



THE REPUBLIC OF THE UNION OF MYANMAR
Ministry of Agriculture, Livestock and Irrigation
Livestock Breeding and Veterinary Department



**NATIONAL ACTION PLAN FOR
RABIES ELIMINATION IN DOG
2018-2030**

SOCIO-CULTURAL

TECHNICAL

ORGANIZATIONAL

POLITICAL

ROOURCES



NOVEMBER 2018

National Action Plan for Rabies Elimination in Dogs

Executive Summary

Rabies is a neglected zoonotic disease which is almost invariably fatal in humans, livestock and other mammals. Classical rabies virus continues to be endemic in most parts of Asia, causing more than 30,000 human deaths annually and contributing to almost 50% of the estimated global rabies burden each year. More than 4 billion people in Asia are at potential risk of getting rabies where at least 94% of human rabies cases were infected via a bite from an infected dog.

In spite of the availability of effective tools for prevention and control, rabies continues to be a challenge in many parts of Asia including Myanmar where an estimated 1,000 human deaths due to rabies occur annually. Myanmar has ranked rabies as one of its top five priority zoonotic diseases, and hence elimination of animal rabies, which ultimately will lead to elimination of human rabies, has been set out as a pioneering initiative by the animal health sector.

To provide an overarching national action plan in strategically approaching animal rabies elimination in the country, the Livestock Breeding and Veterinary Department (LBVD) has developed the *National Action Plan for Rabies Elimination in Dog (NPRED)*. It is particularly made consistent with the *Global Framework for the Elimination of dog-mediated human rabies*¹ and the *ASEAN Rabies Elimination Strategy (ARES)*².

The NPRED lays down an integrated plan, also known as STOP-R that includes:

- (1) A **socio-cultural (S) component** that will focus on enhancing rabies awareness among its people as well as promote behavioral change towards responsible pet ownership;

- (2) A **technical (T) component** that will focus on capacity-strengthening of Myanmar's Veterinary Services particularly on mass dog vaccination,

¹ The Global Framework for the elimination of human rabies is intended to harmonize actions worldwide and provide adaptable, achievable guidance for countries and regions to reach zero human deaths from dog-mediated rabies by 2030 in participating countries. http://www.oie.int/fileadmin/Home/eng/Media_Center/docs/pdf/Rabies_portal/EN_RabiesConfReport.pdf

² ARES (http://vncdc.gov.vn/files/article_attachment/2015/3/endorsed-ares-final.pdf) has been jointly endorsed by both the Health and Agriculture Ministers of all the 10 ASEAN Member States in 2014

rabies surveillance, rabies diagnosis, rabies research, and dog population and movement management;

- (3) An **organizational (O) component** that will focus on strengthening the coordination within LBVD and their One Health collaboration with related departments under the Ministry of Health and Sports (MoHS) as well as other dog rabies stakeholders in the country;
- (4) A **political (P) component** that will focus on ensuring high-level political support to the NPRED and its sustainable implementation; and
- (5) A **resource (R) component** that will focus on securing and ensuring resources for all other components.

Acronyms

Abbreviation	Full Name
ABC	Animal birth control
AGO	Attorney General Office
ARES	ASEAN Rabies Elimination Strategy
CDC	City Development Committee
DoBE	Department of Basic Education
TWG	Technical Working Group
FAO	Food and Agriculture Organization of the United Nations
FAT	Fluorescent antibody test
GAD	General Administrative Department
GARC	Global Alliance for Rabies Control
OIE	World Organization for Animal Health
LARC	Local Animal Rabies Committee
LBVD	Livestock Breeding and Veterinary Department
MLF	Myanmar Livestock Federation
MoALI	Ministry of Agriculture, Livestock and Irrigation
MoE	Ministry of Education
MoHA	Ministry of Home Affairs
MoHS	Ministry of Health and Sports
MoI	Ministry of Information
MoNREC	Ministry of Natural Resources and Environmental Conservation
MoPF	Ministry of Planning and Finance
MVA	Myanmar Veterinary Association
MVC	Myanmar Veterinary Council
NARC	National Animal Rabies Committee
NGO	Non-governmental organization
NARC	National Animal Rabies Committee
NAPRED	National Action Plan for Rabies Elimination in Dog
NSCRED	National Steering Committee for Rabies Elimination in Dog
OIE	World Organization for Animal Health
PAW	Pet Awareness Week
PEP	Post-exposure prophylaxis
PrEP	Pre-exposure prophylaxis

PET	Post-exposure treatment
SEA	South East Asia
STANDZ	Stop Transboundary Animal Diseases and Zoonoses
TCV	Tissue-culture vaccine
TOR	Terms of References
UVS	University of Veterinary Science, Yezin
WHO	World Health Organization
WSPA	World Society for the Protection of Animals

National Action Plan for Rabies Elimination in Dog

1. Introduction

Myanmar is a country in South East Asian (SEA) with a population of 52 million (Myanmar Population and Housing Census, 2014) with a population density of 76 inhabitants per square kilometre - one of the lowest in the Region. The government has been concerned about the rabies menace over the last three decades, and since the establishment of Livestock Breeding and Veterinary Department (LBVD) in 1937, rabies control programme has been emphasized in the country. This programme has been conducted together in Animal Health, Human Health and City Development Committee (CDC) as a multi-sectoral approach. The LBVD and other partners such as the World Organization for Animal Health (OIE) have been providing technical and financial assistance for continuous development of the programme. Although efforts have been made, it continues to be a major public health threat and rabies continues to be endemic in Myanmar. Rabies has been a disease of concern as the annual cost of anti-rabies serum and vaccines used for post exposure treatment is 100 times higher than what is spent on the programs of vaccinating and sterilizing dog.

Dog is the key transmitter of rabies to humans in Myanmar, as it is elsewhere in Asia. However, the extent of the dog rabies issue is not clearly visible since surveillance activities are limited to the programme of diagnosis carried out by the Veterinary Diagnostic Laboratories of LBVD. Based on the pilot study done in Lewei in 2016, the average estimated dog to human population ratio is 1:6. However, since the pilot study has been done at a township level, it would not be able to infer the average dog to human population at national level. It is estimated that since 2013, on average, 150,000 dogs are vaccinated annually with inactivated cell culture vaccine. Out of the total, 100,000 vaccinations are carried out by the LBVD through divisional mass vaccination campaigns and approximately 40,000 vaccinations are performed through private vaccination centres while an additional 10,000 done through door to door vaccinations by municipal councils. However, in most areas the estimated dog vaccination coverage remains below 70% which is the recommended level to achieve the desired herd immunity to eliminate dog rabies (WHO technical report, 2004).

The knowledge base with regards to control and prevention of rabies has

expanded substantially over the recent years, thanks to an initiation of rabies control program by using mass dog vaccination and awareness education campaigns during the past three years. Post exposure prophylactic treatment for humans exposed to rabies suspected animals is provided through government hospitals free of charge since 2013. On the other hand, animal birth control (ABC), training of medical and veterinary staff, health education and promotion of community participation also are among other activities which have been undertaken towards rabies control with limitations. The LBVD collaboration with OIE has implemented pilot mass dog vaccination campaigns in 6 Regions in 2013, Lewei township (Nay Pyi Taw Union Territory) in 2016-2017-2018, Nyaung U township (Mandalay Region) in 2017-2018 and Hmawbi township (Yangon Region) in 2018 to demonstrate mass dog rabies vaccination is feasible to control rabies at source in Myanmar.

In 2014, the ASEAN Rabies Elimination Strategy (ARES) was jointly endorsed by the 36th ASEAN Ministerial Meeting on Agriculture and Forestry and the 12th ASEAN Health Ministers Meeting. Drawing from this regional strategy, the Global Framework for the Elimination of Dog-Mediated Human Rabies was also developed during the Global Rabies Conference in Geneva, Switzerland in December 2015. Following these overarching strategies, the LBVD has sought the support of the OIE Stop Transboundary Animal Diseases and Zoonoses (STANDZ) Project to develop a National Action Plan for Rabies Elimination in Dogs as the country takes on the call for a world free of dog-mediated human rabies. As a country that share its borders with neighbouring rabies endemic countries, it is imperative for the Veterinary Services, in spite of its existing limitations and gaps, to invest on dog rabies elimination programme as this would yield economic and public health benefits such as saving on annual expenditure on post exposure treatment (PET), eliminating human rabies, as well as enhancing the marketability of the country as a safe tourist destination.

OIE's policy on rabies control recognizes that controlling rabies in domestic animals is key to preventing human deaths. With only 10% of the financial resources for Post-exposure prophylaxis (PEP) in humans needed, eradicating rabies at source is certainly more cost-effective. Vaccination of animals using high quality vaccines and with an effective coverage of at least 70% of the population is therefore critical in controlling and eliminating rabies, along with accompanying

essential measures such as effective surveillance and diagnostic capabilities, dog population management, public awareness, and other related initiatives.

1.2. Situation analysis

Rabies is a disease of economic and public health importance in countries of the South-East Asia Region for centuries. However, it is a neglected disease in most endemic countries due to various constraints in implementing comprehensive rabies control programs. Globally rabies circulates in two epidemiological cycles: an urban cycle involving maintenance of infection in dog populations and a sylvatic cycle involving wildlife. There is a possibility of spill-over of rabies virus from dogs to wildlife and vice-versa. Mongoose (*Herpestes spp.*), jackals (*Canis aureus*), foxes (*Vulpes bengalensis*) and wolves (*Canis lupus*) have been incriminated as wildlife reservoirs of rabies in Bangladesh, India and Nepal (Gongal GN, 2006). However, in Myanmar, the dogs are still the main reservoir which transmits rabies to humans and other animals. Human rabies deaths are primarily from rabid dog bites which account for 90% of all animal bites in 2010 (WHO Report, 2010). Therefore, elimination of human rabies depends on elimination at source the rabies elimination in dog. The Veterinary Services thus need to be in the forefront of addressing this public health issue.

1.2.1 Myanmar rabies cases in humans. Myanmar is considered as a high rabies endemic country in the WHO South-East Asia Region (Gongal and Wright, 2011). Cases of rabies occur throughout the year with highest in the delta and plain region. The recorded information from 2009-2017 are shown in Table 1 below, although the Ministry of Health and Sport (MoHS) Myanmar estimates about 1,000 human rabies cases occurred a year (World Health Organization, 2012).

Table 1. Rabies situation in Myanmar, 2009-2018

Year	No. of animal bites reported	No. of post-exposure treatment	No. of human Dog bite cases	No. of human rabies cases	No. of animals tested for rabies	No. of animals positive for rabies (FAT)
2009	16,674	No information	No information	179	6	6
2010	18,360	No information	18,360	205	14	6
2011	20,007	No information	20,007	245	8	5
2012	11,424	1,794	11,424	186	6	3
2013	24,862	No information	No information	194	17	13
2014	27,647	No Information	No information	152	4	4
2015		No information	53,724	98	8	7
2016		No information	56,494	99	6	6
2017		No information	91,092	78	20	11
2018		-	-	71	27	11

1.2.2 Myanmar rabies cases in animals. Although it is well recognized that dog bites are the primary source of infection in endemic countries like Myanmar, Table 1 above shows that laboratory-confirmed rabies cases in animals is largely under-reported. With an average of 200 human rabies cases are confirmed and reported each year in the last 5 years, the number of confirmed and reported animal rabies cases average at only 7 per year. Meanwhile, the number of suspected dog rabies cases (Table 2) from the 6 reporting union territorial and 5 regions, show that the incidence of dog rabies is substantially a lot more than what reaches and gets confirmed at the laboratory.

Table 2. Number of reported suspected dog rabies cases in Myanmar, 2017

Sr/No	Region/State	Number of suspected dog rabies cases (not laboratory-confirmed)
1	Nay Pyi Taw	14
2	Sagaing	198
3	Bago	233
4	Magway	298
5	Mandalay	420
6	Yangon	193
Total		1356

2. General Objective of the National Action Plan on Rabies Elimination in Dog

To be able to eliminate rabies in Myanmar dog population by 2030.

2.1 Specific Objectives of the National Action Plan on Rabies Elimination in Dog

1. To progressively build a community of responsible pet ownership and a proactive society that is fully engaged to responsible dog rabies elimination efforts in the country.
2. To strategically and effectively vaccinate dogs, diagnose rabies, conduct rabies surveillance, manage dog population, monitor and control dog movements, and conduct priority research that will support the country's efforts on dog rabies elimination.
3. To demonstrate strong leadership, foster healthy partnerships and establish strategic coordination within the animal health sector and with other sectors (human health, General Administration Department (GAD), private sector, international partners, and others).
4. To secure a strong political support for the National Action Plan on Rabies Elimination in Dog.
5. To secure and sustain necessary resources including financial for the implementation of all the components in the National Action Plan for Rabies Elimination in Dog (NPRED).

3. The National Action Plan for Rabies Elimination in Dog (NPRED)

To achieve the general and specific objectives as set out in Section 2, Myanmar will adopt the STOP-R Global Strategic Framework for elimination of dog-mediated human rabies and the ASEAN Rabies Elimination Strategy (ARES). The NPRED thus includes: (1) a **socio-cultural component** that will focus on enhancing rabies awareness among its people and promote behavioral change towards responsible pet ownership; (2) a **technical component** that will focus on capacity-strengthening of Myanmar's Veterinary Services particularly on mass dog vaccination, rabies surveillance, rabies diagnosis, rabies research, and dog

population and movement management; (3) an **organizational component** that will focus on strengthening the coordination within the LBVD, and that of the LBVD with their One Health collaboration with the MoHS as well as other dog rabies stakeholders in the country; (4) a **political component** that will focus on ensuring high-level political support to the NPRED and its sustainable implementation; and (5) a **resource component** that will focus on securing and ensuring resources for all the components of the Plan.

3.1 Socio-Cultural Component of NPRED

Community participation is an essential element of any disease control program. It is important to take into context that Myanmar has a diverse culture, various traditional beliefs, and an array of languages that can complicate approaches in engaging the public. It is also perceived that rabies awareness of the general public is low, compromising any initiative, and more importantly, the lives of the dog bite victims. Nevertheless, Myanmar has access to various communication platforms such as social media and other means that can be tapped when reaching the audience.

Current efforts are inadequate to educate the public on rabies and rabies control and prevention. Communities should be made aware of the importance of practices such as regular vaccination against rabies, responsible dog ownership, and correct first aid after animal bites, and presenting themselves to the nearest hospital as early as possible to get further advice and measures. The Plan therefore includes:

3.1.1 DEVELOP a rabies communication strategy (and implementation plan). To develop communication strategy that (1) identifies key target audience (monks, school children, private clinics, dog owners, animals lover (dog feeder, dog acceptor and dog lover), private animal shelter, Non-governmental organizations (NGOs), traditional healers and others) and (2) identifies communication channels and tools appropriate for the target audience identified. The communication strategy should be supported by a well-designed communication research. Communication specialists in consultation with the Ministry of information (MoI) and MoHS, should also be involved in finding the most effective means to influence the behavior of the target audience, such that they will proactively reinforce the rabies elimination efforts of the country (e.g.,

have their dogs vaccinated regularly, report suspect rabies cases whenever recognized, etc.). The socio-cultural context of the people of Myanmar, which may also vary depending on the region, should be taken into account.

This rabies communication strategy and implementation plan will be disseminated to all sectors who will be involved in rabies work in Myanmar (government, private sector, international organizations, non-governmental organizations and others) as reference in developing relevant instruments as they see fit. The key messages should be developed for the following but not limited to: (1) regular rabies vaccination of dogs; (2) responsible pet ownership and animal identification (3) appropriate first aid in the event of animal bite; (4) detecting and reporting suspect rabies cases to the authority; and (5) other key information relevant to dog rabies elimination.

3.1.2 CELEBRATE World Rabies Day. To highlight the significance of rabies and the need to eliminate this zoonoses, all parties involved in rabies work in Myanmar should take the opportunity to jointly celebrate World Rabies Day (WRD) on (or around) September 28 of every year.

3.1.3 INITIATE AND SUPPORT Myanmar Pet Awareness Week. Myanmar will develop and launch an annual “Pet Awareness Week” (PAW) to encourage and sustain responsible pet ownership.

3.1.4 DEVELOP and INTRODUCE awareness for rabies to school-age children. Awareness campaign and educational talk using information, education and communication (IEC) materials (such as leaflets, wall poster) that understand animal bites, rabies and first aid treatment in elementary school will be conducted. A new generation that understands rabies and knowledgeable of its prevention and control will be supported. The relevant official from the Department of Basic Education under Ministry of Education (MoE) will be engaged to integrate rabies awareness (Cartoon Poster and Wall sheet exhibition for educational information about rabies, Pamphlet distribution and Essay Competition concerning about rabies and game board, etc.) at the elementary level.

3.1.5 STRENGTHEN rabies communication networks at the grassroots level.

Rabies communication networks (township/administrator, township development committee (TDC), village administrator, private clinics, sub-rural health center, and others) will be strengthened. The network of rabies stakeholders within and between the communities will be stimulated with regular updates on progress and seeking their participation through various platforms (e.g., Facebook page, quarterly newsletter, SMS network, and other means).

3.1.6 IMPLEMENT the communication strategy. The communication strategy will be implemented in accordance with the developed plan (3.1.1)

3.2 Technical Component of NAPRED

3.2.1. SET-UP a Dog Rabies Technical Working Group (TWG). Dog Rabies Technical Working Group (TWG) who will provide technical advice to the National Animal Rabies Committee (NARC) (Section 3.3.1) will be set up. They will also guide strategies and develop programmatic implementation plans for the technical needs attached to dog rabies elimination (See Box A). To provide concrete guidance to implementing technical staff nationwide, the TWG will also draft protocols and guidelines which will be collated as *Manual of Technical Procedures* (Section 3.2.2).

BOX A Technical areas of work related to elimination of rabies in dog

A. Dog rabies vaccine procurement and distribution. Only approved high-quality dog rabies vaccines compliant to international standards in accordance with the OIE Terrestrial Manual, shall be used in mass dog vaccinations. The Manual of Technical Procedures (Section 3.2.2) to be developed by the Rabies (TWG) of Myanmar.

B. Planning and implementation of strategic mass stray dog vaccination (MDV). At least 70% of the dog population shall be targeted for vaccination annually (at the shortest possible time for each village) to establish and maintain herd immunity. Where resources are limited, a risk-based approach may be taken, which will prioritize high-risk areas for implementation. Strategy, logistics, approaches, post-vaccination monitoring and other detailed elements of MDV will be outlined in the Manual of Technical Procedures (Section 3.2.2).

C. Improvement of animal Rabies Surveillance. Animal rabies is a notifiable disease in Myanmar by Animal health and development law (17/93). However, notification of dog rabies is not taking place as expected. In the absence of an efficient surveillance mechanism, it is impossible to generate accurate evidence based data. Details of procedures for establishing and operationalizing a system of rabies surveillance in Myanmar, which includes early detection program, case investigation and reporting, will be outlined in the Manual of Technical Procedures (Section 3.2.2).

D. Improvement of animal rabies diagnosis. Timely and accurate laboratory diagnosis is necessary for purposes of surveillance and for decision-making on PEP. Currently, the suspected animal samples are sent to Yangon Veterinary Diagnostic laboratories for investigations. But, the infrastructure and utilization of laboratory services are inadequate in Myanmar. Rabies diagnosis in dogs is often neglected. Seller's staining is still used in Myanmar, although it is not a reliable diagnostic test. Fluorescence antibody test (FAT) as it is the gold standard for routine rabies diagnosis, should be made accessible. However, its use is limited to Yangon Veterinary Diagnostic Laboratory due to high cost of rabies conjugates, non-availability of fluorescent microscopes in other regional laboratories and its high cost of maintenance. To improve access to standard rabies diagnostic test in Myanmar, human and financial resources will be needed. Related details on sample

collection, transport, and testing, reporting, and evaluating proficiency will be outlined in the Manual of Technical Procedures (Section 3.2.2).

E. Dog population management and movement control. The success and sustainability of dog immunization coverage depends heavily on appropriate management of the dog population (Gongal G. and Wright A.C., 2011). Due to lack of legal enactments to promote responsible dog ownership there has been little tangible effect on dog population management. In Myanmar, CDC of Yangon, Mandalay and Nay Pyi Taw Union Territory perform Dog population control with less than 3,000 dogs per year. While its success is largely linked to responsible pet ownership, additional technical support will be necessary such as instituting capture-neuter-vaccinate-release (CNVR) where necessary and acceptable to the community. The CNVR will be conducted approximately 10,000 dog a year. For stray dog population control plan and sustain the rabies elimination plan in Myanmar, female sterilization is more effective than male castration because one female dog can reproduce about 5-6 puppies twice a year. Details will be outlined in the Manual of Technical Procedures (Section 3.2.2) to be developed by the Rabies TWG of Myanmar.

F. Development of Rabies Research Agenda for Myanmar. Bridging the gaps of information relevant to rabies control and prevention, will be essential in reinforcing the implementation of NPRED Myanmar. For example, dog ecology studies and epidemiology studies will be helpful in refining the planning and logistics for a mass dog vaccination campaign. KAP survey and/or behavioral studies will help in developing the most effective communication approach for the stakeholders. Research initiatives should be prioritized accordingly.

3.2.2. DEVELOP a Manual of Technical Procedures that will provide technical guidance on areas of work related to dog rabies elimination. To be developed by the Rabies TWG, this manual will include protocols and procedures on dog rabies vaccine procurement (Choosing type, kind, brand, manufactures in according with international standard and relevant with our situation) and distribution, planning and implementation of strategic MDV, improvement of animal rabies surveillance, improvement of animal rabies diagnosis, dog population management and movement control, post-vaccination monitoring and other technical items to be deemed important by the rabies TWG.

3.2.3. DEVELOP and STRENGTHEN relevant technical capacity. Integral to the technical component is to improve capacity building for LBVD Professionals. Research, training, professional development, and continuous education on each of these technical areas of work on rabies elimination in Myanmar should be well-planned and accordingly provided to all relevant staff. For this purpose, Technical training center for dog vaccination – budget, curriculum, trainers, etc should be well planned.

3.2.4. IMPLEMENT the Technical Strategies for Rabies Elimination in Dogs in accordance with the (TWG) technical strategy to be developed (3.2.1). Rabies TWG will guide strategies and develop programmatic implementation plans for the technical needs attached to dog rabies elimination task as shown in Box A.

3.3. Organizational Component of NSCRED.

In 2013 MoALI and MoHS agreed the joint responsibility for controlling rabies under the One Health umbrella in Myanmar. LBVD has now expanded their responsibilities and could be mobilized to develop effective partnership collaboration with OIE for rabies elimination. In this context it is recommended that inter-sectoral coordination mechanism to strengthen rabies elimination program should be involving MOALI, MoHS, MoNREC, Ministry of Education (MoE), Ministry of Planning and Finance (MoPF), CDC, NGOs and INGOs.

3.3.1. SET-UP the National Steering Committee for Rabies Elimination in Dogs (NSCRED).

This inter-sectoral committee will be composed of the following: MoALI, HoHS, MoE (for Department of Basic Education), MoI (For Public extension), MoPF (for Budget Department), Yangon/ Naypyidaw/Mandalay CDC, Ministry of Home Affairs (for General Administrative Department), Myanmar Veterinary Council (MVC), Myanmar Livestock Federation (MLF), Myanmar Veterinary Association (MVA), and MoNREC (for Department of Natural Environment Conservation).

3.3.2. SET-UP the National Animal Rabies Committee (NARC).

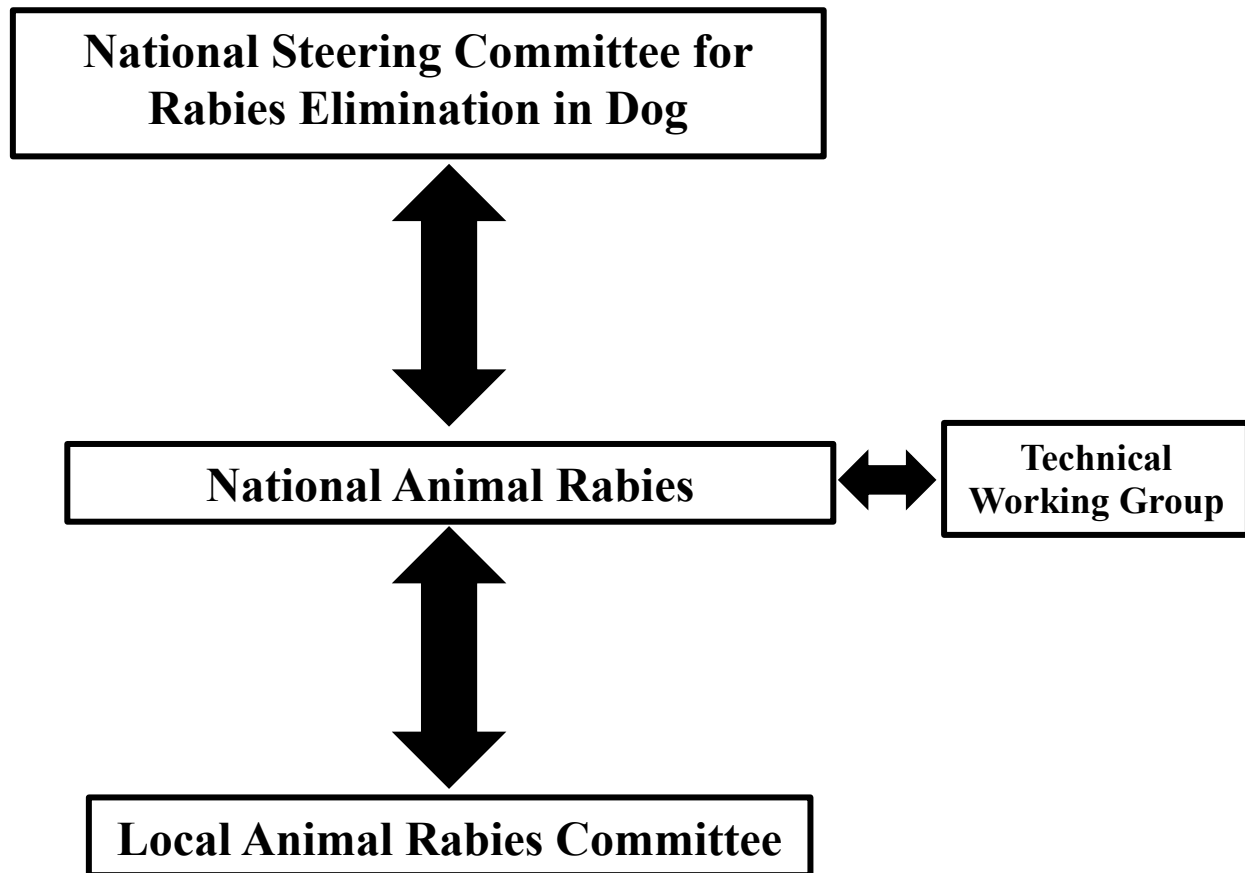
This committee will be composed of the relevant departments, universities and sub-committee (CDC) under the ministries, CDCs and NGOs mentioned in (3.3.1). This NARC under the leadership of Director General of the LBVD will oversee the implementation of the NPRED and ensure alignment of all rabies-related initiatives in the country. As outlined in the Section 3.2.1, the rabies TWG will provide technical advice to the NARC.

3.3.3. SET-UP the local (state/region/district/township) animal rabies committees (LARC).

To facilitate implementation on the ground, LARC at the State/Region/ District/Township/ levels should also be organized with the relevant department under the ministries involved in NSCRED and volunteer and activated.

3.3.4. DEVELOP the monitoring and evaluation framework.

To ensure timely, cost-effective, and efficient implementation of the NSCRED and provide guidance on its leadership, a monitoring and evaluation framework will need to be put in place.



3.4 Policy and Legislative Component of NPRED- As one of the most fatal infectious diseases, policy-makers should be made well aware of the significance of rabies and the impact of its elimination in animal population. High-level political support to the National Action Plan for Rabies Elimination in Dogs is crucial to ensure sustainability and effective implementation.

3.4.1 RECOMMEND to REVIEW existing legal tools, policies and laws with regards to managing zoonotic diseases including rabies in order to enable environment and mobilize resources for prevention, control and elimination of animal or **issue ministerial notification on "Implementing rules and regulation for the** rabies freedom, legislation related to rabies control and prevention should be in place. The law should in particular specify rules and responsibilities relevant to addressing rabies, applicable penalties, and annual budget appropriation for its implementation. Need to implement enacting New Laws on Rabies alone is needed to provide legislative/policy support to NSCRED, this initiative will provide harmonized guidelines of local legal tools that already exist “Prevention, Control and Elimination of animal rabies” as it has been demonstrated in countries who have achieved. For Enacting New Laws on Rabies alone, LBVD should discuss with Union Attorney General Office for detail plan.

3.4.2 ORGANIZE advocacy meetings at regional, state and township levels and provide regular feedback on progress to NSCRED, General Administrative Department and Yangon/Mandalay/Nay Pyi Taw CDC. Then NSCRED can have high level advocacy with respective state bodies such as Parliament. The NSCRED (3.3.1) and/or the NARC (3.3.2) will need to advocate for sub-national policy (and funding) support to the General Administrative Department, GAD for the implementation and continued support to NPRED.

3.4.3 Coordination with regional and global bodies. To align its vision with the global direction of eliminating dog-mediated human rabies by 2030, Myanmar, through its (NARC), will continue to be engaged with regional and global bodies working on rabies (e.g., ASEAN, regional and global Tripartite FAO-OIE-WHO, Global Alliance for Rabies Control (GARC), and other development partners, and report progress to relevant policy makers and high-level officials to seek support to the established regional and global momentum on rabies elimination.

3.5 Resources Component of NPRED. To achieve the objectives of NPRED-, intensive rabies activities that will span years will require sustained and long-term support and to maximize planning and finance. It will also require strategic good use of available resources on initiatives that build on each other, to maximize benefits.

3.5.1 Development of business plans for sustained resources on rabies control and prevention. Building on the available data and facts on resources to rabies elimination, business plans that target a government-funded implementation for and past elimination should be developed to ensure sustainability. An ad hoc group will be created composed of representatives from planning LBVD/MoALI and Ministry of Planning and Finance, to prepare an action plan for dog rabies elimination.

3.5.2 Advocacy for investment. With technical inputs from the Dog Rabies TWG and communication specialists, Resources on rabies elimination in Myanmar will be advocated to at least the following agencies: (1) MoALI, (2) MoHS (3) Yangon/Nay Pyi Taw/Mandalay CDC, (4) Private Sector, (5) Development Partners and (6) others. Evidence will be established regarding the feasibility, merit and value of investing in rabies elimination strategy, with emphasis on the animal rabies elimination as a national public good that extends impact to the region and globally as a whole.

3.5.3 Resource mapping. The National Animal Rabies Committee will provide a regular (e.g., annual meeting) platform to discuss and map out public and private resources for rabies. Public and private partners who are involved or intending to be involved in rabies elimination efforts in Myanmar, will be linked and included in the discussion so that all available resources and initiatives will be made complement and building upon each other, while serving the overarching vision of Myanmar to strategically achieve **rabies elimination by 2030**.

4 Activities, timeline and estimated budget (US \$)

Table 4.1 Socio-Cultural Component. *Desired Outcome: A society that is fully engaged to dog rabies elimination efforts in the country.*

Sr/No	SOCIO-CULTURAL STRATEGIES	ACTIVITIES	LEVEL OF PRIORITY	2018-2019	2020-2021	2022-2023	2024-2025	2026-2030
1	DEVELOP a communication strategy that (1) identifies key target audience (monks, children, media, dog owners, NGOs, traditional healers and others) and (2) identifies communication channels and tools appropriate for the target audience identified	Conduct a communication research to determine stakeholders, key messages, and appropriate channels.	1	10,000				
		Engage a communication expert.		6,000				
2	INITIATE AND SUPPORT relevant regular awareness events such as World Rabies Day and <i>Myanmar Pet Awareness Week*</i>	Annual organizer for the two events	1	10,000	10,000	10,000	10,000	30,000
		Secure fund sources for WRD	1	20,000	20,000	20,000	20,000	30,000
		Promote PAW	3	20,000	20,000	20,000	20,000	30,000
		Develop a concept note and plan how to launch annual PAW		0				
3	DEVELOP AND INTRODUCE awareness for rabies curriculum in school-age children	Engage Ministry of Education	1	0				
		Awareness of children through other means (lectures, game board, etc.)	1	20,000	20,000	20,000	20,000	20,000

4	STRENGTHEN local communication networks (village administrators, private clinics, sub rural health center, volunteer etc.)	Create a network of rabies stakeholders (e.g., Facebook page)	1	2,000	2,000	2,000	2,000	6,000
		Quarterly newsletter for animal rabies	2		10,000	10,000	10,000	30,000
		SMS network as one of the channels of promotion	1	4,000	4,000			
				92,000	86,000	82,000	82,000	146,000

Table 4.2 Technical Component. *Desired Outcome: The LBVD is able to identify, prepare for, and respond to the technical demands of rabies elimination in the country (US \$)*

Sr/No	TECHNICAL STRATEGIES	ACTIVITIES	LEVEL OF PRIORITY	2018-2019	2020-2021	2022-2023	2024-2025	2026-2030
1	SET-UP a Dog Rabies Technical Working Group who will provide advice to the National Committee on the science-based strategy on dog rabies elimination (including vaccination strategy, prioritization, etc.) and address the technical issues identified on dog rabies elimination (see list).	Identify the members of the TWG for animal rabies	1	0				
		Secure endorsement from the LBVD DG	1	0				
		Secure funding source for regular meetings, activities, etc.	1	10,000	10,000	10,000	10,000	30,000
		Rabies vaccine procurement/ MDV Campaign (1 million dose/year)	1	200,000	500,000	500,000	500,000	
		Capacity building for the TWG	1	5,000	10,000	10,000	10,000	30,000
2	DEVELOP a Manual of Procedures for dog rabies vaccination, surveillance, diagnosis, population management (CNVR), animal movement management, case investigation, post-vaccination monitoring (including guidelines on MDV, dog jailing, case definitions, etc.)	Collect examples from other countries	1	0				
		Draft the manual and have it endorsed	1		10,000	5,000		
		Disseminate	1		10,000	10,000		
		capture-neuter-vaccinate-release (CNVR), 5,000 male and 5,000 female a year	1	250,000	250,000	250,000	155,000	-

3	DEVELOP A Research Agenda to prioritize research needs relevant to NPRED	Review of existing literature	1	2,000	5,000	5,000		
		Identifying major gaps of information on rabies		0				
		Developing the research agenda		5,000	5,000			
		Priority research fund	1		10,000	10,000	10,000	
4	Develop and strengthen relevant technical capacity		1	2,500	5,000	5,000	5,000	
5	Implement the national rabies elimination plan		1					
				474,500	815,000	805,000	690,000	60,000

Table 4.3 Organizational Component. *Desired Outcome: The LBVD demonstrates strong leadership, foster healthy partnerships and establish strategic coordination within the animal health sector and with other sectors (health, GAD, private, etc.) (US \$)*

Sr/No	ORGANIZATIONAL STRATEGIES	ACTIVITIES	LEVEL OF PRIORITY	2018-2019	2020-2021	2022-2023	2024-2025	2026-2030
1	SET-UP a Technical Working Group to provide science-based approach to dog rabies elimination (Epidemiologist, Laboratory, Communication, Animal welfare)	See Technical pillar	2	0				
2	SET-UP the National Animal rabies committee	Identify members (or positions) of the NARC	2	0				
		Develop Terms of References for the NARC	2	0				
		Secure endorsement from the LBVD DG	2	0				
		Organize regular meetings of the NARC	2	12,000	6,000	6,000	6,000	18,000
	SET-UP the local (state/region/district/township) animal rabies committees (LARC).		2	15,000	15,000	15,000	15,000	
3	SET-UP the National Steering Committee for Rabies Elimination in Dog (MoALI/LBVD, MoHS, MOE, MoI, YCDC/MCDC/NCDC, GAD,	Engage other partners/agencies to be involved	1	0				
		Organize regular meetings of the	1	3,000	3,000	3,000	3,000	18,000

	UVS, MVC, MLF, NGOs, MVA, Wildlife)	NPRED (bi-annually)						
4	Develop a Monitoring and Evaluation Plan (and implementation/data collection)	Develop a monitoring and evaluation plan, collect data	3		10,000	7,000	7,000	18,000
				30,000	34,000	31,000	31,000	54,000

Table 4.4 Policy and Legislative Component. Desired Outcome: To secure a strong political support for the Myanmar National Action Plan on Rabies Elimination in Dogs (US \$)

Sr/No	POLITICAL STRATEGIES	ACTIVITIES	LEVEL OF PRIORITY	2018-2019	2020-2021	2022-2023	2024-2025	2026-2030
1	Legislative/Policy support	Recommend to issue ministerial notification on "Implementing rules and regulation for the prevention, control and elimination of animal rabies" (to provide harmonized guidelines of existing local legal tool)	1	5,000	10,000	10,000	5,000	
2	Advocacy meeting and feedback on progress to the General Administrative Department, GAD and YCDC, NCDC, MCDC for other regions	Engage policy-makers, parliament members to convince the importance and significance of rabies elimination and One Health approach	1	5,000	5,000	5,000	5,000	15,000
		Organize regular advocacy meetings		20,000				
				30,000	15,000	15,000	10,000	15,000

Table 4.5 Resources Component. *Desired Outcome: To secure and sustain funding support for the implementation of all the components of the National Action Plan for Rabies Elimination in Dogs in Myanmar (US \$)*

Sr/No	RESOURCES STRATEGIES	ACTIVITIES	LEVEL OF PRIORITY	2018-2019	2020-2021	2022-2023	2024-2025	2026-2030
1	Develop a business plan for National Rabies Elimination in dog (including investment advocacy)	Create an ad hoc group composed of representatives from planning LBVD/MoALI, Budget Department/Ministry of Planning and Finance and to prepare a business plan for dog rabies elimination	1	5,000	10,000	10,000	10,000	
2	Advocate for resources from: (1) MoALI, (2) City Development Council, (3) Private Sector, (4) NGOs, (5) International donors and partners (6) MoHS	Develop advocacy strategy	1	5,000		5,000		
				10,000	10,000	15,000	10,000	