



THE SOUTH-EAST ASIA

DOG RABIES ELIMINATION STRATEGY

RABIES

Rabies is a widespread, neglected and under-reported zoonosis with an almost 100% case fatality rate in animals and humans. If untreated on time, it can cause a significant social and economic burden in many countries worldwide. Every year, between 50,000 to 70,000 people die of rabies in atrocious conditions, the majority of whom are children.

Rabies is endemic in the canine population in the majority of South-East Asian countries where nearly all human rabies infections are transmitted via rabid dog bites. Controlling the disease in dogs, therefore, would be the most effective and cheaper way to prevent rabies in humans.

Given that highly effective rabies vaccines and diagnostics are presently available, successful eradication of canine rabies can be achieved with commitment, proper planning and coordination. This has been proven by successful efforts in several countries, including eradication in Malaysia in 1999 and drastic reduction progressing towards elimination in selected provinces in the Philippines and Indonesia where rabies campaigns have recently been conducted.

Governmental commitment, adequate resources, and a well-planned dog rabies control programme grounded on OIE standards and implemented under the leadership of the Veterinary Services, are keys to dog rabies elimination. As the major source of human infection in the region, controlling dog-mediated rabies will significantly contribute to eliminating rabies cases in humans. Strong political and interdisciplinary support from “ASEAN plus three” Member States will achieve the success needed, and save human lives and suffering, as well as the resources spent on human post-exposure treatments.

The South-East Asia Rabies Strategy (SEARS) is a joint initiative of the ASEAN Member States lead by Vietnam and the OIE, with administrative support from the ASEAN Secretariat and technical support from the OIE Sub-Regional Representation for South-East Asia and financial support from the AusAID Stop Transboundary Animal Diseases and Zoonoses (STANDZ) Programme, in addition to the European Union (Regional Cooperation Programme on Highly Pathogenic and Emerging and Re-emerging Diseases (HPED) in Asia) implemented by the OIE Sub-Regional Representation for South-East Asia in Bangkok (Thailand). Partner organizations (FAO and WHO), NGOs (GARC and WSPA) and international donor agencies will be consulted in the finalization of the draft SEARS.

This draft will be presented for discussion at the ASWGL Meeting in May 2013. It will also be circulated for comments to OIE members in South-East Asia and will be presented at the OIE Regional Commission Meeting in November 2013.

TABLE OF CONTENTS

Executive Summary	5
Introduction	6
A. Rabies Situation in ASEAN Member States	6
1. Brunei Darussalam.....	8
2. Cambodia	8
3. Indonesia	8
4. Lao PDR	9
5. Malaysia	10
6. Myanmar	10
7. The Philippines.....	11
8. Singapore	11
9. Thailand	12
10. Vietnam	12
B. The Development of South-East Asia Rabies Strategy	14
C. Guiding Principles on the Regional Rabies Strategy	14
Goal and Objectives	16
Implementation Timeframe	16
The South-East Asia Dog Rabies Elimination Strategy	17
A. Socio-Cultural Framework for dog rabies elimination	17
B. Technical Framework for dog rabies elimination	18
C. Organisational Framework for dog rabies elimination	20
D. Political Framework for dog rabies elimination	20
Operationalisation of the South-East Asia Rabies Elimination Strategy	22
A. Implementation Mechanism	22
B. Mobilisation of Funds	23
C. Monitoring and Evaluation	23
Annexes	24

ACRONYMS

AEGCD	ASEAN Expert Group on Communicable Diseases
AMAF	ASEAN Ministerial Meeting on Agriculture and Forestry
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
ASWGL	ASEAN Sectoral Working Group for Livestock
AusAID	Australian Agency for International Development
DDC	Department of Disease Control
DLD	Department of Livestock Development
EU-HPED	European Union Regional Cooperation Programme on Highly Pathogenic and Emerging and Re-emerging Diseases in Asia
FAO	Food and Agriculture Organization of the United Nations
GF-TADs	Global Framework for Transboundary Animal Diseases
MARD	Ministry of Agriculture and Rural Development
MOH	Ministry of Health
OIE	World Organisation for Animal Health
OIE SRR SEA	OIE Sub-Regional Representation for South-East Asia
ASEAN RSU	ASEAN Regional Support Unit
SEACFMD	South-East Asia and China Foot-and-Mouth Disease Campaign
STANDZ	Stop Transboundary Animal Diseases and Zoonoses
STANDZ SGF	STANDZ Small Grants Facility
PEP	Post-Exposure Prophylaxis
WAHID	World Animal Health Information Database
WAHIS	World Animal Health Information System
WHO	World Health Organization
SEARO	WHO Regional Office for South-East Asia

EXECUTIVE SUMMARY

The South-East Asia Rabies Strategy (SEARS) has been developed to provide a strategic framework for the reduction and ultimate eradication of rabies in South-East Asia by eliminating dog-mediated rabies and protecting and maintaining rabies-free areas in South-East Asia. This document focuses on canine rabies elimination, which is by far the largest source of human rabies infections, and is consistent with the OIE approaches for the prevention and control of rabies, including the recognition of the critical importance of Veterinary Services, 'One Health' approaches, and the application of OIE standards on rabies prevention and control methods, stray dog population control and quality of diagnostic tests and vaccines. It seeks to describe socio-cultural, technical, organisational and political issues that will form the basis for rabies elimination programmes in ASEAN Member States.

The 2008 ASEAN Call for Action towards the Elimination of Rabies in the ASEAN Member States and the Plus Three Countries (China, Japan and Korea) by 2020 (Annex 1) demonstrated the key importance attached to rabies control at a political level. The SEA draft Rabies Strategy is designed to complement the existing sub-regional frameworks developed to control and eliminate human rabies, such as those developed by the ASEAN Expert Group on Communicable Diseases (AEGCD) in 2010 and by the WHO SEARO in 2012 (Annex 2). It supports the global recommendations of the 2011 OIE Global Conference on Rabies Control (Annex 3), and is consistent with international standards described in the rabies chapters in the OIE Terrestrial Animal Health Code (Annex 4) and the OIE Manual of Diagnostic Tests and Vaccines (Annex 5). ASEAN endorsement of the SEA Rabies Strategy and commitment will be sought through the ASEAN Sectoral Working Group for Livestock (ASWGL), SOM and AMAF processes. Endorsement will also be sought from the OIE, including the OIE Regional Commission for Asia, the Far East and Oceania where the particular support of SEA OIE Delegates will be required. Implementation of the Strategy, once endorsed, will be the responsibility of National Governments. The OIE-FAO through the Regional GF-TAD's mechanism will oversee developments and provide advice.

Success will be dependent on effective Veterinary Services and sound intersectoral collaboration with a range of organisations, such as medical services, the community, scientists, NGOs and such like organisations. Political support will be essential as will the provision of adequate resources. The SEA Rabies Strategy is consistent with contemporary One Health approaches and the management of zoonoses in general. Both rabies endemic and non-endemic countries and their populations will benefit from the concerted interdisciplinary efforts outlined in the Strategy.

INTRODUCTION

Rabies is a zoonosis that continues to be a significant cause of human and animal deaths in many parts of the world. Over 90% of human rabies deaths today occur in Asia and Africa. It is widely recognised that the number of human deaths officially reported is greatly underestimated and reliable data indicating the true incidence of human rabies is scarce or non-existent in many countries. Due to competing priorities and multifaceted nature of control activities involving public health and Veterinary Services, rabies remains a neglected disease in most countries of the region. This contributes to the perception of policy-makers, who often consider that rabies is insignificant, which ultimately results in little motivation to implement disease control measures. Additionally, it is the poorest of the population that are most at risk of exposure and death from rabies, and this segment of society is often overlooked.

Rabies is one of the few communicable diseases that can possibly be controlled by currently available tools for veterinary and public health interventions. Progressive control and eventual elimination is an attainable goal, considering the value of the consolidating efforts and achievements for rabies prevention and control in the countries of the region. With a more comprehensive and integrated approach, it is expected that dog rabies will be controlled and progressively eliminated, and there will be an eventual decline and disappearance of human rabies cases. The burden of rabies is primarily on human health, but disease control needs to be focused on the animal source.

A. Rabies Situation in ASEAN Member States

Dog rabies is endemic in most of South-East Asia, where about 608 million people are at potential risk. Cats, cattle, buffaloes, horses, pigs and other domestic and wild animals are also rabies-susceptible and have been reported in the region; however, dogs are considered to be the most important maintenance host and transmitter of rabies to humans, to whom an estimated 96% of documented cases are attributed to contact with infected dogs. Seven out of the ten ASEAN Member States are presently endemically infected with rabies: Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines, Thailand and Vietnam.

Table 1 describes the human and animal rabies occurrence and status of certain animal rabies control measures. According to the OIE World Animal Health Information Data base (WAHID), rabies is a notifiable disease in dogs in ASEAN MS. Although there are no reported wildlife rabies cases, it is also notifiable in Indonesia, Malaysia, Singapore and Thailand. Indonesia, Myanmar and Vietnam reports are limited only to specified zones or regions.

Three countries are considered historically rabies free or have successfully eliminated rabies in domestic animals. Brunei and Singapore have not reported any occurrence of animal rabies and have specific surveillance, vaccination, quarantine and precaution procedures at the borders. The last case in domestic animals in Malaysia was in 1999, and 1953 in Singapore.

Table 1. Regional human and animal rabies occurrence and status of certain animal disease control measures, 2011 (Data sources: Ministries of Health, WHO SEARO, OIE WAHID)

Country	Reported Number of Human Cases	Rate Per Million Population Per Year	Presence of Dog Rabies	Rabies Notifiable to the OIE			General Surveillance and Monitoring	Dog Vaccination Programme
				Dog	Cat	Wildlife		
Brunei	0	0	No	Yes	Yes	Yes	Yes	No
Cambodia	800*	56	Yes	No	No	No	No	No
Indonesia	116	0.48	Yes	Yes	No	Yes	Yes	Yes
Lao PDR	1	0.16	Yes	Yes	Yes	No	Yes	Yes
Malaysia	0	0	No	Yes	Yes	Yes	Yes	Yes
Myanmar	1000*	21	Yes	Yes	Yes	No	Yes	Yes
The Philippines	208	2	Yes	No	No	No	Yes	Yes
Singapore	0	0	No	Yes	Yes	Yes	Yes **	Yes
Thailand	8	0.12	Yes	Yes	Yes	Yes	Yes	Yes
Vietnam	89	1	Yes	Yes	No	No	Yes	Yes

*estimate only

**targeted surveillance only

1. Brunei Darussalam

Brunei Darussalam is free from a number of zoonoses, including rabies. As such, the country does not advocate rabies vaccination in animals, but continues to exert efforts to prevent the importation of such a disease and maintain its freedom from rabies.

2. Cambodia

Rabies is a major public health problem in Cambodia. Institut Pasteur in Cambodia (IPC) Phnom Penh has been the only source of free post-exposure prophylaxis (PEP) and post-mortem diagnosis since 1998, but it mostly remains more accessible to residents in Phnom Penh than those from rural areas. For example, of the 14,475 patients receiving PEP in Cambodia in 2007, 95% were from Phnom Penh or its five neighboring provinces.

From 1998-2007 a total of 63 fatal human cases presenting encephalitis following a dog bite were reported, of which 73% were confirmed positive for rabies. During this period, IPC also tested a total of 1,255 animal brain samples, and obtained 610 (49%) positive results. Rabies in humans and dogs in Cambodia, however, remain to be largely under-estimated. Every year, there are many patients with encephalitis following dog bites, but are rarely hospitalised and die at home.

The National Veterinary Services do not have a rabies control programme. There are also no available statistics on dog population or vaccination coverage among dogs.

3. Indonesia

Rabies is present in 24 of 33 provinces in Indonesia, where dogs remain to be the main reservoir. Although certain islands have been historically free of dog rabies, newly infected areas have emerged in the last 5 years: Bali (2008), Nias Island (2010), Larat Island (2010), Dawera Island (2012). The average number of recorded human cases per year in the last 5 years is 162 with 122 cases in 2008, 195 cases in 2009, 206 cases in 2010, 184 cases in 2011 and 103 in 2012.

Current rabies activities in Indonesia include: vaccination, rapid response and observation of rabies-susceptible animals, IEC (information, education and communication campaign), surveillance, selective/targeted dog elimination, movement control, dog population management, capacity building for rabies control, integrated bite case management, and post-exposure treatment in humans.

Some of the key accomplishments on rabies control as identified by Indonesia's Veterinary Services include: (1) eradication of rabies in 4 provinces (Jakarta, Central Java, East Java, Yogyakarta) and maintaining 5 Provinces as areas being rabies-free; (2) coordination mechanism for priority zoonosis

has been achieved and is in place; (3) successful reduction of animal and human rabies cases with an integrated programme for rabies control (Bali); (4) better information sharing and coordination and action from Central to district level on rabies control in Bali and increased capacity for control through a PDSR programme.

Identified constraints include: (1) excessive effort and resources channeled to control dog population instead of controlling the virus; (2) limited budget for Veterinary Services for rabies control activities; (3) limited human resources (veterinarians and veterinary para-professionals) in terms of both quality and quantity; (4) cultural differences of how dogs are treated in different parts of the country; (5) difficulties in monitoring and controlling animal movement; and (6) chain of command from the central government to local governments not being properly executed.

4. Lao PDR

From 2004-2011, a total of 17 human rabies cases and 639 laboratory-confirmed animal rabies cases have been recorded in Lao PDR. The government considers rabies as one of the top five priority diseases for inclusion into their national strategy for zoonotic disease control programme, which is a joint collaboration between the Ministry of Agriculture and Forestry and Ministry of Public Health of Lao PDR.

Control measures are currently being implemented in Lao PDR with vaccination against canine rabies virus, but vaccination coverage remains very low. There has been no active surveillance programme for canine rabies, and human rabies cases are reported through event-based surveillance. Currently there is only one central animal laboratory that performs rabies diagnosis in animals. On average, they receive about 157 samples annually from nearby provinces, and to a certain extent, from those with good access to the central laboratory. In the last eight years, the average positive rate of submitted samples has been 51%.

Identified constraints on rabies control in Lao PDR include: (1) unclear rabies programme management; (2) limitation in human resources and experts to support policy, strategy and activity work plan development for animal and human rabies programme (3) limitations in rabies surveillance and information sharing; (4) limitation in financial support for vaccination, sterilisation, and rabies research; (5) lack of access to laboratory confirmation.

In September 2012, Lao PDR received 50,000 doses of vaccines from the OIE Rabies Regional Vaccine Bank funded by the European Union (HPED programme). The delivery of 120,000 additional doses is under preparation.

5. Malaysia

The last recorded animal rabies case in Malaysia was in 1999. An Animal Rabies Surveillance Programme was initiated by the Department of Veterinary Services in accordance with OIE standards in 1998 (OIE standards on rabies, which have been developed since then), but after an intensive campaign, no positive cases have been detected to date. With State and federal funding, Malaysia continues to implement initiatives that are relevant to rabies, including: annual dog licensing, annual rabies vaccination programme and animal movement control in the immune belt, management of dog bite cases, and a national surveillance programme. The efforts sustained have reportedly been supported by sufficient legislation at local and national levels. The Laws of Malaysia Act 647 (Animal Act of 1953) cover special provisions relating to dogs in connection with rabies. This includes licensing (Section 38), management of rabies-infected areas (Section 39), destruction or detention of an animal suspected to be infected with rabies (Section 40), detention of any dogs that have bitten a person (Section 41) and anti-rabies vaccination in dogs (Section 42).

6. Myanmar

From 2004 to 2011, 45 laboratory-confirmed animal cases have been reported in Myanmar. Thirty nine of these were from dogs, 3 from cats and 1 for bovine, equine and porcine species. Human rabies cases in Yangon General Hospital (YGH) are estimated at 60 per year, with about 50,000 people bitten by rabid or suspected rabid dogs per year.

Identified constraints with regards to rabies control include: (1) a National Rabies Control Strategy remains to be established; (2) public awareness on the impact of rabies and dog population control need to be strengthened; (3) currently there is limited technical capacity on rabies, particularly on laboratory and surveillance; (4) there is limited funding for rabies control efforts and (5) coordination and collaboration mechanisms need to be further strengthened.

7. The Philippines

Although the Philippines is recognised as free and have achieved freedom for other major animal diseases such as avian influenza and foot-and-mouth disease, rabies remains to be a serious concern in the Philippines. From 2005-2010 alone, an average of 255 cases per year have been recorded in humans. A steady decline in canine rabies incidence had been observed, from 16.5 cases per 100,000 dogs in 2005 to 6.21 cases per 100,000 dogs in 2010. Approximately 98% of animal rabies cases in the Philippines were found in dogs, while the remaining 2% is attributed to cats and other domestic animals.

Current rabies activities in the Philippines include mass vaccination of dogs, establishment of a central database for registered and vaccinated dogs, stray dog population management, IEC campaign on rabies prevention and control, integration of rabies programmes in the school curriculum for children, provision of pre-exposure prophylaxis to high risk personnel, post exposure treatment to animal bite victims, and promotion of responsible pet ownership. In February 2013, with the assistance of the OIE SRR SEA, the Philippines also received 500,000 doses of vaccines from the OIE Rabies Regional Vaccine Bank funded by the European Union (HPED programme) for rabies control in Masbate and other selected areas, with financial support for operations through the AusAID-funded STANDZ Small Grants Facility (SGF).

Rabies control in the Philippines continues to be challenged by various constraints including: (1) limited funding for project implementation (2) lack of support and commitment from local Chief Executives (3) increasing number of dogs and cats roaming the streets (4) lack of awareness on rabies prevention and control (5) lack of support from other sectors.

8. Singapore

Singapore has been free from rabies since the late 1950's. One of the last outbreaks recorded were in two dogs in May 1953, whose origin of infection was unknown. Compulsory vaccination on a limited scale was introduced, which effectively contained the disease. This success prompted legislation to be modified of what was then known as Malaya, which included provisions for dog movement, dog identification, quarantine and vaccination. Today, with multiple prevention strategies in place, Singapore continues to maintain its freedom from rabies, a disease, which remains to be notifiable in the country. Singapore is also considering the possibility of setting up a

national rabies vaccine bank (security/emergency stock of 350,000 doses of vaccines) that would facilitate rapid mass vaccination of dogs in case of reintroduction of rabies in the country.

9. Thailand

With dogs remaining to be the major reservoir of disease, rabies is considered to be an important zoonotic disease and public health issue in Thailand where human and animal cases are recorded every year. Human rabies cases have steadily and dramatically reduced from the reported 370 deaths in 1980 (78/10 million population) to 7 in 2011 (1/10 million population). In the last three years, most cases were from bites of their own animals (74.42%), most of which had never been vaccinated (98%) and 32.5% were bites from puppies. The number of animal rabies in Thailand has also decreased from 4,263 cases in 1993 to 243 cases in 2011. Dogs remain to be the main reservoir (90.05%), followed by cats (4.59%), cattle (4.38%) and other species (0.98%).

The Department of Livestock Development (DLD) and Department of Disease Control (DDC), and local administrative organisations are the main organisations, which implement rabies control activities, including: immunisation, dog population control, post-exposure treatment in humans, and public relations. Key accomplishments include: (1) development of guidelines for rabies free areas based on the criteria of the WHO and OIE, (2) development of National Rabies Control Strategy and (3) transfer of the rabies control strategy to a local administrative organisation.

The major constraints on rabies control as identified by Thailand include: (1) limited vaccination not reaching the country's set goal of 80% coverage; (2) issues on dog population management and control; and (3) less participation of certain local administrations.

7. Vietnam

Rabies is an endemic disease in Vietnam. From 1991 to 2010, there were 3,523 fatal human rabies cases, the majority of whom were under 15 years of age (>40%). In 2011 alone, 89 fatal human rabies cases from 20 of its 63 provinces were recorded. Two big outbreaks have recently been recorded. One was on September 2010 where 165 suspected rabid dogs were found in 17 communes of Lao Cai province. A total of 156 locals were bitten and treated, three of which suffered from fatal infection. Another one was recorded on May 2011, 9 dogs in 5 communes of the

3 districts of the Lao Cai province were infected, biting 22 locals. This resulted to 1 death. Dogs account for 96.4% of the recorded rabies cases, while the remaining 3.6% were in cats.

In November 2011, the Ministry of Agriculture and Rural Development (MARD) endorsed the National programme on rabies control and elimination for the period 2011-2015, with a total budget of USD 7.5 million. In the same year, the Ministry of Health (MOH) allocated USD 15 million for communication, training, workshops, vaccination and monitoring in terms of rabies control and prevention activities. Scavenging dogs, ineffective vaccination and low awareness of the people on rabies were the main constraints identified relevant to the rabies control and prevention programme in Vietnam.

Vietnam also received (in December 2012) 200,000 doses of vaccines from the OIE Rabies Regional Vaccine Bank funded by the European Union (HPED programme). An expert mission coordinated by the OIE/FAO Crisis Management Centre was also requested to visit Vietnam in May 2013 to assess the disease situation in the country and the control measures being implemented.

B. The development of the South-East Asia Rabies Strategy

1. Background

In April 2008, the ASEAN launched a Call for Action towards the elimination of rabies in the ASEAN Member States and the Plus Three Countries (China, Japan and Korea). United by a common desire to address rabies and aware of the need for high-level political support to advance and achieve this goal, recommendations for necessary action at national and regional levels were put forward. This included the development of a regional strategic framework for prevention and control of rabies in the ASEAN Plus Three Region.

Analysis of the current human and animal rabies situation and existing activities on rabies among AMS were conducted at the ASEAN/FAO/OIE/WHO Rabies Workshop in January 2012 in Chiang Mai, Thailand. During this workshop, the step-wise approach to rabies control was also introduced and contributions to its refinement were made by the attending participants.

During the meeting of the OIE Delegates from ASEAN MS back-to-back with the 18th SEACFMD Sub-Commission meeting in Lijiang, China on 9 March 2012, the country Delegates endorsed the Guidelines for use of the OIE Rabies Regional Vaccine Bank for Asia (Eligibility Criteria for use of the OIE Rabies Vaccine Bank for Asia (Injectable vaccines), and agreed to develop a South-East Asia strategy to control rabies, asking the SRR to coordinate the drafting of this strategy. During the ASWGL Meeting in Nay Pyi TaW, Myanmar, on 9-11 May 2012, the meeting asked the OIE SRR through the One Health component of the STANDZ project to assist in the development of a Regional Rabies Control Strategy.

Through the AusAID-funded Stop Transboundary Animal Diseases and Zoonoses (STANDZ) Initiative, with emphasis to its One Health approach and with reference to the component on technical support to disease management, the OIE Sub-regional Representation in South-East Asia (OIE SRR SEA) will produce a comprehensive strategic rabies directions paper to support the formulation of a strategic plan foreseeing the achievement of regional rabies freedom in South-East Asia in 2020. It will be the basis of a detailed regional strategic framework and implementation roadmap where activities are elaborated and assigned among participating states, regional organisations and other stakeholders and partners. This paper will be further developed with key regional partners and global rabies experts, and will serve as a basis for the SEARS regional roadmap for rabies control and eradication. This will be built on existing frameworks, initiatives, and strategies within the region.

This initiative is aligned with the regional goal of eliminating rabies in the ASEAN Member States by 2020 as stipulated in the 2008 ASEAN Call for Action towards Elimination of Rabies in the ASEAN Member States and the Plus Three Countries (China, Japan and Korea) by 2020.

C. Guiding Principles of the Regional Rabies Strategy

The Regional Strategy was designed following the international guidelines and standards on disease control, rabies diagnosis and vaccination, and animal welfare. Its design and implementation will also be guided by the following established facts and collated lessons learnt from various countries working on dog rabies control:

1. Elimination of rabies is possible with the current tools and technology available;

2. Good veterinary governance and adequate legislation are prerequisites for rabies prevention and control in animals;
3. Animal vaccination, particularly of dogs using OIE standards on the quality of vaccines of the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, remains the method of priority to control and eventually eradicate canine-mediated rabies
4. Control of excess stray dog populations, using OIE standards in stray dog population control (Chapter 7.7. of the Terrestrial Animal Health Code) that provided full consideration of animal welfare concerns, should complement vaccination and should never be used as a sole method for ethical, ecological and economic reasons. However, it is recognised that dog-bite incidences originate from an increased number of stray dogs;
5. Better laboratory diagnostic capacities using OIE standards of the Manual on prescribed diagnostic tests for a comprehensive surveillance is invaluable to evaluate the impact of rabies control and elimination efforts
6. Raising public awareness is essential to preventing exposures, post-exposure management, increasing reporting of potential rabid animals, improving understanding about the need to vaccinate dogs and behaviors of responsible pet ownership;
7. Regional responsibilities should be shared to achieve the common goals of rabies freedom across South-East Asia. Each country is expected to systematically implement its rabies control and elimination programme in accordance with set regional standards.
8. All recommendations voted by the Global Conference on rabies control organised by the OIE in Incheon–Seoul (Republic of Korea) on 7-9 September 2011 will be used under this strategy.

GOAL AND OBJECTIVES

The goal of the regional South-East Asia Rabies Strategy is to control and eliminate dog-mediated rabies, and protect and maintain rabies-free areas in South-East Asia. It has four components namely socio-cultural, technical, organisational and political.

The objectives are: (1) to create a community committed to the rabies control efforts of the country and that which adheres to the ideals and interests of animal welfare and animal health; (2) to strengthen the capacity of the Veterinary Services in such a way that it becomes a highly-competent body capable of effectively delivering technical support to rabies elimination, including the quality of vaccination campaigns and advice on stray dog population control; (3) to establish and continuously strengthen the coordination mechanism between stakeholders involved in rabies control; and (4) to obtain and sustain high-level governmental engagement, providing an enabling political environment in support of rabies elimination initiatives.

IMPLEMENTATION TIMEFRAME

This Regional Strategy extends to 2020, coinciding with the regional rabies elimination objective of the ASEAN. It is proposed that this Strategy be divided into two phases with a midterm evaluation, i.e. Phase 1 (2013-2017) and Phase 2 (2018-2020).

THE SOUTH-EAST ASIA DOG RABIES ELIMINATION STRATEGY

The South-East Asia Rabies Strategy bases itself from the lessons learnt from the rabies control programmes in the region and the constraints identified by ASEAN Member States in previous meetings to develop its socio-cultural, technical, organisational and political (S.T.O.P.) pillars. The strategy provides directions to progressively develop these four pillars into a structurally sound foundation for the successful elimination of dog-mediated human rabies in South-East Asia.

To ensure consistency with international standards and guidelines, where applicable, the strategy is aligned with the recommendations of the OIE Animal Health Terrestrial Code and the OIE Manual of Standards for Diagnosis and Vaccines.

A. SOCIO-CULTURAL framework for dog rabies elimination

As a zoonosis primarily involving companion animals, involvement by the general public is an important aspect of the rabies control strategy. Elimination strategies will be devised taking into account of the socio-cultural context and other factors that would facilitate the active participation of the community in the prevention and control, while protecting animal welfare and animal health.

A1. Public awareness on rabies and rabies control efforts. Supported by communication experts, including OIE Focal Points for communication from national Veterinary Services and in collaboration with animal health experts, the country should develop an audience-focused communication strategy that not only raises awareness, but persuades the public to take positive actions to prevent and control rabies in the communities. Awareness campaigns will focus on explaining that rabies is a disease which can be prevented, and should highlight best practices for preventing exposures, post-exposure management, increasing reporting of potential rabies infection in animals, improving understanding of the need to vaccinate dogs, and promoting responsible pet ownership.

A2. Responsible pet ownership. The country promotes responsible pet ownership to complement and support dog population management (Section B5), particularly in reducing stray dog population.

A3. Positive behavior towards animal welfare and animal health. As dog ecology, animal welfare and animal health are closely linked to human behavior, plans should also be put in place for promoting positive behavior that creates a healthy environment for humans and animals alike.

B. TECHNICAL framework for dog rabies elimination

The cornerstone of rabies control is good and competent Veterinary Services (VS), capable of addressing the technical needs of rabies control and prevention. To effectively control rabies, the following technical areas, relevant to rabies control and eradication, should be in place, continuously strengthened, and bridged where there are gaps, in accordance with the provisions in OIE Terrestrial Code Chapter 8.10.

B1. Vaccination. Dog vaccination is the most cost-effective single measure to protect humans from rabies. Completion of a mass dog vaccination drive, covering at least 70% of the surveyed dog population, within the shortest period possible (e.g. within one month) is preferred. A well-prepared vaccination plan based on thorough understanding of the rabies epidemiology in target areas, and knowledge on dog ecology must be shared and implemented so as to identify the most critical areas to target and the logistical approach to operationalise the Strategy, which would ensure supporting funds, infrastructure, and the technical capacity needed from planning to implementation to monitoring and evaluation. Cold chain (+2°C to +8°C) must be available at all times, as it is important to maintain the quality and efficacy of vaccines.

B2. Surveillance and epidemiology. The country should possess sufficient capacity in these areas, such that the local rabies epidemiology is understood and an early detection method is in place to ensure the investigation and reporting of animals suspected of rabid animals. Rabies should be notifiable in the entire country and reported to international organisations. Animal cases should be reported in accordance with the OIE Terrestrial Code Chapter 1.1. All dogs involved in human bite cases should be monitored under secured conditions and samples from suspect rabid dogs (death observed during monitoring period) should be shipped and submitted to the laboratory for confirmation, following the guidelines in the OIE Manual Chapter 2.1.13. Although wildlife rabies has never been confirmed in the region, surveillance to verify whether this is relevant to the local rabies epidemiology context should also be conducted.

A South-East Asia Rabies Epidemiology Network (Rabies EpiNet) will be established to monitor the animal rabies status of the members, implement design surveillance strategy, conduct dog ecology studies, and put into place other measures to enhance early detection and prompt reporting of rabies.

B3. Laboratory diagnostic capability. As there are neither gross pathognomonic lesions nor specific and constant clinical signs for this disease, accurate rabies diagnosis can only be made in the laboratory. The country should therefore have accessible, sufficiently equipped and trained laboratory personnel for standard rabies diagnosis following the guidelines as indicated in Chapter 2.1.13 of the OIE Terrestrial Manual on rabies diagnosis.

A South-East Asian Rabies laboratory network (Rabies LabNet) will be established and coordinated by a lead laboratory chosen by its members. The lead laboratory will work closely with an OIE Rabies Reference Laboratory through a twinning arrangement. The Rabies LabNet will meet annually to discuss the analysis of diagnostic results, proficiency testing, quality assurance and other issues to improve rabies diagnostic capacity.

B4. Access to quality vaccine and diagnostic tests. In addition to the above, a country should also have a mechanism, strategy, and/or a plan as to how it can gain access to quality rabies vaccines and diagnostic tests (consistent with Chapter 2.1.13 of the OIE Terrestrial Manual on rabies diagnosis), which are critical supplies for the control and eradication of rabies. An option for ASEAN Member States could be to access the OIE Regional Rabies Vaccine Bank for Asia (funded by the European Union under the HPED Programme), which is described in further detail in Annex 6.

B5. Dog population management. A system to monitor and control the local dog population should be in place to determine the required resources (e.g. vaccines) and ensure the interest of animal and public health. Stray dog population control should be practised, but, with full consideration to animal welfare (Chapter 7.1 of the OIE Terrestrial Animal Health Code) and its following guidance as stipulated in Chapter 7.7 of the OIE Terrestrial Animal Health Code (stray dog population control). Promotion of responsible pet ownership and positive behavior upholding animal health as described under the above-mentioned social pillar should also be highlighted as being complementary to this component.

B6. Monitoring and control of animal movements. With shared borders and the constant movement of people and their companion animals between countries, dog rabies can easily be transferred from an infected country to another. Countries should therefore have a mechanism to protect its borders from the entry of an infected animal, following the provisions listed in Chapter 8.10 of the Terrestrial Animal Health Code.

B7. Research. National plans should be grounded on evidence-based strategies, and thus, organized data gathering and analysis on the current situation based on sound researches should be integrated in the preparation and design of the plan. Examples of such relevant initiatives include KAP (knowledge, attitudes and practices) and dog ecology studies.

C. ORGANISATIONAL and ONE HEALTH framework for dog rabies elimination

While rabies control initiatives may be initiated by various sectors, groups, and organisations, Veterinary Services should take leadership in their overall coordination in the country and encourage all initiatives relevant to dog rabies control and prevention. This will facilitate the streamlining of activities, in addition to a balanced distribution of available logistical and resource support, and address the need for a coordinated, well-directed and tactical implementation strategy that will effectively achieve the elimination of rabies.

C1. Regional, National and Sub-National coordination. As the elimination of dog rabies will require numerous actions directed towards disease surveillance, diagnosis, control, and prevention among others, a good coordination mechanism led by a clear chain of command will be necessary within the Veterinary Services. This will be critically important in the effective and strategic implementation of rabies control activities in the country.

C2. Cross-sectoral coordination. As rabies is clearly a One Health issue, implementing control methods towards controlling the disease will benefit the human health sector through active collaboration. In the joint meeting of the ASEAN Expert Group for Communicable Diseases (AEGCD) and ASWGL held in November 2012, it was reiterated that such close collaboration between animal health and public health is essential in the implementation of rabies control program. In addition to shared information and mutual support to the rabies control programme, this collaboration can help stimulate a national cross-sectoral coordination mechanism, which can, in the future, address

broader One Health issues. Jointly, a cross-sectoral coordination approach may also more strongly advocate the appropriate financial support from the national government and international funding bodies.

In the 3rd FAO-OIE-WHO Zoonoses workshop held in Bali in November 2012, the development and strengthening of a national inter-sectoral coordination mechanism in Member Countries were among the identified One Health priorities for the region. For some countries, this has since progressed. It is thus viewed that the country's national cross-sectoral coordination committee for rabies should be subsumed under this broader One Health coordination mechanism for zoonoses and other One Health issues.

C3. Public-private partnership. A consistent rabies control strategy will benefit from the contributions, engagement and support of stakeholders across all sectors, including the private sector and municipalities. A strong public-private partnership will provide a more enabling environment in establishing and sustaining vigilant measures against the disease.

D. POLITICAL framework for dog rabies elimination

D1. High-level political support. Governments should recognise rabies control as a high priority zoonosis, and ensure that its control is supported by national legislation or sub-national ordinance/decrees, where applicable. Its impact on the loss of human lives to a disease that could have been preventable should be highlighted, as well as the immense potential savings on costs that are entailed with post-exposure treatment, once dog rabies becomes under control.

D2. Veterinary legislation. As historically demonstrated in the eradication of rabies in Malaysia and Singapore, legislation regarding rabies prevention, control and eradication will help reinforce programme implementation and render such initiatives sustainable. AMS should consider rabies control as a high priority and ensure that national legislation allows for rabies to be a notifiable disease. Legislation should see that a programme is implemented sustainably. High level leadership is to be encouraged at all local levels, and the technical capacities of Veterinary Services are to be strengthened, with a One Health orientated approach. To supplement national legislation, local regulations should also be encouraged to provide legislative support at a local level. Please see also Chapter 3.4 (Veterinary Legislation) of the OIE Terrestrial Animal Health Code.

OPERATIONALISATION OF SOUTH-EAST ASIA RABIES ELIMINATION STRATEGY

A. Implementation mechanism

At a sub-regional level, the implementation of this strategy will be coordinated under the GF-TADs umbrella. As the secretariat of the GF-TADs at a regional and sub-regional level, the OIE will play a key coordination role in the implementation of this strategy in close collaboration with the ASEAN Sectoral Working Group for Livestock and Regional Support Unit (RSU).

The implementation mechanism will build on current initiatives to strengthen Veterinary Services and manpower to address emerging infectious diseases. This should include the following:

- Strengthening of infrastructures and good governance for the delivery of essential Veterinary Services;
- Enhancing the number and skills of veterinary manpower (including veterinary para-professionals);
- Equipping veterinarians and para-professionals with the system, facilities, tools, material and skills for detecting and responding to rabies outbreaks early.

Roadmaps for national and inter-country rabies control and elimination programmes with country- and regional-level projects will be implemented through existing mechanisms. The collaboration with the relevant sectors on the animal-human health interface should be consistent. Regional meetings will be organised for the elaboration of proposals for specific work plan/s and projects with institutional arrangements, mechanisms and identification of funding sources. This elaboration and implementation of work plan(s) will be carried out in collaboration with ASEAN, the OIE, WHO, FAO, and donor agencies. The collaborating organisations and sectors will detail specific mechanisms and organisational roles (for example, the OIE Reference Centres and WHO Collaborating Centres). The existing regional coordinating mechanism will oversee the commitments of agencies and the rabies control and elimination programmes in AMSs.

B. Mobilisation of Funds

An advocacy strategy will be developed to gain political, financial and legislative support to implement the Strategy. The mobilisation of funds will focus on mechanisms and sources at both country- and regional-levels (e.g. the continuation of project-/programme-implementation through grants from dialogue partners, conducting regular donor-consultations and setting up an ASEAN-OIE-FAO-WHO collaborative arrangement for project implementation). Programme and project implementation will be carried out through national resources and multi-agency donor support. National rabies control plans will be developed, identifying the activities, roles, responsibilities, time-frame, and resource requirements to attract and coordinate funding from different sources.

C. Monitoring and Evaluation/ Reporting of Outcomes

Monitoring and evaluation is integral to the implementation of the regional rabies elimination programme. An M&E system, allowing progress to be monitored against the programme objectives, will be developed. An M&E plan, identifying responsibilities, time-frames for specific actions, and which keeps track of lessons learned through process documentation, as well as the reporting of findings and outcomes will be designed. Evaluation will include an assessment of factors that contribute to a partial or complete achievement of the programme/project objectives at country and regional levels. External and self-evaluation tools will be developed for this purpose.