfully achieving the 70% canine vaccination coverage required to achieve herd immunity. Alongside our vaccination campaigns, our education team were hard at work ensuring that the children in the area are equipped with lifesaving information. We visited 90 schools to teach over 20,000 pupils about the dangers of rabies, what to do if bitten, and how to stay safe around dogs. We also launched a rabies surveillance project, to trace and respond to bite cases in the region, helping to stop the spread of the disease.

90

SCHOOLS VISITED

20,001

CHILDREN EDUCATED

10,486

COMMUNITY MEMBERS REACHED





## UGANDA

Protecting communities in Uganda

Mission Rabies has worked in Uganda since 2015 across several project regions. After a hiatus due to COVID-19, we returned to Uganda to carry out an eight-day project during July 2022. A team of twelve international volunteers, six local team leaders, five drivers, and two Mission Rabies staff members successfully administered 2,715 vaccines.

We worked alongside Andorra-based NGO, Daktari, running sterilisation clinics concurrently to the vaccination drive. We provided local communities with an excellent opportunity to access free sterilisation for their dogs at the same time as receiving a life-saving rabies vaccine. To encourage as many pet owners as possible to attend the clinics, announcements were played on local radio stations, our schedule was distributed to community leaders, and local volunteers raised awareness within the community. During the project, members of the Mission Rabies team gave talks about the dangers of rabies and the importance of vaccinating dogs to several organisations,

including Uganda Nursing College, The Rotary Club, and Bwindi Community Hospital.

2,715
DOGS
VACCINATED













# THE ALL-TERRAIN CLINC

Humane dog population control is vital in creating healthier dog populations. The All-Terrain Clinic is an entirely self-sufficient mobile veterinary hospital which we operate in collaboration with our sister charity, Worldwide Veterinary Service. From this incredibly well-equipped mobile clinic, we are able to provide essential veterinary care in resource-limited communities and champion humane animal birth control. We also train local vets so effective care can continue after we've left. In 2022, the team on board the All-Terrain Clinic delivered surgical training to 167 vets, improving the veterinary care available sustainably and widening our impact within the communities visited.

2,503

DOGS
STERILISED &
VACCINATED

167

VETS TRAINED

2,500

KM TRAVELLED

# THE INTERNATIONAL RABIES TASKFORCE

A global committee of experts dedicated to the elimination of canine rabies.

The International Rabies Taskforce (IRT) provides practical One Health expertise, resources, and guidance to support governments in planning and implementing successful, cost-effective rabies elimination strategies.

We are one of three strategic taskforce partners who came together to form the IRT.

The IRT has developed a clear and comprehensive framework for rabies elimination. This framework aids understanding of the fundamental elements of an elimination programme and how to implement an effective strategy that can be broken down into stages.





RABIES TASKFORCE

#### **PLANNING**

Working with governments to carefully consider and develop strategies to overcome challenges prior to the programme implementation.

#### **IMPLEMENTATION**

Supporting the implementation of pilot campaigns - and then programmes at scale - by providing expert training and state-of-the-art technology.

#### **EVALUATION**

Supporting with operational evaluation so that campaigns can be successfully scaled to a national level.



Discover more at rabiestaskforce.com



### ZAMBIA

Tackling rabies in Zambia as part of the International Rabies Taskforce

We continued to provide practical expertise, resources, and guidance to the Zambian Government in 2022, to support their national rabies elimination programme. This project was delivered by the International Rabies Taskforce (IRT).

Following the success of the project in 2021, a joint vaccination campaign was conducted in July 2022 by the Ministry of Fisheries and Livestock (MFL) and the International Rabies Taskforce (IRT). The Zambian government identified 20 vaccination locations to target within Lusaka District and rabies vaccines were administered to 6,054 dogs.

Public engagement activities and educational sessions were run to increase awareness of rabies and how to prevent it, as well as to inform the public about the upcoming vaccination campaign in their local area. 59 schools were visited in the area with 26,057 children educated, helping them to stay safe from this cruel and deadly disease.

SCHOOLS VISITED

6,054
DOGS
VACCINATED



25,057

CHILDREN EDUCATED

# TECHNOLOGY & RESEARCH

Research is at our core, and we harness technology for the most effective approaches to a large-scale vaccination campaign.

Through our proof-of-concept projects, valuable data insights, and Data Collection App, we are creating roadmaps for governments to implement successful mass dog vaccination campaigns. Alongside this, our REACT App provides an all-in-one system for the management of rabies case investigations, which provides groundbreaking technology for surveillance in rabies hotspots.



#### Leading the way to a rabies free future

As part of a collaboration with the Government of Goa and the University of Edinburgh, a research paper outlining a clear pathway for rabies elimination was published in Nature Communications in May 2022.

The paper 'Elimination of human rabies in Goa, India through an integrated One Health approach' encapsulates rabies control work carried out by Mission Rabies, the Government of Goa, University of Edinburgh, Dogs Trust Worldwide, MSD Animal Health, and other partners. The team behind the study used innovative techniques utilising smart phone technology to capture large quantities of spatial data on stray dogs, across a seven-year dog vaccination campaign that has resulted in Goa becoming the first Rabies-Controlled State in India.

The research paper proves how mass vaccination in dogs can lead to the elimination of rabies in people, and how the Mission Rabies approach can be economically scaled up across India, potentially preventing the deaths of thousands of people.

nature communications



The WVS Data Collection App enables us to carry out mass vaccination programmes systematically and efficiently.

We use a bespoke data collection app developed by our sister charity, Worldwide Veterinary Service. The app allows our teams and other organisations to effectively monitor and manage field teams, capture data, and report the impact of interventions. The app has been pivotal in all aspects of our rabies control programmes, from vaccination delivery to research and dog population surveying.

GPS data is collected with every entry allowing geospatial analysis of our field work and ensuring that no area is repeated or missed.

### 3 MILLION RABIES VACCINATIONS HAVE BEEN RECORDED SINCE 2013

\*\*Every project must ensure 70% of dogs are vaccinated to establish herd immunity in the local canine population. Our smartphone app helps us measure this in a scientific manner, indicating areas where further vaccination work is required and directing teams on the ground to respond to rabies outbreaks.\*\*

#### Andy Gibson

Director of Strategic Research at Mission Rabies.

#### Karnataka state campaign:

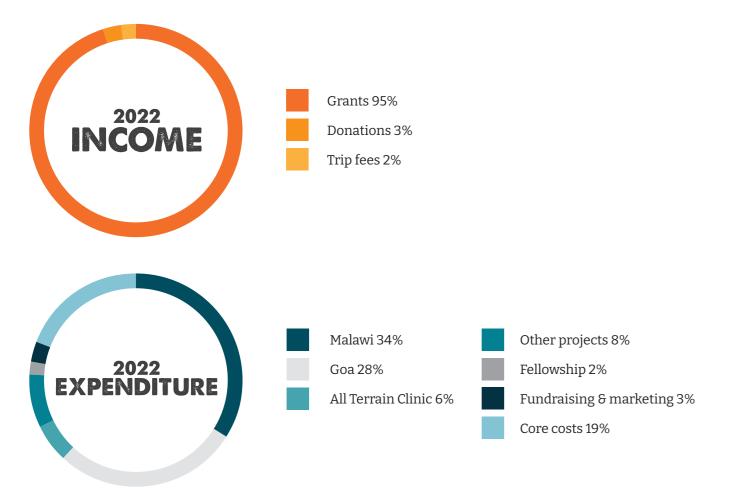
Demonstration of the success achieved within the state of Goa has prompted other Indian governments to amplify their own rabies elimination efforts. In October 2022, the state government of Karnataka launched a state-wide vaccination campaign, seeing over 200,000 dog vaccinations recorded on the WVS App over a 4-week period.





During 2022, Mission Rabies spent £1,270,289 delivering life-saving projects in rabies hotspots around the world. Our teams continued to go above and beyond, vaccinating 240,969 dogs and educating over one million children.

Our income for the year was £1,343,045, an increase of 8% from 2021. This increase was thanks to the continued support of our generous donors, and the reduction in travel restrictions, meaning that volunteers were once again able to join us around the world, powering on in the fight against rabies.





We are tremendously grateful to every one of our supporters for getting involved and making a big difference for people and animals globally.

It is only with you by our side that we can strive forward to save lives and put an end the suffering caused by rabies.

























### LET'S SAVE LIVES. LET'S TAKE THE FIGHT TO RABIES.

#### **STAY CONNECTED**













Mission Rabies is a registered charity in England and Wales: 1162293

Mission Rabies USA is a 501(c)(3) tax-exempt organization

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