



GHANA RABIES CONTROL AND PREVENTION ACTION PLAN

2018 - 2030



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List of Abbreviations

AMA	Accra Metropolitan Assembly
CDC	Centers for Disease Control and Prevention
CSO	Civil Society Organization
DPM	Dog Population Management
DDPH	Deputy Director of Public Health
ECTAD	Emergency Centre for Transboundary Animal Diseases
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
GAR	Greater Accra Region
GARC	Global Alliance for Rabies Control
GDREP	Global Dog Rabies Elimination Pathway
IBCM	Integrated Bite Case Management
IEC	Information, Education and Communication
KAP	Knowledge Attitude and Practices
KCCR	Kumasi Centre for Collaborative Research
MDVC	Mass Dog Vaccination Campaign
MoE	Ministry of Education
MoFA	Ministry of Food and Agriculture
MoH	Ministry of Health
MLGRD	Ministry of Local Government and Rural Development
NADMO	National Disaster Management Organization
NIPH	Norwegian Institute of Public Health
NCCE	National Commission on Civil Education
NGOs	Non-Governmental Organizations
SARE	Stepwise Approach toward Rabies Elimination

SOP	Standard Operations Procedure
OIE	World Organization for Animal Health
PEP	Post-Exposure Prophylaxis
PrEP	Pre-Exposure Prophylaxis
USD	US Dollar
VSD	Veterinary Service Directorate
WHO	World Health Organization

Foreword

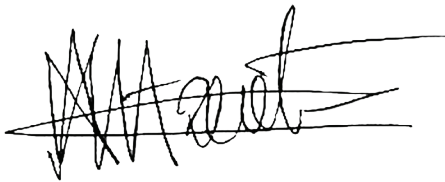
Rabies is an endemic disease and a silent killer of all terrestrial mammals on the African continent and Ghana is no exception. Although various sectors have worked together on the control and prevention of rabies in Ghana, progress towards rabies elimination is continuously hindered by poor surveillance, under-reporting of rabies cases, inadequate rabies diagnostic capacity and limited inter-sectorial coordination mechanisms.

In response to these limitations, and a drive towards programmatic success, a multi-disciplinary stakeholders meeting focussed on the elimination of dog-mediated human rabies by 2030 was held during a workshop from 21-24 May, 2018 in Accra, Ghana. During the meeting, the Stepwise Approach towards Rabies Elimination (SARE) tool was used to assess the country's strengths and weaknesses in terms of data collection and analysis; prevention and control; laboratory diagnosis; dog population management; information, education and communication; cross-cutting issues; and legislation. In support of these findings, the Practical Work plan component of the SARE assessment tool was used to generate a customizable work plan for the country's pending activities while the Global Dog Rabies Elimination Pathway (GDREP) tool provided an estimated cost associated with the successful control and elimination of rabies over a 13-year period.

The goal of the Ghana Rabies Control and Prevention Action Plan is to use the **One Health Approach for the surveillance, prevention and control of dog-mediated human Rabies in Ghana**. Although rabies is fully preventable and can be eliminated using appropriate sustainable control strategies, the absence of an adequately costed

work plan – and concerted efforts – will result in continued escalation of preventable human deaths caused by rabies, especially in view of an ever-growing human and dog population. The Ghana Rabies Control and Prevention Action Plan, which is actionable between 2018 and 2030 will be implemented by various stakeholders (whose roles are clearly defined in the document) through existing systems with financial and technical support from all development partners, non-governmental organizations, ministries, departments and agencies.

We wish to sincerely express our appreciation to all stakeholders, the Food and Agriculture Organization, the World Health Organization, the Global Alliance for Rabies Control, the United States Agency for International Development, the Centers for Disease Control and Prevention and the Norwegian Institute of Public Health for their various contributions and support for the preparation of the Ghana Rabies Control and Prevention Action Plan.

A handwritten signature in black ink, appearing to read 'Owusu Afriyie Akoto', with a large, stylized flourish extending to the right.

Dr. Owusu Afriyie Akoto

Hon. Minister

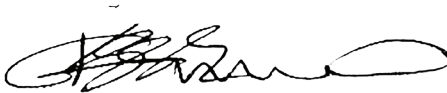
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Ministry of Environment, Science, Technology and Innovation



Kwaku Agyeman-Manu

Hon. Minister

Ministry of Health

Executive summary

Rabies has the highest case-fatality rate of any known disease, while also being entirely preventable through the timely administration of rabies post-exposure prophylaxis (PEP). Domestic dogs are the most important reservoir species for rabies and are known to cause 99% of all reported human cases. Therefore, the only cost-effective and feasible approach towards canine-mediated human rabies control and elimination is the mass vaccination of dogs.

At the multi-sectorial One Health Zoonotic Disease Prioritization workshop – using the CDC One Health Prioritization tool – held from 28 - 29 March 2018 in Accra, rabies was ranked as the second most important zoonotic disease in Ghana. Rabies is endemic in West Africa and Ghana specifically, where it is endemic countrywide. To date, both human and animal cases of rabies occur annually in the country, with 34 and 55 entirely preventable human rabies deaths reported in 2015 and 2016 respectively. Indeed, the recent increase in the incidence of rabies in the country can be attributed to the low vaccination coverage (estimated to be between 5 and 30%) of the country's dog populations, irresponsible pet ownership and the continuous poor dog population management.

Over the past years, the Government of Ghana has implemented various rabies control initiatives throughout country. Although these efforts are commendable, they have not been widespread enough to sufficiently elicit any lasting effects. With the adoption of the Sustainable Development Goals in 2015, nations are poised and committed to end Neglected Tropical Diseases such as Rabies by 2030. To this end, the tripartite organizations -World Health Organisation (WHO), Food and Agriculture Organisation of the

United Nations (FAO) and World Organization for Animal Health (OIE)-working with Global Alliance for Rabies Control (GARC) has the goal of eliminating dog-mediated human rabies deaths by 2030.

In this respect, the FAO, the Ministry of Health and the Ministry Food and Agriculture jointly organized a four-day workshop from 21 - 25 May, 2018. Participants at the workshop used the Stepwise Approach towards Rabies Elimination (SARE) tool and assessed the rabies situation in Ghana. Using the One Health approach, the SARE tool provided a tangible and actionable activities that have been designed to follow a logical flow of progression, typically from a small-scale to nation-wide implementation. By focusing available resources to the pending activities identified in the SARE assessment, Ghana can further its own efforts towards rabies control and elimination in a sustainable manner.

In support of undertaking the required steps towards rabies control in Ghana, the Practical Work plan component of the SARE tool was used to automatically create a unique action plan from 2018-2030 – termed the “Ghana Rabies Control and Prevention Action Plan”. The Ghana Rabies Control and Prevention Action Plan (2018-2030), described in more detail in this document, will be implemented by the core Ministries of Health, Food and Agriculture, Environment Science Technology and Innovation, and Local Government and Rural Development with technical backstopping from the development partners and other non-governmental organizations.

Section1:

Rabies in Ghana

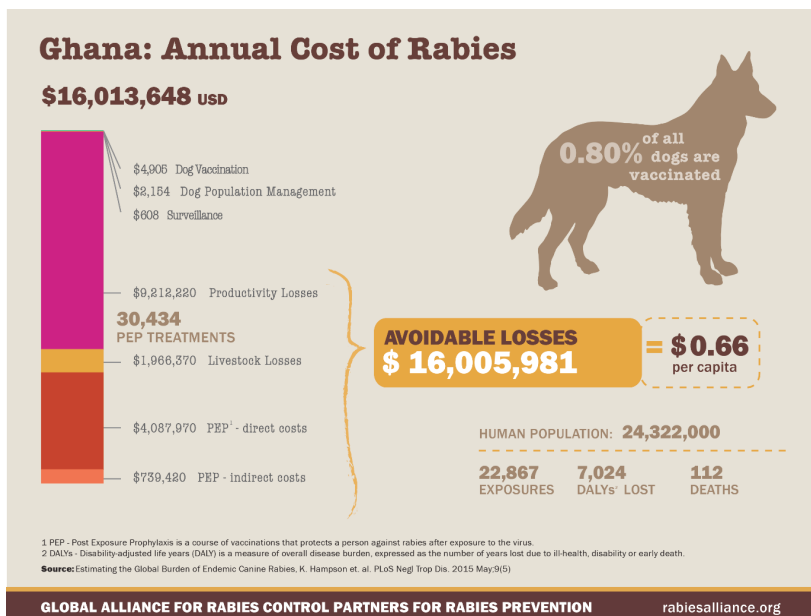


Figure 1. Visual representation of the Ghana-specific rabies burden estimates as determined using a comprehensive mathematical modelling approach.

Section 2:

Workshop Summary

Section 2.1: Introduction

Between 21-25 May 2018, representatives from governmental stakeholders – and other relevant stakeholders such as non-governmental organizations (NGOs) – involved in canine-mediated rabies control Ghana participated in a comprehensive in-country workshop during which three work-streams were followed and completed:

1. Stepwise Approach toward Rabies Elimination (SARE) assessment for Ghana
2. Development of a Practical Work plan for the Ghana's pending SARE activities
3. Determination of Ghana's Global Dog Rabies Elimination Pathway (GDREP)

Section 2.1.1: Stepwise Approach toward Rabies Elimination

Based on the SARE assessment undertaken Ghana achieved a nationally-endorsed SARE score of 1.5 out of 5.0, which is indicative of Ghana's progression towards rabies control. Based on the completed activities identified during the in-country assessment, **Ghana can be broadly defined as a country where the foundational requirements for the development of a national rabies control programme are in place.** To guarantee Ghana's progress along the SARE ladder, and thus achieve freedom from dog-transmitted human rabies by 2030, the national stakeholders need to deliver upon the programmatic activities described in the Ghana Rabies Control and Prevention Action Plan.

NATIONAL ACTION PLAN SUMMARY - Ghana - 2018			
SARE Score:	1.5	Years to Elimination	13
Phase	SARE Stage	Estimated Timeline	Completed
Assessment	0 to 1	Years 1, 2 and 3	Ongoing
Strategic Planning	2	Years 4, 5 and 6	Ongoing
Control	3	Years 7, 8 and 9	Ongoing
Elimination	4	Years 10 and 11	Ongoing
Maintenance	5	Years 12 and 13	Ongoing

Figure 2. Summary output from SARE assessment

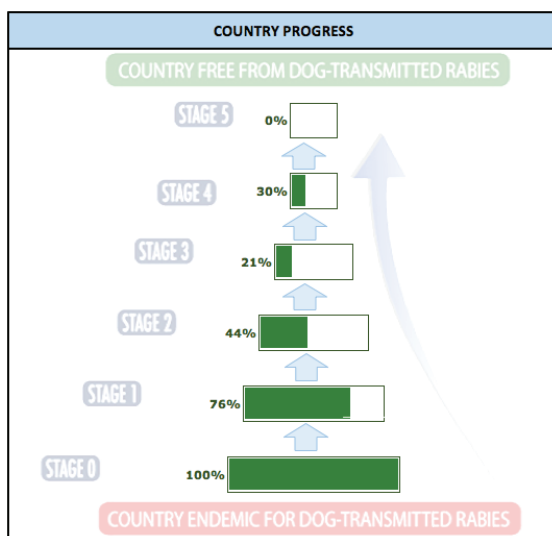


Figure 3. Graphical presentation of country pathway towards elimination of dog-transmitted rabies

ACTIVITY SUMMARY			STAGE SUMMARY			
COMPONENTS	PENDING ACTIVITIES	ACCOMPLISHED ACTIVITIES	STAGE	PENDING ACTIVITIES	ACCOMPLISHED ACTIVITIES	STAGE COMPLETED?
Data collection and analysis	9		0	0	8	COMPLETED
			0.5			COMPLETED
Prevention and Control	14		1	10	32	COMPLETED
			1.5			PENDING
Laboratory diagnosis	4		2	15	12	PENDING
			2.5			PENDING
Dog population related issues	9		3	15	4	PENDING
			3.5			PENDING
Information, Education, Communication	13		4	7	3	PENDING
			4.5			PENDING
Cross-cutting issues	6		5	9	0	PENDING
			5			PENDING
Legislation	1		11			
Scores in increments of 0.5 show progress along a particular stage.						

Figure 4. Overview of the number of accomplished and pending SARE activities, disaggregated by SARE component (left) and SARE stage (right).

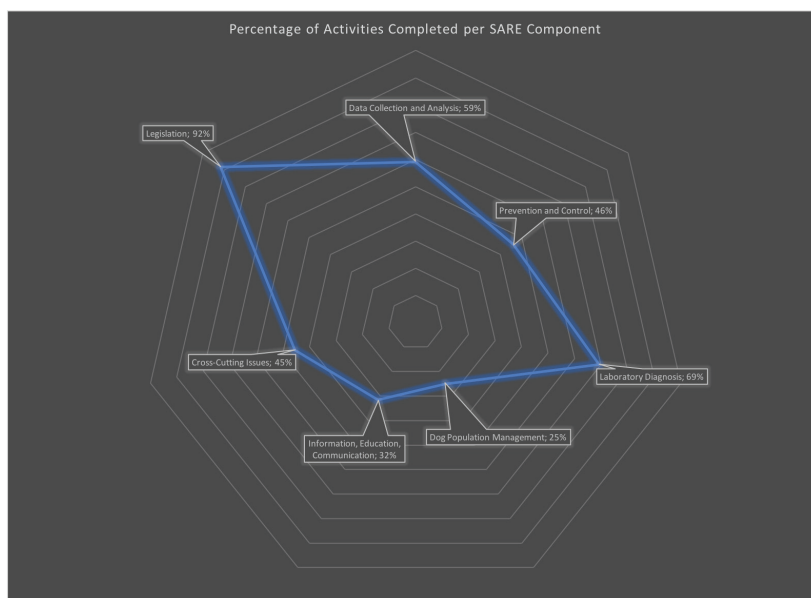


Figure 5. Overview of the percentage accomplished SARE activities, disaggregated by each of the components evaluated in the assessment.

Section 2.1.2: Development of a Practical Work plan

After systematically working through the SARE assessment and determining the pending activities within the country's rabies control efforts, the Practical Work plan component of the SARE tool was used to automatically generate a work plan for the country with i) objectives; ii) outcomes; iii) responsible authorities; iv) timeframes (including Gantt charts); and v) deliverables for each of the pending SARE activities. The meeting participants then adapted each of the work plan activities by adding objectives, modifying the relevant timeframe, customizing the deliverables or key performance indicators (KPIs), altering responsible authorities etc. This approach ensured that a comprehensive work plan was generated in a relatively

short timeframe, enabling the national stakeholders to focus their efforts towards implementation, rather than allocating finite time and resources to undertaking technical-group meetings.

Section 2.1.3: Ghana's Global Dog Rabies Elimination Pathway

Based on the information provided for Ghana, the GDREP tool estimated that human rabies deaths could be eliminated by 2025 and animal rabies deaths could be eliminated by 2028, followed by declaration of Canine Rabies Freedom by 2030. Currently, nearly US\$200,000 is estimated to be spent annually on dog rabies vaccination programs in Ghana. The additional cost to move toward canine rabies elimination is approximately \$41 million USD spread over 13 years.

Summary of results from the analysis: dog vaccination campaign		
Resources needed (annual)		
Total dog population		2,541,382
Dogs vaccinated		76,241
Dogs unvaccinated		2,465,140
Number of additional vaccinated dogs required		1,702,726
Average cost per dog vaccinated		\$2.60
Estimated years until elimination		13
Vaccinators needed during peak campaign years		1,186
Total costs to eliminate		
Net present value (NPV) Phase I		\$1,922,810
Net present value Phase II		\$9,192,814
Net present value Phase III		\$32,377,206
NPV of dog rabies elimination (average)		\$43,492,829
NPV of dog rabies elimination (lower-upper)	(\$33,456,023 - \$75,276,051)	
Additional costs to government		
Range (lower-upper)	(\$31,473,745 - \$70,815,926)	
Total annual cost of dog vaccination (discounted)		

Table 1. Summary analysis of costs associated with dog vaccination campaigns

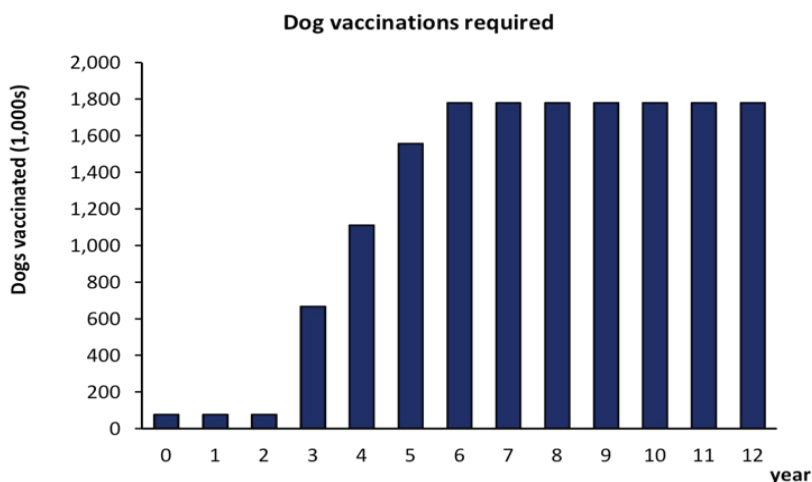


Figure 6. Estimated number of dogs to be vaccinated annually

The total cost of the elimination program will scale up over the course of the phases. During phase I (year 1-3), an additional \$443,000 USD per year will be necessary to strengthen surveillance and vaccination capacity, including demonstration projects to generate data to support scale-up. In phase II (years 4-6), additional funds needed will increase from an estimated \$1.8 Million USD to \$3.9 Million USD per year. This phase will focus in increasing national dog vaccination coverage from <18% to 70%. In phase III (year 7-13), an estimated \$4.4 Million USD per year will be needed to eliminate dog rabies and document rabies free status for the country.

Mean estimate Discounted values	Years	0	1	2	3	4	5	6	7	8	9	10	11	12	Total
Dog vaccines		2.60	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	2.60
Dog vaccinations to reach goal			1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967
Dog vaccinations required		76,241	76,241	76,241	667,113	1,111,855	1,556,596	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967	1,778,967
Vaccinators required if 50 dogs vaccinated per vaccinator daily															
Max capac. dog vaccinations		51	51	51	445	741	1,038	1,186	1,186	1,186	1,186	1,186	1,186	1,186	1,186
Net dog vaccination capacity		375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000	375,000
Current spending on dog vaccination ^a		298,759	298,759	298,759	(292,113)	(736,855)	(1,181,596)	(1,403,967)	(1,403,967)	(1,403,967)	(1,403,967)	(1,403,967)	(1,403,967)	(1,403,967)	(1,403,967)
Cost to vaccinate dog based on phases		\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228	\$198,228
Additional cost from scaling ^a		\$442,709	\$442,709	\$442,709	\$289,082	\$173,449	\$57,816	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total cost to vaccinate dogs		\$640,937	\$640,937	\$640,937	\$2,023,575	\$3,664,271	\$4,194,967	\$4,625,315	\$4,625,315	\$4,625,315	\$4,625,315	\$4,625,315	\$4,625,315	\$4,625,315	\$4,625,315
(Difference total costs with upper estimate)		\$468,377	\$468,377	\$468,377	\$2,199,275	\$2,999,784	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038	\$3,380,038
(Difference total costs with lower estimate)		\$147,308	\$147,308	\$147,308	\$466,979	\$707,140	\$947,300	\$1,067,380	\$1,067,380	\$1,067,380	\$1,067,380	\$1,067,380	\$1,067,380	\$1,067,380	\$1,067,380
Additional spending required (government)		\$442,709	\$442,709	\$442,709	\$1,825,348	\$2,866,043	\$3,906,739	\$4,427,087	\$4,427,087	\$4,427,087	\$4,427,087	\$4,427,087	\$4,427,087	\$4,427,087	\$4,427,087
															\$40,915,868

SECTION 3:

Ghana Rabies Control and Prevention Action Plan

Section 3.1 Data Collection and Analysis

Data Collection and Analysis

Data collection and analysis focuses on the collection, analysis and sharing of the most pertinent data about rabies to the relevant personnel. This includes the analysis and sharing of data at a national level to help stakeholders make the correct decisions regarding funding, the use and allocation of personnel and the improvement of national guidelines and plans for the control of rabies. It also focuses on the flow of analysed data not only from the ground up, but also from national level back down to the ground. This flow of information is vital for effective control, response and future planning to ensure that strategic and effective control plans can be implemented.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Have linked human and animal rabies surveillance systems, including agreed SOPs, been established?	Assess functionality of both human and animal health surveillance systems; Determine what data each system is collecting and what data should be shared; Investigate mechanisms whereby data can be shared; Draft SOPs for inter-sectoral collaboration (surveillance data shared between human and animal sectors); Circulate SOPs for feedback from both sectors (including deadlines for feedback); Finalise SOPs and publish; Ensure data flow between the two systems;	VSD (MoFA) MoH	5	SOPs for inter-sectoral collaboration; Consistency of data from reports between sectors; Number of reports shared with the other sector (human to animal, animal to human);
2	Is information on the epidemiology of rabies regularly shared with all stakeholders?	Identify the relevant stakeholders; Ensure that the stakeholders regularly receive the reports from the surveillance system;	VSD (MoFA) MoH	4	List of relevant stakeholders to receive information; Number of surveillance reports shared with other stakeholders;
2	Is the on-going surveillance system for rabies being maintained?	Assess whether data is collected and reported frequently, including feedback to local level; If not, determine shortcomings; Compile a report on the shortcomings and identify responsible people at each level in the surveillance network; Communicate with responsible people throughout network to try to address the shortcomings and re-initiate effective surveillance;	VSD (MoFA) MoH	6	Report on the assessment of the current system and its functionality including budgetary requirements; Data consistency and quality assessment report: Number of reports generated over time: Frequency of reports over time;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	As your country nears human rabies elimination, have field investigations for all suspected human rabies cases been conducted?	Determine whether effective surveillance is in place to detect suspect human cases; Ensure rapid reporting of suspect human cases from local to national level; Ensure feedback of analysed data back to local level; Ensure that protocols (SOPs) for case investigation and response based on surveillance are in place and known by all relevant professionals; Ensure that the relevant professionals are equipped with the relevant resources to investigate suspect human rabies cases; Ensure action and case investigation based on feedback; Ensure the outcomes of the investigations are reported to the national level;	VSD (MoFA) MoH	8	Report on efficacy of existing surveillance system; SOPs finalised and available; Number of suspect human cases; Number of human case investigations undertaken;
3	As your country nears human rabies elimination, is epidemiological data being collected to provide evidence of dog-transmitted human rabies-free zones?	Ensure that an effective surveillance system for the detection of all suspect human rabies cases is in place and maintained; Ensure that effective field investigations of all suspect human rabies cases are on-going; Compile all relevant data regarding the positive and negative diagnosis of all suspect rabies cases;	VSD (MoFA) MoH	8	Number of case investigations generated over time; Frequency of case investigations over time; Number of suspect rabies cases; Number of positively diagnosed suspect rabies cases; Number of negatively diagnosed suspect rabies cases;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Now that there are very few animal rabies cases in your country, are field investigations and laboratory confirmations conducted for all suspected rabies outbreaks in dogs?	Determine whether effective surveillance is in place to detect suspect animal rabies cases; Ensure protocols for a risk-assessment of suspect animals are in place and known by all relevant professionals; Ensure that the relevant professionals are equipped with the relevant resources to investigate suspect animal rabies cases; Ensure that all suspect animal rabies cases (after undertaking a risk assessment) are submitted for laboratory diagnosis; Ensure rapid reporting of laboratory results from the suspect animal cases to national level; Ensure feedback of analysed data back to local level for action (e.g. for outbreak response).	VSD (MoFA) MoH	9	Number of outbreaks reported; Number of outbreak responses; Number of suspect samples collected; Number of suspect samples laboratory diagnosed; Number of diagnostic reports sent to national level; Number of feedback reports sent to local level;
4	As there are no more laboratory confirmed human rabies cases, are existing surveillance activities for all suspected cases in humans maintained in the country?	Ensure that all encephalitic cases are reported frequently to the national level; Ensure that case investigations of each encephalitic case are undertaken; Generate and disseminate reports on the case investigations with all relevant stakeholders;	MoH	11	Number of suspect human rabies cases reported; Number of suspect human rabies cases investigated; Number of positively diagnosed suspect rabies cases; Number of negatively diagnosed suspect rabies cases;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
4	As your country nears dog-rabies elimination, has the epidemiological data from the routine surveillance of all animals (not only dogs) been used to refine the national rabies strategy?	Compile and review epidemiological data based on surveillance in other animal species, including wildlife; Identify remaining areas with dog-rabies (hotspots); Identify additional possible reservoir species (e.g. wild carnivores); Identify methods to vaccinate and control rabies in additional identified reservoir species; Compile a report, including budget and resources required, with the findings and recommendations; Share report with national task force for integration and updating of national rabies control strategy; National rabies control and elimination strategy refined based on the report;	VSD (MoFA) and all other stakeholders involved in development and implementation of the national strategy; led by the personnel responsible for data collection and analysis	10	Report on findings and associated budget including: Information on epidemiological data based on surveillance in other animal species; Locations of remaining hotspots/high-risk areas; Information on additional reservoir species; Updated national strategy;
5	Has freedom from dog-transmitted rabies in the entire country been verified by the absence of canine variant cases for at least a 2- year period?	Ensure ongoing sample collection and routine rabies diagnosis from the entire country; Ensure adequate case investigation is maintained throughout the country; Compile epidemiological reports with up-to-date surveillance data showing absence of the disease; If any rabies-positive cases are detected, subject the samples to molecular or antigenic typing to determine the variant;	VSD (MoFA)	13	The number of suspect rabies samples diagnosed; Number of rabies-negative samples identified; Number of rabies-positive samples diagnosed; Number of rabies-positive samples subjected to characterisation; Vaccination coverage map;

Section 3.1.1: Timelines for Pending Activities (2018-2030)

Towards Data Collection and Analysis

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Have linked human and animal rabies surveillance systems, including agreed SOPs, been established?													
Is information on the epidemiology of rabies regularly shared with all stakeholders?													
Is the on-going surveillance system for rabies being maintained?													
As your country nears human rabies elimination, have field investigations for all suspected human rabies cases been conducted?													
As your country nears human rabies elimination, is epidemiological data being collected to provide evidence of dog-transmitted human rabies-free zones?													
Now that there are very few animal rabies cases in your country, are field investigations and laboratory confirmations conducted for all suspected rabies outbreaks in dogs?													
As there are no more laboratory confirmed human rabies cases, are existing surveillance activities for all suspected cases in humans maintained in the country?													

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
As your country nears dog-rabies elimination, has the epidemiological data from the routine surveillance of all animals (not only dogs) been used to refine the national rabies strategy?													
Has freedom from dog-transmitted rabies in the entire country been verified by the absence of canine variant cases for at least a 2-year period?													

Section 3.2: Prevention and Control

Prevention and Control

The control of rabies within dog populations through vaccination is the most important factor in the process towards achieving dog-mediated human rabies elimination. Dog vaccination has been shown to be the only economically feasible and sustainable approach towards interrupting disease transmission and eventually eliminating rabies in both humans and dogs.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Has the supply and access to nationally licensed human rabies vaccines for PrEP for professionals at risk been ensured in local areas?	Identify project sites where high-risk professionals are operating (e.g. laboratories and vet clinics in a few districts of importance); Identify number of high-risk professionals that require a full course of rabies PrEP; Identify number of high-risk professionals that require a booster vaccination; Ensure health facilities in target areas have sufficient PrEP to meet the requirements of the professionals in the area; Ensure staff in health facilities have adequate training to effectively administer PrEP; Allocate budget towards purchasing PrEP	VSD (MoFA) MoH	2	Number of project sites identified at local areas; Number of professionals identified at each project site; Number of vaccines obtained; Number of professionals that received a full course of PrEP; Number of professionals that received a booster vaccination; Number of professionals with adequate antibody titres for protection;
2	Has an assessment been done to determine the availability and access to PEP (and PrEP)?	Compile a list of all health facilities that would be able to store and administer PEP and PrEP; Determine coverage area of healthcare facility that have been identified; Contact health facilities to determine whether vaccine and RIG stock is available; Undertake a training "needs-assessment" to determine competency of staff; Compile a report on the health facilities that have access to PEP and PrEP;	MoH; District Directorate Health Services	1	Report on health facilities: List of health facilities capable of storing and administering PEP and PrEP; Number of health facilities with vaccine and RIG available; Training needs assessment and budget;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Are WHO pre-qualified (or equal high quality) human rabies vaccines available and accessible in most parts of the country?	Update the existing information (training, infrastructure, storage capacity, availability of high quality vaccines) that is already collected for each of the healthcare facilities; Compile a report based on the needs assessment for all of the health facilities, including recommendations; Develop plan for addressing needs for ~70% of the facilities in the country; Develop budget and secure resources for plan; Implement plan so that WHO pre-qualified vaccines are available in ~70% of facilities throughout the country;	MoH	3	Needs assessment report; Plan of action to have WHO pre-qualified vaccine available in most of the country; Number of facilities with WHO pre-qualified vaccine; Number of facilities without WHO pre-qualified vaccines;
	Have IBCM SOPs, including sharing of information between sectors, been agreed upon at a national level?	Develop SOPs for coordinated IBCM at the national level; Share drafted SOP with all relevant authorities for feedback (including a deadline for feedback); Refine SOP based on feedback; Finalise and publish SOP; Share with all relevant professionals at the local level;	VSD (MoFA) MoH; MLGRD Ministry of Interior	2	SOPs for IBCM at national level; Number of professionals who received the updated SOPs;
3	Are WHO pre-qualified vaccines and RIG available and accessible to high risk and exposed individuals throughout the country?	Conduct a needs assessment for the availability of vaccine and RIG in health facilities across the country including: training, infrastructure, storage capacity, availability of WHO pre-qualified vaccines; Compile a report based on the needs assessment, including recommendations; Develop plan for addressing needs for the remaining facilities lacking WHO-pre-qualified vaccine and/or RIG in the entire country; Develop budget and secure resources for plan; Implement plan so that WHO pre-qualified vaccines and RIG are available in all facilities throughout the country;	MoH	8	Needs assessment report; Action plan to address identified shortcomings; Budget; Number and percentage of facilities with access to WHO pre-qualified vaccine; Number and percentage of facilities with access to Rabies Immunoglobulin (RIG);

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Are Mass Dog Vaccination (MDV) campaigns reaching at least 70% of the total dog population conducted according to the plan described in the national rabies strategy?	Review literature to identify most sustainable approach for conducting an MDV campaign; Develop and finalise SOPs based on the identified approach for the planning and implementation of MDV campaigns; Share the SOPs throughout the country; Train relevant professionals on the implementation of the MDV SOPs; Estimate the number of dogs that will need to be vaccinated; Procure sufficient quantities of animal rabies vaccine and associated consumables; Secure funding and resources for the implementation of the MDV campaigns; Determine vaccination coverage; Revise MDV campaign strategy where needed; Continue implementation until 70% coverage throughout the country;	VSD (MoFA) MMMDA's	13	MDV plan and budget; percentage of budget obtained; SOPs; Number of professionals trained; Dog population estimate; Number of vaccine doses; Number of dogs vaccinated; Vaccination coverage;
3	Are post-vaccination surveys in dogs being carried out to evaluate vaccination coverage?	Review literature and determine the best method to evaluate vaccination coverage for each area; Develop post-vaccination survey SOPs; Identify and train professionals on the post-vaccination survey SOPs; Determine the vaccination coverage after each of the MDV campaigns;	VSD (MoFA)	13	SOPs; Number of professionals trained; Number of surveys completed; Number of dogs vaccinated; Estimated dog population; Vaccination coverage;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Have potential rabies-free zones been identified where animal rabies cases caused by the canine rabies variant have been absent for at least a 2-year period?	Ensure ongoing sample collection and routine rabies diagnosis from identified area(s); Compile epidemiological reports with up to date surveillance data showing absence of the disease; Identify areas where epidemiological data reflects the absence of rabies for 2 years;	VSD (MoFA)	8	The number of suspect rabies samples diagnosed; Number of rabies-negative samples diagnosed; Percentage of samples diagnosed that are rabies-negative; Surveillance reports; Areas identified;
	Has dialogue been initiated with neighbouring countries to prevent the re-introduction of rabies into designated rabies-free zones?	Identify relevant authorities in neighbouring countries; Share and discuss epidemiological data of rabies-free zones and surrounding areas; Share MDV campaign details with neighbouring authorities; Identify possible ways to prevent re-introduction of rabies;	VSD (MoFA) MoH, MLGRD	7	Number of relevant neighbouring authorities contacted; Number of epidemiological reports shared; MDV campaign details shared; Number of areas where dog rabies is still present; Number of areas at risk of introduction identified; Needs assessment report; Number of MDV campaigns in target areas;
4	Now that there are very few animal rabies cases in your country, are dog vaccination campaigns maintained in zones where dog rabies is still present or where otherwise justified (e.g. risk of introduction)?	Identify areas where dog rabies is still present; Identify areas where risk of introduction is high; Perform a needs assessment for the identified areas; Allocate additional resources and professionals based on the findings of the needs assessment; Continue MDV campaigns in identified areas according to the national strategy;	VSD (MoFA), MMDA's	10	

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
4	Now that there are very few animal rabies cases in your country, has an emergency response/contingency plan been developed to address any reintroduced case of animal rabies involving a canine variant in rabies-free zones?	Emergency plan drafted and shared with relevant authorities; Emergency plan updated with feedback; Secure funding for the possible implementation of the emergency plan; Ensure that the relevant personnel are trained and resourced for the possible implementation of the plan;	National Rabies taskforce	9	Emergency plan; Amount of funding available; Number of Professionals trained;
	Now that your country is free from human and animal rabies, have modified protocols for PEP administration for rabies-free areas been implemented?	Assess applicability of existing SOPs for implementation in rabies-free areas with regards to current WHO guidelines; Modify SOPs in accordance with the guidelines; Share updated SOPs with relevant professionals; Train professionals on the use of the updated SOPs; Ensure that the updated SOPs are implemented country-wide;			Modified SOPs; Number of professionals receiving the SOPs; Number of professionals trained; Number of case investigations; Number of high-risk case investigations undertaken; Number of cases receiving a full course of PEP based on the outcomes of the risk-assessment;
5			MoH	10	

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
5	Even though you are rabies free based on successful mass vaccination campaigns, are strategic dog vaccination campaigns maintained where justifiable?	Identify areas considered a high-risk for the re-introduction of canine-rabies; Perform a needs assessment for the identified areas; Allocate resources and professionals to the identified areas; Implement strategic vaccination in the identified areas;	VSD (MoFA), MMDA's	12	Number of high-risk areas identified; Needs assessment; Amount of funding available; Number of MDV campaigns implemented in identified areas;
	Even though you are rabies free based on successful mass vaccination campaigns, has the capacity for outbreak and re-introduction response been maintained?	Regularly review and update the established SOPs for outbreak response; Share SOPs with new professionals working in the local areas; Professionals regularly trained on all relevant rabies intervention activities (e.g. outbreak response, animal handling and vaccination; case investigation, etc.); Ensure that adequate funding and resources remain available for possible intervention;	VSD (MoFA) MoH	12	SOPs reviewed and updated where necessary; Percentage of new professionals receiving SOPs; Number of professionals trained each year; Amount of funding available;

Section 3.2.1: Timelines for Pending Activities (2018-2030) Towards Prevention and Control

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Has the supply and access to nationally licensed human rabies vaccines for PrEP for professionals at risk been ensured in local areas?													
Has an assessment been done to determine the availability and access to PEP (and PrEP)?													
Are WHO pre-qualified (or equal high quality) human rabies vaccines available and accessible in most parts of the country?													
Have IBCM SOPs, including sharing of information between sectors, been agreed upon at a national level?													
Are WHO pre-qualified vaccines and RIG available and accessible to high risk and exposed individuals throughout the country?													
Are mass dog vaccination campaigns reaching at least 70% of the total dog population conducted according to the plan described in the national rabies strategy?													
Are post-vaccination surveys in dogs being carried out to evaluate vaccination coverage?													
Have potential rabies-free zones been identified where animal rabies cases caused by the canine rabies variant have been absent for at least a 2-year period?													
Has dialogue been initiated with neighbouring countries to prevent the re-introduction of rabies into designated rabies-free zones?													

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Now that there are very few animal rabies cases in your country, are dog vaccination campaigns maintained in zones where dog rabies is still present or where otherwise justified (e.g. risk of introduction)?													
Now that there are very few animal rabies cases in your country, has an emergency response/contingency plan been developed to address any reintroduced case of animal rabies involving a canine variant in rabies-free zones?													
Now that your country is free from human and animal rabies, have modified protocols for PEP administration for rabies-free areas been implemented?													
Even though you are rabies free based on successful mass vaccination campaigns, are strategic dog vaccination campaigns maintained where justifiable?													
Even though you are rabies free based on successful mass vaccination campaigns, has the capacity for outbreak and re-introduction response been maintained?													

Section 3.3: Laboratory Diagnosis

Laboratory Diagnosis

Successful rabies control and elimination projects have shown that evidence-based diagnostic and surveillance strategies are needed to determine the distribution and prevalence of rabies outbreaks. Diagnostic results not only act as a direct and measurable burden indicator, but also serve to direct limited resources to high-risk areas within defined geographical areas. Despite the critical role that rabies surveillance plays in the disease control programmes, it is often poorly resourced, resulting in a continued cycle of neglect.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Has capacity for regular sample collection and transportation been established and functioning?	Perform a needs assessment relating to the current capacity to collect, preserve and transport samples (termed: sample management); Research alternative/improved methods for sample management; Identify best means to improve samples management; Develop a budget and secure funding for the implementation of improved means for sample management; Implement and assess course of action on a small-scale to determine its efficacy; Generate a report on the small-scale project investigating the improved sample management mechanisms; Develop, finalise and distribute SOP based on improved methods for sample management for use throughout the country;	VSD (MoFA) MoH	5	Barriers to sample collection, preservation and transportation identified and addressed; Number of samples received per month; List of the locations of the samples received; Final SOP for sample collection and transport developed and distributed;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Is access to reliable laboratory diagnosis available throughout the country for animal samples (and if possible, also for human and wildlife samples)?	Identify areas in the country where reliable laboratory diagnosis is not available; Perform a needs assessment to determine why reliable lab diagnosis is not available in these areas; Identify means to address the shortcomings identified (e.g. poor sample collection and transport, lack of reagents, lack of trained staff, etc.); Create budget and secure funding to address the identified shortcomings; Address the highlighted shortcomings; Regularly monitor frequency of sample submission and diagnosis from identified areas;	VSD (MoFA) MoH KCCR Private Vet	8	Number of suspect rabies samples arriving at the laboratory for diagnosis from the identified areas; All areas in country submit all rabies suspect samples for animals; List of diagnostic outcomes for all suspect rabies samples throughout the country;
4	Now that there are very few animal rabies cases in your country, is there maintenance of existing surveillance activities, including ongoing laboratory investigation, for all suspected cases in dogs in the country?	Regularly review and update the established SOPs for sample collection, transport and lab diagnosis; Share SOPs with new professionals working in the local areas; Professionals regularly trained on all relevant rabies surveillance activities (e.g. sample collection, sample transport, laboratory diagnosis, etc.); Ensure that adequate funding and resources remain available for continued surveillance activities;	VSD (MoFA) MoH, Research Institutions	10	Number of suspect rabies samples diagnosed; Number of samples diagnosed per month; Number of samples diagnosed per area in the country; Number of rabies-negative samples diagnosed;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
5	Even though you are rabies-free based on successful mass vaccination campaigns, are there on-going laboratory investigations of all suspected cases in domestic and terrestrial wild animal (carnivore) species in the country?	Identify barriers that prevent on-going surveillance in the country; Re-convene relevant stakeholders for rabies control to highlight the importance of continued surveillance after freedom from dog rabies and the potential for wildlife rabies spill over; Develop a short-term action plan with the relevant stakeholders to re-initiate surveillance in high-risk areas (e.g. those with wildlife vectors or those bordering endemic countries);	VSD (MoFA), NGOs	13	Number of rabies-suspect samples in domestic and terrestrial wild animals; Number of diagnosed rabies-suspect samples in domestic and terrestrial wild animals;

Section 3.3.1: Timelines for Pending Activities (2013-2030) Towards Laboratory Diagnosis

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Has capacity for regular sample collection and transportation been established and functioning?													
Is access to reliable laboratory diagnosis available throughout the country for animal samples (and if possible, also for human and wildlife samples)?													
Now that there are very few animal rabies cases in your country, is there maintenance of existing surveillance activities, including ongoing laboratory investigation, for all suspected cases in dogs in the country?													
Even though you are rabies-free based on successful mass vaccination campaigns, are there on-going laboratory investigations of all suspected cases in domestic and terrestrial wild animal (carnivore) species in the country?													

Section 3.4: Dog Population Management

Dog Population Management

Dog population management (DPM) is a concept consisting of many approaches that aims to improve the health and wellbeing of free-roaming and owned dogs and reduce problems they may present. DPM ties in closely with the vaccination of dogs, their humane treatment, and population control through various strategies such as responsible ownership and sterilization. DPM advocates against dog culling.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Have discussions been held with stakeholders to create a dog population management strategy at a local level?	Identify relevant stakeholders involved in DPM at the local level; Review existing DPM strategies from literature and guidelines for informed discussion with stakeholders; Hold discussions regarding a local-level DPM strategy; Generate timelines for the drafting of a strategy for review and implementation;	VSD (MoFA) CSOs Kennel Clubs Animal welfare organisations, MMDA'S	3	Number of stakeholders identified; Final timelines and deadlines available;
1	Have you involved officials in waste management in your stakeholder meetings	Determine responsible and reliable contact within waste management sector; Invite identified official to stakeholder meetings for a local DPM strategy;	VSD (MoFA) Animal welfare organisations MMDA's	1	Role of waste management sector in DPM clearly defined;
2	Has a DPM strategy and programme been drafted and shared with all relevant stakeholders at a local level?	Draft a local DPM strategy based on stakeholder consultations; Share the drafted DPM strategy with all relevant stakeholders for review and feedback; Deadlines for feedback and finalisation of strategy agreed upon;	VSD (MoFA) CSOs Kennel Clubs Animal welfare organisations, MMDA's	5	Draft DPM strategy; Deadlines for finalisation agreed upon;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Has the DPM strategy been finalized and implemented?	Finalise DPM strategy based on stakeholder feedback; Ensure that the DPM strategy is recognised / endorsed by competent authority; Identify resources and responsible authorities for the implementation of the local DPM strategy; Secure funding for the implementation of the DPM strategy at the local level; Circulate the final version of strategy to all relevant professionals; Train all relevant professionals in the implementation of the DPM strategy; Implementation of DPM strategy at local level;	VSD (MoFA) CSOs Kennel Clubs Animal welfare organisations, MMDA's	7	Finalised DPM strategy; Percentage of funding available per DPM strategy; Number of professionals trained; Number of dogs reached;
2	Have training or refresher courses on responsible dog management been initiated for professionals in animal health at a local level?	Perform needs assessment to determine level of training regarding DPM for professionals; Identify effective and relevant training course material for training; Identify and secure funding to undertake training courses; Identify logistical requirements (venue, time, date etc.) to undertake refresher course for professionals; Initiate training on responsible dog management for professionals at the local level;	VSD (MoFA) Animal welfare organisations MMDA's	7	Needs assessment report; Number of professionals trained; Amount of resources available;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Has the DPM strategy been assessed and refined based on current dog ecology or KAP surveys done at a local level?	If no data available, undertake KAP or dog ecology surveys at local level; Assess data collected from surveys and analyse in relation to current DPM strategy; Convene all relevant stakeholders for DPM to re-assess DPM strategy, based on updated dog ecology data; Review and finalise revised strategy; Secure funding to implement the revised DPM strategy; Officially document updated strategy;	VSD (MoFA) Animal welfare organisations MMDAs	8	Number of surveys undertaken; Report on survey findings; Updated DPM strategy; Percentage of funding available of the DPM strategy;
	Has veterinary and animal technician training been completed across most of country?	Develop plan to expand training plan from local areas to the remainder of the country; Identify and secure funding to undertake training courses; Identify logistical requirements (venue, time, date etc.) to undertake training for professionals; Initiate training of professionals across the country; Assess efficacy and reach of training courses to ensure that professionals have been trained across most of the country;			Training plan; Percentage of funding available as per plan; Number of professionals trained; Report on efficacy of training plan implementation;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
5	Has the dog population management strategy been implemented nationwide?	Identify relevant stakeholders at a national level for DPM; Ensure that national stakeholders review local-level DPM strategies; Adapt local-level DPM strategies based on feedback and discussions; Develop a national DPM strategy based on local level experiences/strategies, ensuring support and continuation of local strategies; Secure funding and resources for the implementation of the national DPM strategy; Finalise, endorse and document the national DPM strategy; Train all relevant professionals in the implementation of the national DPM strategy, where required; Implement national strategy at all levels, including support to local-level strategies and stakeholders;	VSD (MoFA) Animal welfare organisations MLGRD	12	National DPM strategy; Percentage of funding available as per national DPM strategy; Number of professionals trained; Number of dogs reached;
5	Have dog population management and responsible dog ownership campaigns been continued after the elimination of canine-mediated human rabies?	Regularly review and update the established SOPs for DPM; Share SOPs with new professionals working in the local areas; Professionals regularly trained on all relevant DPM activities; Ensure that adequate funding and resources remain available for the continuation of the DPM strategy; Continue public awareness and public sensitisation regarding the importance of DPM;	VSD (MoFA) National DPM stakeholders	12	Updated SOPs (where required); Percentage of new professionals receiving SOPs; Number of professionals trained each year; Amount of funding available; Number of dogs reached; Number of public awareness messages disseminated;

Section 3.4.1: Timelines for Pending Activities (2013-2030)

Towards Dog Population Management

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Have discussions been held with stakeholders to create a dog population management strategy at a local level?													
Have you involved officials in waste management in your stakeholder meetings													
Has a DPM strategy and programme been drafted and shared with all relevant stakeholders at a local level?													
Has the DPM strategy been finalized and implemented?													
Have training or refresher courses on responsible dog management been initiated for professionals in animal health at a local level?													
Has the DPM strategy been assessed and refined based on current dog ecology or KAP surveys done at a local level?													
Has veterinary and animal technician training been completed across most of country?													
Has the dog population management strategy been implemented nationwide?													
Have dog population management and responsible dog ownership campaigns been continued after the elimination of canine-mediated human rabies?													

Section 3.5: Information, Education, and Communication

Information, Education, and Communication

Public education and awareness regarding rabies and its prevention is one of the key components of successful disease intervention campaigns. The public needs an understanding of rabies, the dangers of the disease and the challenges faced with controlling the disease. Without public knowledge and participation, mass vaccination campaigns will be unsuccessful, and the rabies control program will likely fail. Thus, successful community awareness campaigns should ideally rely on a structured Information, Education and Communication (IEC) plan that has agreed objectives, audiences, messages, channels and timelines to increase awareness of, and participation in, rabies prevention and control.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Has an IEC plan been developed and implemented on a small scale?	Do a literature search for any existing IEC plans for rabies (Search through the Rabies Blueprint); Draft an IEC plan based on identified target audiences and unique messages; Review drafted IEC plan with relevant stakeholders including specific deadlines for feedback; Finalise the IEC plan and ensure that it is recognized by all relevant stakeholders; Ensure sufficient resources and finances to implement IEC plan; Implement IEC plan at a local level / small-scale;	Ministry of Communication Ministry of Information MoH VSD (MoFA) MoE MMDA's Ministry of Interior NCCE Ministry for Private Sector Development Ministry of Chieftaincy NADMO Civil Society	4	IEC plan developed for a small-scale area;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Has an assessment been undertaken to determine the training needs of the professionals at a local level?	Design an assessment (e.g. KAP survey) to determine current knowledge of professionals about rabies at local level; Acquire resources and funding to undertake the assessment at the local level; Determine best time(s) and date(s) for the assessment to be undertaken to ensure best coverage of all professionals in all sectors; Undertake the assessment in the target area; Assess results of assessment to identify gaps in knowledge within the professional population; Compile a report of the findings of the assessment with recommendations;	VSD (MoFA), MoE (School of Public Health) MoH KNUST (Veterinary School)	3	Number of professionals surveyed; Report on the recommendations for training needs compiled;
1	Has a training plan been developed at a national level?	Review assessment of training needs of professionals undertaken at local levels; Identify appropriate sources for the training of the professionals; Based on these results, draft a national training plan for professionals involved in rabies control and elimination; Review draft plan with all relevant stakeholders; Finalise the plan and ensure that it is recognised by all of the relevant stakeholders; Ensure that the national plan is also communicated to all relevant stakeholders at the local levels;	MoE (School of Public Health) MoH VSD (MoFA), Ministry of Sanitation and Water Resources (Environmental Health and Sanitation Directorate) MMDA's	4	National training plan finalised and recognised by all relevant stakeholders;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Have training or refresher courses on rabies and public communication been initiated for professionals in human and animal health at a local level?	Identify effective and relevant training course material for training; Identify and secure funding to undertake training courses; Identify logistical requirements (venue, time, date etc.) to undertake training/refresher courses for professionals (nurses, animal health technicians, etc); Initiate training for professionals (nurses, animal health technicians, etc) at the local level based on the national plan; Identify the relevant course material and training modules to be integrated into school curricula for training institutions	MoH VSD (MoFA) MoE (School of Public Health) MMDA's NCCE Private sector and Professional bodies, professional training institutions	5	Number of trainings held; Number of professionals trained; Number of sectors involved in trainings courses;
1	Has an advocacy stakeholder analysis been done at a national level and target audiences been identified?	Identify the relevant people and organisations who play a role in rabies prevention and control; Determine the most effective ways to help make rabies a priority for the identified stakeholders;	MoH VSD (MoFA)	1	Demographics of target audiences; Report identifying relevant stakeholders;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Has an advocacy plan been developed and implemented at a national level?	Do a literature search for any existing advocacy plans for rabies (e.g. Rabies Blueprint); Draft an advocacy plan based on identified target audiences and stakeholder analysis; Review drafted advocacy plan with relevant stakeholders including specific deadlines for feedback; Finalise the advocacy plan and ensure that is recognized by all relevant stakeholders; Ensure sufficient resources and finances to implement the advocacy plan; Implement advocacy plan at the national level;	Ministry of Communication Ministry of Information MoH VSD (MoFA) MoE MMDA's Ministry of Interior NCCE Ministry for Private Sector Development Ministry of Chieftaincy NADMO Civil Society Coalition of NGOs in Health	3	A national advocacy plan developed and recognised;
	Has training of human and animal health personnel been conducted in most parts of the country?	Re-evaluate training needs of professionals throughout country with surveys, studies, and feedback from local level training plans; Determine whether target professionals have been trained in most parts of the country; Identify areas where further training is required; Secure funding and resources required to undertake additional training workshops; Ensure that all relevant human and animal health personnel have been trained in most parts of the country.	MoH VSD (MoFA) MoE (School of Public Health) MMDA's, NCCE Professional Training Institutions Private sector and Professional bodies	10	Number of professionals requiring training; Number of professionals trained;
2					

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Has the national advocacy plan been used to obtain support from stakeholders to financially resource the national rabies control strategy?	Identify potential funders and partners who could resource the national rabies control strategy; Determine as to how the national advocacy plan can be used to leverage the identified partners and funders to financially resource the national rabies control strategy; Share small-scale successes throughout the country with potential partners and funders; Obtain financial and logistical support from the relevant partners and funders that have been identified;	Ministry of Communication Ministry of Information MoH VSD (MoFA) MoE MMDA's Ministry of Interior NCCE Ministry for Private Sector Development Ministry of Chieftaincy NADMO Civil Society Coalition of NGOs in Health	4	Number of stakeholders approached; Number of stakeholders pledging support; Financial amount pledged towards the national rabies control strategy;
	Has the IEC plan been integrated into the national rabies strategy, implemented at national level and updated where needed?	Review IEC plan from local level; Update plan accordingly to make it applicable for national level implementation; Review national rabies control strategy and determine how IEC plan can be integrated; Integrate relevant IEC plan into National rabies control strategy; Have updates on national rabies control strategy endorsed; Implement updated national rabies control strategy, including implementation of IEC components;	Ministry of Communication Ministry of Information MoH VSD (MoFA); All other stakeholders involved in development of National Rabies control strategy	7	National rabies control strategy with integrated IEC plan;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Have dog-transmitted human rabies free zones been declared publicly?	Identify rabies-free zones; Inform the entire country of successes and freedom from dog-transmitted human rabies in the identified zones using the national advocacy plan;	Ministry of Communication Ministry of Information MoH VSD (MoFA); MMDAs All other stakeholders involved in development of National Rabies control strategy	9	Number of broadcasts per dog-transmitted human rabies-free areas; Estimated number of people reached;
4	Have you declared publicly that your entire country is free from dog-transmitted human rabies?	Assess data to determine whether country has been free from dog-transmitted human rabies for 2 years; Ensure surveillance is adequate to confirm data; Refer to national advocacy plan to determine most effective means to proclaim freedom from human rabies; Allocate resources and identify most appropriate personnel to do declaration; Declare country free from dog-transmitted human rabies at a national level;	Ministry of Communication MoH VSD (MoFA); All other stakeholders involved in development of National Rabies control strategy	11	Number of broadcasts declaring freedom from dog-transmitted human rabies; Estimated number of people reached; International recognition of dog-transmitted human rabies-free status;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
5	Have awareness programmes focusing on the maintenance of freedom from dog and dog-transmitted human rabies been implemented?	Revise IEC plan to incorporate continued awareness campaigns after the declaration of freedom from dog-mediated human rabies; Determine whether awareness messages will need to change as the country is now free from dog-mediated human rabies; Include messages regarding the possible risk of rabies transmission from terrestrial wildlife carnivores; Determine what awareness campaigns would be most appropriate for target audience; Secure funding and resources to continue awareness campaigns after declaration of freedom from dog rabies; Implement relevant IEC plan and broadcast relevant messages to public;	Ministry of Communication Ministry of Information MoH VSD (MoFA) MMDAs CSOs	13	Number of awareness messages broadcast; Estimated number of people reached; Number of new public awareness messages developed;
5	Have you declared publicly that your entire country is free from dog rabies?	Assess data to determine whether country has been free from dog-rabies for 2 years; Ensure surveillance is adequate to confirm data; Refer to national advocacy plan to determine most effective means to proclaim freedom from dog rabies; Allocate resources and identify most appropriate personnel to do declaration; Declare country free from dog-rabies at a national level;	Ministry of Communication Ministry of Information MMDAs MoH VSD (MoFA); All other stakeholders involved in development of National Rabies control strategy	13	Number of broadcasts declaring freedom from dog-rabies; Estimated number of people reached; International recognition of dog-rabies-free status;

Section 3.5.1: Timelines for Pending Activities (2013-2030)

Towards Information, Education and Communication

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Has an IEC plan been developed and implemented on a small scale?													
Has an assessment been undertaken to determine the training needs of the professionals at a local level?													
Has a training plan been developed at a national level?													
Have training or refresher courses on rabies and public communication been initiated for professionals in human and animal health at a local level?													
Has an advocacy stakeholder analysis been done at a national level and target audiences been identified?													
Has an advocacy plan been developed and implemented at a national level?													
Has training of human and animal health personnel been conducted in most parts of the country?													
Has the national advocacy plan been used to obtain support from stakeholders to financially resource the national rabies control strategy?													

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Has the EC plan been integrated into the national rabies strategy, implemented at national level and updated where needed?													
Have dog-transmitted human rabies free zones been declared publicly?													
Have you declared publicly that your entire country is free from dog-transmitted human rabies?													
Have awareness programmes focusing on the maintenance of freedom from dog and dog-transmitted human rabies been implemented?													
Have you declared publicly that your entire country is free from dog rabies?													

Section 3.6: Cross-cutting Issues

Cross-cutting Issues

The successful control and elimination of rabies has been shown to rely on a unified approach at both the national and regional levels, with additional support arising from global human and animal health organisations. The One Health approach exemplifies inter-sectoral communication and collaboration, where different disciplines combine their skills and resources towards a common, achievable goal. Due to the zoonotic nature of rabies, both the medical and veterinary sector must be included and must be active in the rabies control strategy so that all the multiple aspects of rabies can be successfully addressed.

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
1	Has an intersectoral rabies task force, committee or working group, including all relevant stakeholders, been established at a local or national level and do they meet/communicate regularly?	Contact previous members of committees and re-engage in task force; Identify barriers preventing task force stakeholders from meeting on a regular basis; Re-evaluate existing taskforce TORs and ensure that they are recognised by all taskforce members; Investigate mechanisms whereby regular communication can be ensured;	MoH MoF VSD (MoFA) MoE MMDAS NADMOS Ministry of Lands and Natural Resource; Ministry of Interior Research/Training institutions (e.g. Universities) Local authorities NGOs Representation from international bodies (e.g. CDC, OIE, FAO, WHO, GARC)	1	Number of stakeholders involved in taskforce; TORs developed;
2	Is the private sector included in the inter-sectoral task force's discussions and/or activities?	Identify relevant members of private sector; Contact relevant professionals within private sector; Secure buy-in and support from professionals in the private sector; Ensure the participation of the relevant stakeholders from the private sector in the inter-sectoral task force's discussions and activities;	Multi-sectoral task force	1	Number of private sector stakeholders identified; Number of private sector stakeholders included into the national inter-sectoral task force;

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
2	Has a national strategy for rabies prevention, control and elimination been drafted and finalised in collaboration with all relevant stakeholders?	Ensure that the national strategy has been endorsed by all relevant stakeholders; Finalize and endorse national strategy; Incorporate human rabies strategy and submit to Ministry of Health for review;	Multi-sectoral task force	3	National rabies control and elimination strategy available; Endorsement from all stakeholders;
2	Have government resources been identified and allocated in support of the national rabies control strategy?	Develop budget for proposal using the GDREP tool or any other relevant budgetary assessment; Identify funding sources within the government and also all other relevant stakeholders; Ensure buy-in and endorsement from governmental authorities with regards to the proposal and associated budget; Secure funding for national rabies control strategy; Establish mechanisms whereby funding can be allocated/accessed by the relevant sectors in line with the budget;	Multi-sectoral task force	4	A comprehensive budget is available; Resources and funding secured from relevant stakeholders; Allocation of resources/means to access funds established (e.g. cost centres, distribution of resources etc.);

Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Now that there are very few animal rabies cases in your country, has the national strategy been refined based on current data?	Evaluate current surveillance data regarding the situation of rabies in the country; Discuss the next steps based on current epidemiological data with the entire rabies control taskforce and all relevant stakeholders; Refine national rabies control strategy based on discussions and current data, including new budgetary needs; Ensure that all of the updates to the national rabies control strategy have been endorsed; Publish revisions and ensure that all professionals are aware of the updates made; Implement updated national rabies control strategy;	Multi-sectoral task force	9	Updated national rabies control strategy; Endorsement of national rabies control strategy by all stakeholders; Budget developed; Amount of money secured for updated strategy;
4	Have veterinary border inspection and quarantine measures been fully implemented in accordance with national regulations?	Review national regulations regarding veterinary border inspection and quarantine; Undertake assessment to determine current implementation of guidelines; Assess and review any possible shortcomings/limitations that are hindering effective implementation; Develop budget to address shortcoming/limitations; Address challenges faced that prevent full implementation according to national regulations;	VSD (MoFA) MMDAs MoH	10	Report on findings of the assessment; Budget developed to address shortcomings; Number of veterinary border inspection facilities; Number of quarantine measures used in country;

Section 3.6.1: Timelines for Pending Activities (2013-2030) Towards Cross Cutting Issues

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Has an intersectoral rabies task force, committee or working group, including all relevant stakeholders, been established at a local or national level and do they meet/communicate regularly?													
Is the private sector included in the inter-sectoral task force's discussions and/or activities?													
Has a national strategy for rabies prevention, control and eventual elimination been drafted and finalised in collaboration with all relevant stakeholders?													
Have government resources been identified and allocated in support of the national rabies control strategy?													
Now that there are very few animal rabies cases in your country, has the national strategy been refined based on current data?													
Have veterinary border inspection and quarantine measures been fully implemented in accordance with national regulations?													

Section 3.7: Legislation

Legislation					
The success of rabies control and elimination programmes relies largely on community cooperation and assistance, which is largely driven by the country's legislation, laws and by-laws that enforces specific responsibilities. By legally providing support to rabies control programmes the officials can undertake their respective jobs with further support from authorities and with the full backing of the government, thus improving the odds of achieving successful rabies intervention campaigns.					
Stage	Pending activity	Objectives	Responsible authority	Number of years to completion	Deliverables
3	Is the relevant legislation enforced at the national level?	Determine whether professionals in rabies control are aware of the relevant legislation; Determine whether the legislation is enforced through surveys; Identify methods to improve legislation enforcement in consultation with relevant legal bodies (e.g. fines); Ensure that all professionals are made aware of the relevant legislation and their responsibility to enforce the legislation;	VSD (MoFA) MoH Ministry of Justice and Attorney General Department MMDAs	9	Number of professionals aware of legislation; Number of people surveyed regarding legislation practices; Number of legislations enforced; List of possible techniques to be used to enforce legislation (e.g. fines);

Section 3.7.1: Timelines for Pending Activities (2013-2030) Towards Legislation

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Is the relevant legislation enforced at the national level?													

References

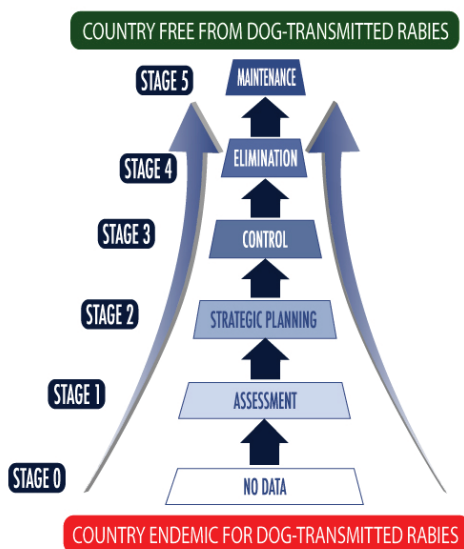
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Appendix A:

Overview of the Stepwise Approach towards Rabies Elimination

The Stepwise Approach towards Rabies Elimination (SARE) tool was developed in 2012 as a self-assessment and a practical guide to the development and implementation of national rabies control programs as a joint effort between the FAO and GARC [3]. The Microsoft®Excel-based SARE tool relies on user input to assess more than 100 activities that have been aggregated into different categories that correlate with the STOP-R framework [4], namely legislation; data collection and analysis; laboratory diagnosis; information, education and communication; prevention and control; dog population-related matters; and cross-cutting issues.

The SARE tool therefore delves deeper into the specificities for a successful intervention strategy, breaking down the complex tasks associated with implementing a successful rabies elimination programme into smaller and more manageable steps. Once the assessment has been completed, the SARE tool provides the users with direct, actionable activities that have been designed to follow a logical flow of progression, typically from a small-scale to nation-wide implementation. By focusing available resources to the pending activities identified in the SARE assessment, countries further their efforts towards rabies control and elimination, and progress within the SARE score pathway from Stage 0 (being endemic for rabies canine-mediated rabies) to Stage 5 (freedom from canine-mediated rabies) [5].



Graphical interpretation of the SARE tool and the broad achievements associated with each stage

Additionally, the ‘Practical Work plan’ component of the SARE tool has been developed to automatically create a unique work plan based on the SARE assessments. The Practical Work Plan component automatically creates and populates a document with clear: i) priority actions; ii) outcomes; iii) responsible authorities; iv) timeframes (including Gantt charts); and v) deliverables for each of the pending SARE activities within the country. This work plan’s contents can subsequently be edited and modified by the users to fine-tune the document into a country-centric work plan that is actionable. By relying on this approach, countries are able to develop work plans based on a sound monitoring and evaluation (M&E) approach in a relatively short period of time.

Overview of the Global Dog Rabies Elimination Pathway

The Global Dog Rabies Elimination Pathway (GDREP) is a Microsoft®Excel-based tool – developed by the Centers for Disease Control and Prevention (US CDC) using data gathered from rabies campaigns in Haiti, Ethiopia, USA, Vietnam, and Latin America – for estimating global timeframes and costs to achieve canine rabies elimination [6]. The GDREP tool requires the user to enter information on i) the size of the human and dog population in their country, ii) current rabies vaccination coverage, iii) available workforce, and iv) dog vaccination rate. Using this user-provided information, the tool uses a phased framework to identify how long a country has to progress to dog rabies elimination and the estimated costs on an annual basis.

Implementation Phase:	Phase I: Preparation			Phase II: Scale-up dog vaccination			Phase III: Sustained 70% dog vaccination						
Program year	1	2	3	4	5	6	7	8	9	10	11	12	13
Expected dog vax coverage:	<18% (current rate)			18% - 35%	35% - 53%	53% - 70%	≥70%						
Activities achieved	Field studies			Pilot implementation			Mass vaccination of dog Surveillance to establish disease burden and assess progress						
	Workforce training			Scaling-up vaccination coverage									
	Strengthening lab capacity			Logistical improvements Operational equipment									
Cost estimates:	Current vaccination coverage Infrastructure improvements*			Expected vaccination coverage Infrastructure improvements*			Vaccination of 70% of the dog population						

Global Dog Rabies Elimination Pathway (GDREP): Phases for a dog rabies elimination program based on 70% dog vaccination coverage

APPENDIX B:

GANTT CHART BY SARE STAGE

GANTT CHART by SARE stage

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Has the supply and access to nationally licensed human rabies vaccines for PrEP for professionals at risk been ensured in local areas?													
1	Has an IEC plan been developed and implemented on a small scale?													
1	Has an assessment been undertaken to determine the training needs of the professionals at a local level?													
1	Has a training plan been developed at a national level?													
1	Have training or refresher courses on rabies and public communication been initiated for professionals in human and animal health at a local level?													
1	Have discussions been held with stakeholders to create a dog population management strategy at a local level?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Have you involved officials in waste management in your stakeholder meetings													
1	Has an advocacy stakeholder analysis been done at a national level and target audiences been identified?													
1	Has an advocacy plan been developed and implemented at a national level?													
1	Has an intersectoral rabies task force, committee or working group, including all relevant stakeholders, been established at a local or national level and do they meet/communicate regularly?													
2	Have linked human and animal rabies surveillance systems, including agreed SOPs, been established?													
2	Is information on the epidemiology of rabies regularly shared with all stakeholders?													
2	Is the on-going surveillance system for rabies being maintained?													
2	Has an assessment been done to determine the availability and access to PEP (and PrEP)?													
2	Has capacity for regular sample collection and transportation been established and functioning?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2	Has a DPM strategy and programme been drafted and shared with all relevant stakeholders at a local level?													
2	Has the DPM strategy been finalized and implemented?													
2	Are WHO pre-qualified human rabies vaccines available and accessible in most parts of the country?													
2	Have training or refresher courses on responsible dog management been initiated for professionals in animal health at a local level?													
2	Have IBCM SOPs, including sharing of information between sectors, been agreed upon at a national level?													
2	Has training of human and animal health personnel been conducted in most parts of the country?													
2	Has the national advocacy plan been used to obtain support from stakeholders to financially resource the national rabies control strategy?													
2	Is the private sector included in the inter-sectoral task force's discussions and/or activities?													
2	Has a national strategy for rabies prevention, control and eventual elimination been drafted and finalised in collaboration with all relevant stakeholders?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2	Have government resources been identified and allocated in support of the national rabies control strategy?													
3	As your country nears human rabies elimination, have field investigations for all suspected human rabies cases been conducted?													
3	As your country nears human rabies elimination, is epidemiological data being collected to provide evidence of dog-transmitted human rabies-free zones?													
3	Now that there are very few animal rabies cases in your country, are field investigations and laboratory confirmations conducted for all suspected rabies outbreaks in dogs?													
3	Has the IEC plan been integrated into the national rabies strategy, implemented at national level and updated where needed?													
3	Are WHO pre-qualified vaccines and RIG available and accessible to high risk and exposed individuals throughout the country?													
3	Are mass dog vaccination campaigns reaching at least 70% of the total dog population conducted according to the plan described in the national rabies strategy?													
3	Are post-vaccination surveys in dogs being carried out to evaluate vaccination coverage?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
3	Is access to reliable laboratory diagnosis available throughout the country for animal samples (and if possible, also for human and wildlife samples)?													
3	Has the DPM strategy been assessed and refined based on current dog ecology or KAP surveys done at a local level?													
3	Has veterinary and animal technician training been completed across most of country?													
3	Have potential rabies-free zones been identified where animal rabies cases caused by the canine rabies variant have been absent for at least a 2-year period?													
3	Has dialogue been initiated with neighbouring countries to prevent the re-introduction of rabies into designated rabies-free zones?													
3	Have dog-transmitted human rabies free zones been declared publicly?													
3	Now that there are very few animal rabies cases in your country, has the national strategy been refined based on current data?													
3	Is the relevant legislation enforced at the national level?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
4	As there are no more laboratory confirmed human rabies cases, are existing surveillance activities for all suspected cases in humans maintained in the country?													
4	As your country nears dog-rabies elimination, has the epidemiological data from the routine surveillance of all animals (not only dogs) been used to refine the national rabies strategy?													
4	Now that there are very few animal rabies cases in your country, is there maintenance of existing surveillance activities, including ongoing laboratory investigation, for all suspected cases in dogs in the country?													
4	Now that there are very few animal rabies cases in your country, are dog vaccination campaigns maintained in zones where dog rabies is still present or where otherwise justified (e.g. risk of introduction)?													
4	Now that there are very few animal rabies cases in your country, has an emergency response/ contingency plan been developed to address any reintroduced case of animal rabies involving a canine variant in rabies-free zones?													
4	Have you declared publicly that your entire country is free from dog-transmitted human rabies?													
4	Have veterinary border inspection and quarantine measures been fully implemented in accordance with national regulations?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
5	Has freedom from dog-transmitted rabies in the entire country been verified by the absence of canine variant cases for at least a 2-year period?													
5	Even though you are rabies free based on successful mass vaccination campaigns, has the capacity for outbreak and re-introduction response been maintained?													
5	Now that your country is free from human and animal rabies, have modified protocols for PEP administration for rabies-free areas been implemented?													
5	Even though you are rabies-free based on successful mass vaccination campaigns, are there on-going laboratory investigations of all suspected cases in domestic and terrestrial wild animal (carnivore) species in the country?													
5	Have awareness programmes focusing on the maintenance of freedom from dog and dog-transmitted human rabies been implemented?													
5	Even though you are rabies free based on successful mass vaccination campaigns, are strategic dog vaccination campaigns maintained where justifiable?													
5	Has the dog population management strategy been implemented nationwide?													

Stage	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
5	Have dog population management and responsible dog ownership campaigns been continued after the elimination of canine-mediated human rabies?													
5	Have you declared publicly that your entire country is free from dog rabies?													

APPENDIX C:

GANTT CHART BY SARE COMPONENT

GANTT CHART by SARE component

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cross-cutting Issues	Has an intersectoral rabies task force, committee or working group, including all relevant stakeholders, been established at a local or national level and do they meet/communicate regularly?													
Cross-cutting Issues	Is the private sector included in the inter-sectoral task force's discussions and/or activities?													
Cross-cutting Issues	Has a national strategy for rabies prevention, control and eventual elimination been drafted and finalised in collaboration with all relevant stakeholders?													
Cross-cutting Issues	Have government resources been identified and allocated in support of the national rabies control strategy?													
Cross-cutting Issues	Now that there are very few animal rabies cases in your country, has the national strategy been refined based on current data?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cross-cutting Issues	Have veterinary border inspection and quarantine measures been fully implemented in accordance with national regulations?													
Data Collection and Analysis	Have linked human and animal rabies surveillance systems, including agreed SOPs, been established?													
Data Collection and Analysis	Is information on the epidemiology of rabies regularly shared with all stakeholders?													
Data Collection and Analysis	Is the on-going surveillance system for rabies being maintained?													
Data Collection and Analysis	As your country nears human rabies elimination, have field investigations for all suspected human rabies cases been conducted?													
Data Collection and Analysis	As your country nears human rabies elimination, is epidemiological data being collected to provide evidence of dog-transmitted human rabies-free zones?													
Data Collection and Analysis	Now that there are very few animal rabies cases in your country, are field investigations and laboratory confirmations conducted for all suspected rabies outbreaks in dogs?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Data Collection and Analysis	As there are no more laboratory confirmed human rabies cases, are existing surveillance activities for all suspected cases in humans maintained in the country?													
Data Collection and Analysis	As your country nears dog-rabies elimination, has the epidemiological data from the routine surveillance of all animals (not only dogs) been used to refine the national rabies strategy?													
Data Collection and Analysis	Has freedom from dog-transmitted rabies in the entire country been verified by the absence of canine variant cases for at least a 2-year period?													
Dog Population Management	Has a DPM strategy and programme been drafted and shared with all relevant stakeholders at a local level?													
Dog Population Management	Has the DPM strategy been finalized and implemented?													
Dog Population Management	Have training or refresher courses on responsible dog management been initiated for professionals in animal health at a local level?													
Dog Population Management	Have discussions been held with stakeholders to create a dog population management strategy at a local level?													
Dog Population Management	Has the DPM strategy been assessed and refined based on current dog ecology or KAP surveys done at a local level?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Dog Population Management	Has veterinary and animal technician training been completed across most of country?													
Dog Population Management	Has the dog population management strategy been implemented nationwide?													
Dog Population Management	Have you involved officials in waste management in your stakeholder meetings													
Dog Population Management	Have dog population management and responsible dog ownership campaigns been continued after the elimination of canine-mediated human rabies?													
Information, Education and communication	Has an IEC plan been developed and implemented on a small scale?													
Information, Education and communication	Has the IEC plan been integrated into the national rabies strategy, implemented at national level and updated where needed?													
Information, Education and communication	Have awareness programmes focusing on the maintenance of freedom from dog and dog-transmitted human rabies been implemented?													
Information, Education and communication	Has an assessment been undertaken to determine the training needs of the professionals at a local level?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Information, Education and communication	Has a training plan been developed at a national level?													
Information, Education and communication	Have training or refresher courses on rabies and public communication been initiated for professionals in human and animal health at a local level?													
Information, Education and communication	Has training of human and animal health personnel been conducted in most parts of the country?													
Information, Education and communication	Has an advocacy stakeholder analysis been done at a national level and target audiences been identified?													
Information, Education and communication	Has an advocacy plan been developed and implemented at a national level?													
Information, Education and communication	Has the national advocacy plan been used to obtain support from stakeholders to financially resource the national rabies control strategy?													
Information, Education and communication	Have dog-transmitted human rabies free zones been declared publicly?													
Information, Education and communication	Have you declared publicly that your entire country is free from dog-transmitted human rabies?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Information, Education and communication	Have you declared publicly that your entire country is free from dog rabies?													
Laboratory Diagnosis	Has capacity for regular sample collection and transportation been established and functioning?													
Laboratory Diagnosis	Is access to reliable laboratory diagnosis available throughout the country for animal samples (and if possible, also for human and wildlife samples)?													
Laboratory Diagnosis	Now that there are very few animal rabies cases in your country, is there maintenance of existing surveillance activities, including ongoing laboratory investigation, for all suspected cases in dogs in the country?													
Laboratory Diagnosis	Even though you are rabies-free based on successful mass vaccination campaigns, are there on-going laboratory investigations of all suspected cases in domestic and terrestrial wild animal (carnivore) species in the country?													
Legislation	Is the relevant legislation enforced at the national level?													
Prevention and Control	Has the supply and access to nationally licensed human rabies vaccines for PrEP for professionals at risk been ensured in local areas?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Prevention and Control	Has an assessment been done to determine the availability and access to PEP (and PrEP)?													
Prevention and Control	Even though you are rabies free based on successful mass vaccination campaigns, has the capacity for outbreak and re-introduction response been maintained?													
Prevention and Control	Are WHO pre-qualified human rabies vaccines available and accessible in most parts of the country?													
Prevention and Control	Are WHO pre-qualified vaccines and RIG available and accessible to high risk and exposed individuals throughout the country?													
Prevention and Control	Now that your country is free from human and animal rabies, have modified protocols for PEP administration for rabies-free areas been implemented?													
Prevention and Control	Are mass dog vaccination campaigns reaching at least 70% of the total dog population conducted according to the plan described in the national rabies strategy?													
Prevention and Control	Are post-vaccination surveys in dogs being carried out to evaluate vaccination coverage?													

Component	Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Prevention and Control	Now that there are very few animal rabies cases in your country, are dog vaccination campaigns maintained in zones where dog rabies is still present or where otherwise justified (e.g. risk of introduction)?													
Prevention and Control	Even though you are rabies free based on successful mass vaccination campaigns, are strategic dog vaccination campaigns maintained where justifiable?													
Prevention and Control	Have IBCM SOPs, including sharing of information between sectors, been agreed upon at a national level?													
Prevention and Control	Have potential rabies-free zones been identified where animal rabies cases caused by the canine rabies variant have been absent for at least a 2-year period?													
Prevention and Control	Has dialogue been initiated with neighbouring countries to prevent the re-introduction of rabies into designated rabies-free zones?													
Prevention and Control	Now that there are very few animal rabies cases in your country, has an emergency response/contingency plan been developed to address any reintroduced case of animal rabies involving a canine variant in rabies-free zones?													

APPENDIX D:

List of Participants

WORKSHOP ON ONE HEALTH SURVEILLANCE APPROACH FOR THE CONTROL OF DOG-MEDITATED HUMAN RABIES IN GHANA

COCONUT GROVE REGENCY HOTEL, ACCRA

24TH MAY 2018

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