

## **Multi-sectoral Collaboration for “One Health” of Humans, Animals and Environment**

### **Definitions**

1. “One Health” is the health linkage between humans, animals and the environment; which are related and they affect each other both positively and negatively. [1, 2, 3]

2. The practice towards “One Health” is the awareness that the health of humans, animals and environment are all linked. To solve health problems, one must use a holistic approach and coordinate the health practice of humans, animals and environment as well as involve multiple disciplines, from multiple sectors at all levels; locally, nationally, and globally in a united effort.

3. “Animals” are living organisms apart from plants, humans and microorganisms [4]

### **Situations and impacts**

4. H.R.H. Princess Maha Chakri Sirindhorn, President of the Prince Mahidol Award Foundation under the Royal Patronage of H.M. The King, made a speech to the participants concerning at the Prince Mahidol Award Conference 2013 “A world united against infectious diseases: cross-sectoral solutions”, “...infectious diseases are threats to people around the world. The diseases emerged and spread rapidly, affecting human health, economy, security and development. However, the action taken by the public health sector alone is insufficient. Since the beginning of the 21<sup>st</sup> century, most of emerging and re-emerging infectious diseases with impact on human health have had animals as sources of infection. So we cannot deny the fact that the health of humans, animals and environment is extremely linked, and need collaborations from all sectors to solve the problems. Our concern is not only limited to human, animal or environmental health; but the overall health for all lives and all beings on earth. The topic of today’s meeting is therefore suitable for the current situation.”

5. All organisms in this world are closely linked. The increase of human population has brought about changes to human life style. In the past, animals were

raised in the backyard as a source of household foods. Nowadays, animals are farmed in industrial animal production with massive densities, use of antibiotics and hormones for growth promoter. The urbanization has resulted in natural forest areas encroachment. The wrong values of wildlife hunting and collections for exotic pets and traditional medicines, and the destruction of ecosystems such as oil spills in the ocean, which may not be reverted, from all these factors, it is undeniable that human health is related to livestock, wildlife and the environment. Social factors can also lead to changes and increased health threats in several different ways. Infectious diseases may spread widely, and diseases caused by toxic substances and environmental damages can have high potential impacts on humans in terms of social, economic and health.

6. The H5N1 Avian Flu crisis in 2004 has led to a stronger collaboration between the Ministry of Public Health, the Ministry of Agriculture and Cooperatives, and the Ministry of Natural Resources and Environment for surveillance, prevention and control of the Avian Flu outbreaks. When there was an outbreak of avian flu, an investigation team consisting of provincial chief medical officer, epidemiologists, laboratory professionals and veterinarians or a representative of the Ministry of Agriculture and Cooperatives was deployed. Communication with village health volunteers was done to promote the health education and prevention of infections for villagers living in the affected area. This collaboration has led to the successful control of avian flu outbreaks and the last human case was reported in August 2006 [7], while neighboring countries such as Cambodia, Vietnam and Indonesia still have reported cases of avian flu every year.

7. Salmonellosis, an infectious disease, is an important etiology of acute gastrointestinal disease (e.g. diarrhea) in humans following ingestion of contaminated foods, the environment and transmission from people who have these bacteria in their gut. This pathogen can cause serious complications, such as meningitis and septicemia, resulting in deaths or brain damage. In Thailand, there are more cases of Salmonellosis than in developed countries. The pathogen can be found in both 1) intestinal tract of human with or without illness, 2) livestock, pet animals and pest e.g. lizards, mice, cockroaches, earthworms, which are infected by ingestion of contaminated foods, and 3) contamination of pathogens in the environment and various kinds of vegetables, especially contaminated pathogens in feces from agriculture fertilizer. The contaminations of exported food frequently have negative impacts on Thailand's economics. The effective disease prevention and control measures require the cooperation and unity among all involved sectors.

8. Rabies control needs the collaboration from the general public and government agencies, including the Department of Disease Control, Department of Livestock Development and the Department of Local Government. Since rabies is an important zoonotic disease, especially in dogs which are carriers. In many areas, there have been well developed collaboration in the rabies prevention and control project, e.g., the project of building a rabies eradication area in 8 provinces in the northern part of Thailand in 2011 conducted by 1) establishing the committee that includes representatives from all involved sectors, 2) strengthening local government's role in rabies prevention with the support of livestock and public health, registration of dogs and cats in order to establish a database, vaccination and to create awareness of animal responsibility, i.e., education and public relation activities on pet care through media broadcast tower and billboard on regular basis, 3) building the surveillance network with participation from all sectors, i.e. livestock agencies, public, health agencies, local administrations, community, educational institutions, school, temple, media, nongovernment agencies, etc. When there is a case of dog, cat or mammal bites or scratches, public health officers will immediately notify the local government as well as public health and livestock agencies to take appropriate actions, i.e., the confinement of suspected animals and following up the suspected rabies exposed human cases. The prevention and control of rabies requires the collaboration as "unity" to achieve the goal for rabies eradication by 2020.

9. The destruction of ecosystems from accidents and mismanagements for example, the case of oil spilled in the sea, Rayong province in July 2013, resulted in 50,000-70,000 liters of crude oil contaminated into the sea[7], scattered over a wide area. When this incident happened, Thailand followed "the national plan to prevent and eliminate pollution from oil spill" by the Department of the Marine and Navy as a core operation and supported by involved government agencies. In an actual operation, there were volunteers from environmental protection network, participating in oil decontamination. However, lack of coordination between government and nongovernment agencies was observed and civil society was not clearly informed and proposed about the interventions. Stress of affected people happened as a result of lack of income and insecurity. In order to have a better management of these emergencies, a task force should be established which includes government agencies, private agencies, academic institutions, academics, nongovernment organizations, public as members. During an environmental crisis, the planning development should receive the approval from all parties and be collaborative [8], which corresponds to "One Health" concept which emphasizes on the collaboration for problem solving and preventing its reoccurrence in the future.

## **Current implementation**

10. “Thai One Health Network” was established by government agencies, academic institutions and international development partners. This collaboration is the national partnership to work together among agencies involved in the health of human, animal, wildlife and ecosystem towards the benefit of the public and wellbeing of all lives in Thailand. On July 7, 2011, the One Health declaration was fully approved by participating stakeholders [9]. After that, this was developed to the “One Health Epidemiological Teams at the Provincial and District Level” in the five pilot provinces namely Chiang Mai, Nakhon Ratchasima, Kanchanaburi, Chon Buri and Songkhla.

11. “Thai Coordinating Unit for One Health” was established in 2012 under the National Strategic Plan for Preparedness, Prevention and Resolution of Emerging Infectious Diseases (A.D. 2013-2016) [10], aiming to be coordinating unit between partners under "One Health" concept at the national and international levels. Thai government agencies included 1) Department of Disease Control, Ministry of Public Health, 2) Department of Livestock Development, Ministry of Agriculture and Cooperatives, 3) Department of National Parks, Wildlife and Plant Conservation and Zoological Park Organization under the Royal Patronage, Ministry of Natural Resources and Environment, 4) academic institutions and 5) health partners, supported by the international development partners, including: 1) Food and Agriculture Organization of the United Nations (FAO), 2) U.S. Agency for International Development (USAID), 3) Centers for Disease Control and Prevention, United States Center (US-CDC). “Thai Coordinating Unit for One Health” facilitates the collaboration to move the National Strategic Plan for Preparedness, Prevention and Resolution of Emerging Infectious Diseases (A.D. 2013-2016) among partners horizontally to enhance the vertically bureaucratic operating systems, as well as coordinate and support the knowledge and training guidelines for partners in relevance with animal health, wildlife health, environment and public health. In addition, this Unit creates the activity mapping under the partnership of the network, and manages along with coordinates of the budget in order to develop and implement activities related to "One Health", and builds the participation for national policy advocacy under "One Health" concept.

12. Thailand One Health University Network: THOHUN is the collaboration between Mahidol University and Chiang Mai University, supported by United States Agency for International Development (USAID). The objectives of THOHUN are to develop the curriculum for graduates to understand integrated health in order to provide care for health of humans, animals and environment.

13. Mechanism of Surveillance Rapid Response Team (SRRT). Thailand has continuously developed SRRT since A.D. 2005. It is a multidisciplinary network in response to infectious diseases at the national, provincial and district levels. Under the Decentralization to Local Government Organization Act A.D. 1999, this assigned the local government to take responsibility for infectious disease control and prevention [11]. The Ministry of Public Health plays roles in strategic setting, controlling and monitoring, and technical support. Currently, there are 946 district SRRTs and 9,882 sub-district SRRT teams [11], in order to coordinate disease surveillance and investigation, collaborate closely with local government to strengthen team capacity for prompt response to an emergency situation.

### **Related policies and measures**

14. The 2<sup>nd</sup> National Health Assembly in A.D. 2009 adopted the resolution on Emerging Infectious Diseases [12] in considering with the importance of multi-discipline working, concerned the relationship between the health of humans, animals and environment as the principle for the preparedness, prevention and solving problems of emerging infectious diseases.

15. The Ministry of Public Health has included the “One Health” concept in the National Strategic Plan for Preparedness, Prevention and Solution of Emerging Infectious Diseases (A.D. 2013-2016) which was endorsed by the Thai Government Cabinet on August 28, 2012 [11], aiming to be the master plan for the prevention and control of emerging infectious diseases. This can be the framework of planning formulation for associated agencies. The process of strategic plan development focuses on the participation from all partners, government and non-government agencies, and civil society, based on the situation of emerging infectious diseases in Thailand and other countries. Additionally, the national strategies and international cooperation framework are included, e.g., the 11<sup>th</sup> National Economic and Social Development Plan, (A.D. 2012-2016), the International Health Regulations A.D. 2005.

The National Strategic Plan for Preparedness, Prevention and Solution of Emerging Infectious Diseases comprises of 5 main strategies including;

16. Strategy 1: Strengthen disease surveillance, prevention, treatment and control systems on the basis of "One Health" concept.

17. Strategy 2: Strengthen systems to enhance disease-free animal husbandry, improve animal health and health of wild animals

18. Strategy 3: Intensify knowledge management systems and promote research and development on EIDs

19. Strategy 4: Establish integrated management of preparedness and response for public health emergencies

20. Strategy 5: Enhance public information, education and communication on EIDs

21. The action plan of the Strategy 1 has an emphasis on the prevention of re-emerging diseases in an integrated manner together with a capacity building of concerned staff, surveillance, laboratory diagnosis and treatment in an effective and sustainable manner.

### **Limitations and solutions**

22. It has been shown that “One Health” concept is useful and many organizations are interested in and support the implementation. However, there are many challenges in implementing this concept including;

23. Limitations in creating the understanding of stakeholders at all levels: Although “One Health” concept is well accepted within the academic sector as well as the government officers in the areas of public health, animal health and wildlife health. Many activities have been implemented in the past, however, this concept has not been widely recognized among public, local government authorities, private sectors and local communities. This is because “One Health” is a new term, first introduced in Thailand in March 2012 and has not been well promoted for common understanding. Thereby, building up the participation under this concept is still a challenge when aiming to promote the “One Health” concept into the concrete practice in the field where the local government and community play vital roles in solving problems concerning health-related issues of human, animals and the environment.

24. Limitations in driving actively: The operation under “Thai Coordinating Unit for One Health” requires the action plan coordinating between organizations, both vertically and horizontally, to maximize the collaboration. However, the present mechanisms between organizations and multi-disciplinary professions at local level cannot evidently impact the good health of humans, animals and the environment.

25. Participation from the local community: The “One health” concept is

well accepted by the academia, the health policy was successfully formulated, and the activities were implemented. However, the concept must link between humans, animals and environment, so this requires the participation in particular from local communities. The local governments and communities play significant roles in dealing with health problems affecting people, livestock, wildlife and environment by using the "One Health" concept. Therefore, the "One Health" concept and its implementation should be adopted as a public policy using the process through the National Health Assembly.

### **Issue to be considered by the National Health Assembly:**

Requesting the National Health Assembly to consider documents for Health Assembly 6 / Draft Resolution 7 on Multi-sectoral Collaboration for “One Health” of Humans, Animals and Environment

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