

Southeast Asia

Ex-Post Evaluation of Technical Cooperation Project

①Animal Disease Control in Thailand and Neighboring Countries (Phase 1)

②Regional Cooperation Project for Animal Disease Control among Cambodia, Lao P.D.R.,
Malaysia, Myanmar, Thailand, and Vietnam (Phase 2)

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0. Summary

The Japanese Technical Cooperation Project for Animal Disease Control in Thailand and Neighboring Countries and the Japanese Regional Cooperation Project for Animal Disease Control among Cambodia, Lao P.D.R., Malaysia, Myanmar, Thailand, and Vietnam were consistent with the national policies of the member countries and the regional directions that addressed the capacity development for these needs, because the projects aimed to improve the animal health situation in these countries and alleviate the negative impact of animal diseases on livestock development. In addition, they were consistent with the Japanese aid policy that prioritized human resource development in Southeast Asia and the prevention of animal disease control. Thus, these projects were highly relevant. In the present, the animal health situation is still a challenge in the region, but the effectiveness and impact of the projects were deemed fair in increasing the technical capability of diagnosing disease and promoting personal relationships and communication, which are the core elements of trans-boundary animal disease control. The project activities were implemented as planned, thus, the efficiency of projects were high. Although the priority of animal disease control in policy remained high as of the ex-post evaluation, the organizational structure of the implementing agencies of implementing agencies have been maintained, and the activities of central-level laboratories which were supported since Phase 1 have been continued, the pilot activities supported by Phase 2 were stopped in some countries after the project because of financial challenges. Therefore, the sustainability of the projects was deemed fair.

In light of the above, these projects are evaluated to be satisfactory.

1. Project Description



(Project Locations)



(Livestock Farming)

1.1 Background

At the end of the 1990s, cross-border livestock movement increased in Thailand and its neighboring countries Cambodia, Lao P.D.R., Malaysia, Myanmar, and Vietnam with improvement of international trades. The increase in livestock movement increased the risk of the trans-boundary spread of animal disease epidemics. However, systems and mechanisms to control animal diseases had not been fully established in this region. Eventually, the authorities recognized the potential of the animal health situation to worsen. They realized that animal diseases could adversely affect the productivity and trade of livestock and livestock products, and ultimately bring significant damage to livestock industries. Furthermore, animal diseases could have a negative impact on human health from animal-to-human disease transmission.

In recognition of this situation, the Government of Thailand in 1998 requested technical cooperation to the Government of Japan in order to promote the improvement of animal health situation, the prevention of disease transmission, and the strengthening of a cross-border and regional animal disease control mechanism in Southeast Asia. In response, Japan International Cooperation Agency (hereinafter referred to as “JICA”) conducted five preparatory surveys, consulted with six countries mentioned above, including Thailand, and then implemented the Project for Animal Disease Control in Thailand and Neighboring Countries (hereafter referred to as to “Phase 1”) for the five years from December 2001 to December 2006.

However, during Phase 1, the first outbreak of avian influenza occurred in Southeast Asia. This event reinforced the need to further strengthen animal disease control capacity as well as disease surveillance system both in each country and in the region. In response, the participant countries in Phase 1 requested that the Government of Japan continued the technical cooperation project, and JICA decided to implement the Regional Cooperation Project for Animal Disease Control in Cambodia, Lao P.D.R., Malaysia, Myanmar, Thailand, and Vietnam (hereafter referred as to “Phase 2”), based on the lessons learned from Phase 1, for three years beginning in February 2008.

1.2 Project Outline

Phase		Phase 1	Phase 2
Overall Goal		The improvement of animal health is promoted in Thailand and neighboring countries.	The surveillance structure for animal diseases is established among member countries.
Project Purpose		The technology of animal disease control is improved in Thailand and neighboring countries.	The surveillance structure for animal diseases is established among field-level (pilot site), local-level, and central-level in each member country.
Outputs	Output 1	Strengthening the regional cooperation system and resources ¹ for the effective control of animal diseases, including Foot	Surveillance techniques for animal disease are strengthened in each member country.

¹ In Japanese PDM, “human resources, etc.” was used instead of “resources”.

		and Mouth Disease (FMD)	
	Output 2	Disease surveillance techniques are improved.	Surveillance information system for animal diseases is strengthened in each country.
	Output 3	Vaccine production and quality control techniques are improved.	Regional structure for animal disease surveillance is built among member countries.
	Output 4	Animal quarantine techniques are improved.	
	Inputs	<p>(Japanese side)</p> <p>1. Experts: 25 persons (long term: 6 persons; short term: 19 persons)</p> <p>2. Trainees received: 17 persons (counterpart training in Japan)</p> <p>3. Trainees for Third-Country Training Programs: 111 persons in Malaysia and Thailand</p> <p>4. Equipment: 123 million yen</p> <p>5. Local cost: 93 million yen</p> <p>(Counterpart countries)</p> <p>1. Counterpart allocation</p> <p>2. Land and facility</p> <p>3. Training: 88 persons for 40 courses in Thailand; 16 persons for 5 courses in Malaysia</p> <p>4. Financial support for staff coordination in Thailand</p> <p>5. Local cost (financial support for support staff, fee for training in Thailand, etc.)</p>	<p>(Japanese side)</p> <p>1. Experts: 42 persons (long term: 3 persons; short term: 39 persons)</p> <p>2. Trainees received: 12 persons</p> <p>3. Trainees for Third-Country Training Programs: none</p> <p>4. Equipment: 30.5 million yen</p> <p>5. Local cost: 133.8 million yen</p> <p>(Counterpart countries)</p> <p>1. Counterpart allocation</p> <p>2. Land and facility</p> <p>3. Dispatch of Thai and Malaysian experts to neighboring countries</p> <p>4. Local cost (2,500USD by Lao P.D.R., 16,400 USD by Malaysia, 22.71 million Kyat by Myanmar, 3,525 thousand Baht by Thailand, 22 thousand USD by Vietnam (as of terminal evaluation))</p>
	Total cost	472 million yen	380 million yen
	Period of Cooperation	December 2001 to December 2006	February 2008 to February 2011
	Implementing Agency	<p>Cambodia Department of Animal Health and Production, Ministry of Agriculture, Forestry and Fisheries</p> <p>Lao P.D.R. Department of Livestock and Fisheries, Ministry of Agriculture and Forestry</p> <p>Malaysia Department of Veterinary Services, Ministry of Agriculture and Agro-based Industry</p> <p>Myanmar Livestock Breeding and Veterinary Department, Ministry of Livestock and Fisheries</p> <p>Thailand Department of Livestock Development, Ministry of Agriculture and Cooperatives</p> <p>Vietnam Department of Animal Health, Ministry of Agriculture and Rural Development</p>	
	Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries, Livestock Health Research Institute	Ministry of Agriculture, Forestry and Fisheries, National Institute of Animal Health
	Related Projects	<p>Thailand: 1977–1986 Technical Cooperation (herein after referred to as "TC") Project on Animal Health Improvement Program, 1986 - 1993 (TC) National Institute of Animal Health Project, 1993–1998 (TC) National Institute of Animal Health Project Phase II, 1997–2001 (TC) Third Country Training Program course "Diagnostic and Prevention Techniques for Important Livestock Infectious Diseases"</p> <p>Malaysia: 1986 Grant Aid (hereinafter referred to as "GA") Project for Improvement of ASEAN Poultry Disease Research and Training Center, 1986-1998 (TC) Project for ASEAN Poultry Disease Research and Training, 1991-2000 (TC) Third Country</p>	

	<p>Training Program ASEAN Course “Specialized Diagnostic Techniques on Poultry Diseases”, 2006-2011 (TC) Third Country Training Program course “Diagnosis of Avian Influenza at Source”², 2012-2015 (TC) Third Country Training Program course “Diagnosis of Avian Influenza at Source in South East Asia Region”</p> <p>Myanmar: 1995 (GA) Project for Improvement of the Veterinary Diagnostic Laboratories</p> <p>Vietnam: (TA) 2000–2005 Project for Strengthening of National Institute of Veterinary Research</p>
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Phase 1 mainly aimed at strengthening the diagnostic capability of the central-level diagnosis laboratories of each member country as well as the links joining member countries (consisting of activities of central-level of each country and regional activities). Phase 2 expanded the achievement of Phase 1 from the central-level to local-level and field-level. Phase 2 also aimed to strengthen surveillance systems, by utilizing the central-local-field channel, through a trial in pilot areas and develop a prompt animal disease reporting and communication system (consisting of the local-level and field-level activities added to the central-level activities in each country). Furthermore, Phase 2 was designed to promote regional cooperation and collaboration among member countries in developing regional surveillance structures for animal diseases (regional activities).

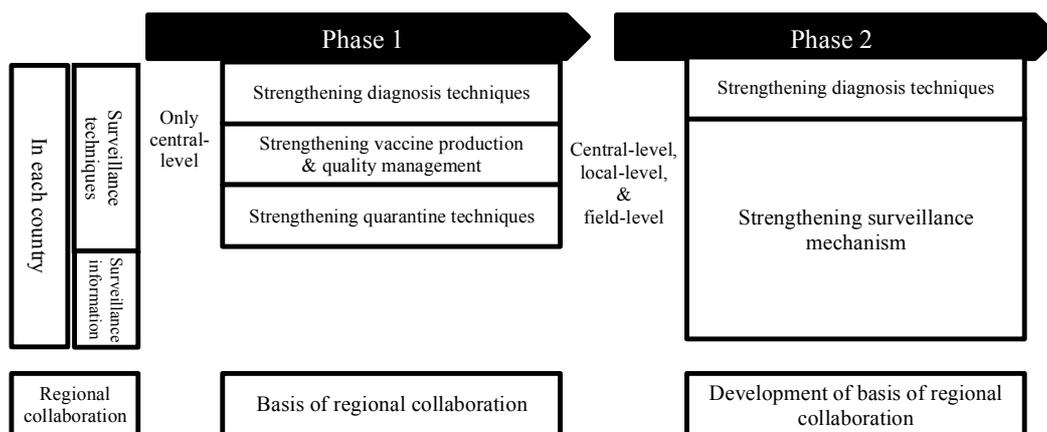


Figure 1 Conceptual Frame of Project – Development of Animal Disease Control System (Source) Amended from project document

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement of Overall Goal at the time of the Terminal Evaluation

In Phase 1, the improvement of the animal health situation, which was the overall goal, was judged impossible to clarify because of difficulties in collecting quantitative data and/or

² This program consisted of two phases: the first phase from 2006 to 2009 and the second phase from 2009 to 2011. Japanese titles were “Diagnostic Techniques of Avian Influenza” and “Diagnosis of Avian Influenza at Source”, respectively, although the same English title was given for them.

identifying specific disease control measures. However, it was recognized that the technical basis for the improvement of diagnosis capacity was strengthened, and certain contributions were made to the overall goal.

In Phase 2, regarding strengthening of a regional surveillance system of trans-boundary animal diseases as overall goal, it was recognized that the six member countries developed a consensus for the direction of the development of regional surveillance system through the activities to harmonize the control mechanism for animal movement as well as the ones to release a joint statement for animal movement control.

1.3.2 Achievement of Project Purpose at the time of the Terminal Evaluation

Phase 1 had activities to strengthen the diagnostic capacity of central-level laboratories and the exchanges among them. As a result, outputs such as the increased mutual understanding of each country's situation and the improvement of the technical skills of diagnosis, vaccine production, and quality control were confirmed. The project purpose, whose indicators were the development of communication among the technicians of each member country and the orientation of new diagnostic technologies, was deemed achieved.

In Phase 2, the mechanisms to control animal diseases in each context of member countries were strengthened on the whole through the strengthening of regional surveillance systems in Southeast Asia region, the introduction of new epidemiological methods, and the improvement of individual diagnosis skills. Thus, the project purpose was deemed achieved.

1.3.3 Recommendations at the time of the Terminal Evaluation

Recommendations in the terminal evaluation of Phase 1 and Phase 2 and the actions taken by the time of ex-post evaluation are shown below.

In Phase 1, the further strengthening of information sharing within and among each country was recommended³ because organizational relationships had not been strengthened beyond the consolidation of inter-personal relationships. In addition, the human development of experts who could be dispatched to neighboring countries was recommended for the central-level diagnosis laboratories of Thailand and Malaysia.

In Phase 2, further discussions were recommended to formulate practical measures for developing animal disease movement control, such as the development of comprehensive regional policy and the provision of strong commitment and resources.

³ For disease control, it is essential to share the information of occurrence of animal disease and animal movement in a country as well as between countries. In response to such recommendation, it was discussed to formulate the phase 2 with project purpose to improve the flow of information of animal diseases and overall goal to strengthening surveillance mechanism among member countries.

Table 1 Recommendations in the Terminal Evaluation
and Actions Taken after the End of the Project
(Extracted and Summarized from the Terminal Evaluation Results⁴)

Recommendation	Actions Taken after the End of the Project*
(Phase 1)	
1. Strengthening project management until the end of Phase 1	
The functions and responsibilities of the project office and national coordinators should be regulated and both of project office and national coordinators should work thoroughly for them.	This recommendation was handed over to the plan of Phase 2, and the operation structure of the project activities was examined. As a result, in Phase 2, a regional coordinator was appointed to coordinate the activities of each national coordinator in order to improve the function of the project office.
2. Activities until the end of Phase 1	
Regarding “Output 4: Improvement of animal quarantine techniques,” workshops about animal movement control and the introduction of diagnostic skills into the quarantine stations at the border were requested.	Recommendations on workshops were handed over to Phase 2. In Phase 2, there were several workshops regarding animal movement control. Recommendations on the introduction of animal disease diagnostic techniques into the quarantine station were not realized in Phase 1, but the activities were included in the pilot activities of Thailand in Phase 2.
3. Strengthening organizational-level networking	
The development of networking among the organizations was still insufficient. In order to share information within and among each member countries, the linkages among diagnosis laboratories should be strengthened beyond personal relationships. In addition, sharing information with international organizations was also expected in Southeast Asia region.	In Phase 2, the strengthening of networking for the organizational sharing of information was included in the project purpose. In addition, the communication with international organizations had not changed since Phase 1. However, the Project sometimes collaborated with international organizations to conduct seminars.
(Phase 2)	
1. Harmonization of animal movement control	
During this phase, member countries issued a joint statement on the control system for animal movement. However, further discussion would be needed to develop concrete measures.	Discussion about the control system for animal movement was handed over to other regional frameworks. The development of specific measures has been promoted, but the discussion is still on going.

(Source) Terminal evaluation report, interviews as of ex-post evaluation

* Confirmed in ex-post evaluation

2. Outline of the Evaluation Study

2.1 External Evaluator

Hirofumi Tsuruta, Fujita Planning Co., Ltd.

⁴ There are two kinds of recommendation; one for each country and the other for regional mechanisms. In addition, the focus of recommendation was different between phase 1 and phase 2. In the table 1 above, the recommendation for regional collaboration was extracted and summarized, taking consideration of common issues of both phases and amount of pages in this report.

2.2 Duration of Evaluation

Duration of the Study:	September 2013 to March 2014
Duration of the Field study:	November 10, 2013 to December 7, 2013 February 18, 2014 to March 11, 2014

2.3 Constraints during the Evaluation Study

There were some constraints for data collection:

- The data and information collected for Phase 1 were only partial because some concerned personnel of the implementing agencies had been retired or transferred. Thus, the lessons learned about the details of project activities, inputs, and the environment where the project was brought in might be not extracted sufficiently.
- Furthermore, it was difficult to approach some Japanese experts who worked for regional activities as opposed to those who worked for specific issues in each country. Therefore, the analysis might be inclined to the views of stakeholders who work domestically. The analysis and judgment of the challenges and burdens resulting from the management of regional activities were conducted carefully. The external evaluator directly visited all of the countries and all of the project sites without being replaced by a local consultant.

3. Results of the Evaluation (Overall Rating: B⁵)

3.1 Relevance (Rating: ③⁶)

3.1.1 Relevance to the Development Plan

3.1.1.1 Regional Policy

At the beginning of Phase 1, a regional policy for trans-boundary animal diseases had not been established. The recommendation was to develop in-country, regional, or global measures, which were announced at international meetings, such as the World Food Summit (1996) and Food and Agriculture Organization of the United Nations (hereinafter referred to as “FAO”) 31st Meeting (2001).

Based on these recommendations, “World Organization for Animal Health (hereinafter referred to as “OIE” and FAO’s Collaborative Initiatives: The Global Framework for the Progressive Control of Trans-boundary Animal Diseases (GF-TADs)” was launched shortly before the start of Phase 2 in 2004. The GF-TADs offered a global guide for strengthening regional collaboration and improving the diagnostic capacity and reporting mechanism in each country. GF-TADs remains as a main political framework as of the present ex-post evaluation. Furthermore, the fifth OIE strategic plan for 2011–2015 was planned at the end of Phase 2. Under this strategy, the first Regional Work Plan Framework for 2011–2015, which

⁵ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁶ ③: High, ②: Fair, ①: Low

highlighted the importance of regional collaboration in animal disease control, was developed.

In the light of the above, because Phases 1 and 2 aimed at strengthening regional collaboration for trans-boundary animal disease control, the consistency with regional policy was high.

3.1.1.2 Policies of Member Countries

Livestock development and animal disease control policies of member countries from the beginning of Phase 1 (2001) and Phase 2 (2008) are shown in Tables 2. Most of the countries prioritized livestock development in their national development plan from the beginning of Phase 1 to the end of the Phase 2. In addition, animal disease control laws, regulations, and guidelines were developed at the beginning of the Phase 1 and were included in the national development plans by the end of the Phase 2.

Table 2 Relevant Policies of Livestock Development and Animal Disease Control

Country	As of the Ex-Ante Evaluation of Phases 1 & 2 (from 2001 to 2008)		As of the Completion of Phase 2 (2011)	
	Livestock development	Animal disease control	Livestock development	Animal disease control
Cambodia	1 st Socio-Economic Development Plan 1996–2000, 2 nd Socio-Economic Development Plan 2001–2005	Rules about Animal Movement Control, FMD Elimination National Strategy, etc.	National Strategic Development Plan Update 2009–2013	National Strategic Development Plan Update 2009–2013
Lao P.D.R.	Agriculture Development Plan 1991–2000, Sixth National Socio-Economic Development Plan 2006–2010	Rules about veterinary services at the border or in Lao PDR for animal or animal product movement, etc.	7 th National Socio-Economic Development Plan 2011–2015	Five Year Plan 2011–2015, Department of Livestock and Fisheries, Ministry of Agriculture and Forestry 7 th National Socio-Economic Development Plan 2011–2015, etc.
Malaysia	8 th Malaysian Plan 2001–2005, 9 th Malaysian Plan 2006–2010	National Plan for Animal Disease Control and Eradication, Third National Agricultural Policy 1998–2010	10 th Malaysian Plan 2011–2015	National Newcastle Control Programme, Animal Act, Animal Laws
Myanmar	30 Year Long-term Agriculture Plan 2001–2030	Animal Health and Development Law, Veterinary Council Law	National Medium-term Priority Framework 2010–2014, etc.	National Medium-term Priority Framework 2010–2014
Thailand	8 th National Economic and Social Development Plan 1997–2001, 9 th National Economic and Social Development Plan 2002–2006	Vaccination campaign for FMD, hemorrhagic septicemia, swine flu, and Newcastle disease	10 th National Economic and Social Development Plan 2007–2011, 11 th National Economic and Social Development Plan 2012–2016	11 th National Economic and Social Development Plan 2012–2016. National FMD Strategic Plan 2008–2015
Vietnam	Socio-Economic Development Strategy 2001–2010	National Food and Agricultural Health Action Plan 2006–2010, etc.	Socio-Economic Development Strategy 2011–2020	25 Regulations on animal disease preventions, etc.

(Source) Policy documents of member countries, terminal evaluation report

These projects not only were consistent with the livestock development and animal disease

control policies of member countries, but also met the trend of the policy development of animal disease efforts in each country.

3.1.2 Relevance to Development Needs

3.1.2.1 Regional Needs

At the beginning of Phase 1, worldwide outbreaks of various trans-boundary animal diseases, such as the FMD outbreak from 1997 to 2003, received global attention. In member countries, cases of outbreaks of the five major trans-boundary diseases⁷ had been widely reported at the time of Phases 1 and 2, which necessitated the development of cross-border control, such as an animal movement control and/or a quarantine system. In particular, after the outbreak of avian influenza in Thailand and Vietnam in 2004, animal–human disease transmission became a concern, which highlighted the further needs to construct control measures and mechanism, including regional collaboration.

As Phases 1 and 2 focused on trans-boundary animal diseases, these projects corresponded with regional needs.

3.1.2.2 Needs of Each Country

In examining the epidemics of the five major trans-boundary diseases as representatives of all trans-boundary diseases, we find that these diseases had been reported since the beginning of Phase 1 to the end of Phase 2 and had not been eliminated or eradicated (see examples in Tables 3 and 4⁸). In addition, diseases targeted by Phases 1 and 2, apart from the five major diseases, had been in the list of OIE for needing control measures⁹. Thus, there was a need for animal disease control in each country.

⁷ Five major trans-boundary diseases are FMD, Swine cholera, Newcastle disease, hemorrhagic septicemia, and avian influenza.

⁸ Only the situation of FMD and avian influenza are reported because of the limit of pages of this report.

⁹ If the disease is mentioned in OIE-list, the disease becomes the target of international surveillance and reporting to OIE become mandate of each OIE member country (including emergency report, biannual report, annual report, etc. If disease is satisfied with four criteria 1) international epidemics situation, 2) presence of disease free country (country that can ignore the risk), 3) presence of harms on human, livestock or wild animal, and 4) existence of definition and diagnosis method of diseases, it is listed.

Table 3 Major Trans-Boundary Animal Disease: 1) FMD

Year (20xx)	01	02	03	04	05	06	07	08	09	10	11	12	13
Cambodia													
Lao P.D.R.						X							
Malaysia													
Myanmar													
Thailand													
Vietnam												X	

(Source) 2001 to 2004: OIE Animal Health Data Handistatus, 2005 to 2013 : OIE World Animal Health Information Database (WAHIS)

*Notes

 Occurred
  Occurred in limited area/suspicious cases reported
  No reported cases
  Blank No information

Table 4 Major Trans-Boundary Animal Disease: 2) Avian influenza

Year (20xx)	01	02	03	04	05	06	07	08	09	10	11	12	13
Cambodia													
Lao P.D.R.													
Malaysia													
Myanmar													
Thailand													
Vietnam													

(Source) 2001 to 2004: OIE Animal Health Data Handistatus, 2005 to 2013: WAHIS

*Notes

 Occurred
  Occurred in limited area/suspicious cases reported
  No reported cases
  Blank No information

3.1.3 Relevance to Japan's Official Development Assistance (ODA) Policy

3.1.3.1 Regional Aid Policy

In Japan's ODA Charter (1992), Asia was set as a priority region, and global issues, such as infectious diseases, were regarded as priority concerns. Even after the revision of the ODA Charter in 2003, these priorities were not changed; indeed, the revised charter emphasized Japan's involvement more clearly: "Japan will also strengthen collaboration with regional cooperation frameworks and will support region-wide cooperation that encompasses several countries." In addition, under the ODA Charter, Japan launched the following relevant initiatives and programs from the ex-ante evaluation of Phase 1 to the implementation period of Phase 1 and Phase 2:

- Enhancing human resources development and human resources exchanges in east Asia in 1999, which included dispatching Japanese experts across the Southeast Asia region
- Developing the Greater Mekong region under the initiative for ASEAN integration and its action plan in 2003, which included expressing the goal of cooperation to address global issues and promote infectious disease control
- Establishing the Asian Network for Disaster and Disease Prevention in 2008 as a result of the proposal of then Prime Minister Fukuda

The projects targeted trans-boundary diseases, focused on the Asian region, and were closely related to Japan's regional policy.

3.1.3.2 Aid Policies for Each Country

Tables 5 and 6 list the relevant policies of each country. At the beginning of Phases 1 and 2, Japan not always instituted policies for cooperation in the area of animal disease control. However, for every country except Thailand and Malaysia, Japan instituted assistance policies for livestock and agriculture development related to animal disease control. For advanced countries of animal disease control, such as Thailand and Malaysia, for which, Japan instituted a policy to support south-south cooperation and regional cooperation.

The projects were relevant to the aid policy of each member country.

Table 5 Aid Priority at the Beginning of Phase 1

Country	Priority Areas
Cambodia	Agriculture and rural development / Livestock and fishery industries
Lao P.D.R.	Agricultural development, forestry, and conservation
Malaysia	Promotion of partnership (through supporting south-south cooperation)
Myanmar	Cooperation directly benefiting the people by addressing their basic human needs
Thailand	Support for regional cooperation
Vietnam	Agricultural and rural development, regional development

(Source) Policy of Japan's assistance program for each country, Japan's ODA data book by country, etc.

Table 6 Aid Priority at the Beginning of Phase 2

Country	Priority Areas	Name of Program
Cambodia	Increase of agricultural productivity	Improvement of irrigated agriculture and farming
Lao P.D.R.	Increase of food security	Food security
Malaysia	Expansion of south-south cooperation	Support of south-south cooperation
Myanmar	Agriculture and rural development	Agriculture development and extension of human resources development
Thailand	Regional cooperation	Coping with common issues in ASEAN
Vietnam	Rural development and livelihood improvement	Others

(Source) Policy of Japan's assistance program for each country, Japan's ODA data book by country, terminal evaluation report, etc.

3.1.4 Adequacy of Measures

Both Phases 1 and 2 aimed to promote the development of regional relationships, especially given the importance of regional collaboration for the control of trans-boundary animal diseases. According to the interviews for this ex-post evaluation, relationships were strengthened and opportunities to work collaboratively were ensured, such as activities for output 1 of Phase 1, activities for output 3 of Phase 2, and other activities such as the dispatch of Thai and Malaysian experts to neighboring countries. As a result, the project facilitated

various achievements, such as increasing the practical understanding and know-how of the member countries, providing them with common experiences, beyond knowledge acquisition through information exchange in ordinal meetings. According to the interviewees for the ex-post evaluation, there were some unique improvements in the projects; the expansion of the stakeholders' horizons through exposure to different animal health situations, policies, and contexts; the technical transfer from leading countries (e.g., Thailand and Malaysia) to neighboring ones; and the acquisition of international cooperation skills through activities in various countries.

Therefore, the regional cooperation approach was justified for being chosen as a technical means for contributing to cross-border animal disease control.

In summary, this project was highly relevant to the development policies, development needs at the regional and country levels, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Effectiveness and Impact¹⁰ (Rating: ②)

The terms used in the Project Design Matrix (hereinafter referred to as "PDM") to judge the achievement of project outputs and purposes were different in their Japanese and English versions. For example, "develop," "strengthen," "establish," and "improve" were used for the expected changes of mechanisms, capacities, and relationships. In this ex-post evaluation, "strengthen" was focused for evaluation judgment in order to avoid confusion, in accordance to the projects' basic plan¹¹ of focusing on the "strengthening" of mechanisms, capacities, and relationships.

3.2.1 Effectiveness

3.2.1.1 Phase 1

1) Project Output

- i. Output 1: Strengthening the Regional Cooperation System and Resources for the Effective Control of Animal Diseases, Including FMD

¹⁰ The sub-rating for Effectiveness is to be considered with Impact.

¹¹ As an assumption of the first and second ex-ante evaluation survey and discussion of implementation of phase 2, the report mentioned, "In national-level, the expansion of the achievements of phase 1 from the central-level to local-level and field-level is expected. That is, through strengthening ties between the central-level diagnosis laboratory and the local and field-level and utilizing the diagnosis technologies of the central-level for the local and field-level, the project expects to improve the diagnosis capacity not only of the central-level but also of the local and field-level. In addition, each country selects one area as a pilot activity site and establishes reporting system of animal disease between the field-level, local-level and central-level, focusing a pilot site. Through these activities, the project expects the strengthening of surveillance system in each country. Moreover, in regional-level, because it is essential to make regional efforts for trans-boundary diseases beyond individual national efforts, the project promotes the collaboration among member countries and addresses the capacity development of networking system in the regional-level".

The indicator was that “Sharing human resources and information for animal health”. It was done through the dispatch of regional experts, the training sessions that were held in Thailand and Malaysia, the creation of a website, and the dissemination of newsletters. As results, informal relationships (individual relationships without any official documents and/or agreements) were strengthened among central government departments and the central-level diagnosis laboratories as a basis for formal regional collaborations (relationships based on formal documents and/or agreements among organizations). These relationships promoted the increase of promptness of emergent responses against animal diseases, which benefited from the enhancement of information and knowledge exchange, capacity development by mutual collaboration among similar organizations, and understandings of the importance of practical experience through field visits and joint activities.

On the other hand, technical skills mainly related to animal disease diagnosis were strengthened as shown in below ii. Output 2. In this case, the following steps were taken in the framework of regional cooperation in Southeast Asia:

1. Training was implemented in Thailand and Malaysia.
2. After the training, relevant regional experts were dispatched to the countries and diagnosis laboratories of the trainees. The regional experts examined the practice of trainees.
3. If the skills and/or knowledge provided in the training were not practiced, the regional experts searched for a solution with trainees, improved the working environment of trainees, and/or gave technical advice or additional on-the-job training.

According to the interviewees, these processes enhanced the effects of the training as well as raised the mutual awareness of members of this project in this region. This process was handed over to Phase 2.

ii. Output 2: Improvement of Disease Surveillance Techniques

Besides training and dispatching regional experts, Japanese experts and equipment were provided specifically to each country. As a result, the central-level diagnosis laboratory of each country acquired the skills to diagnose and knowledge about the five major trans-boundary diseases and other important diseases, which are shown in Table 7.

Table 7 Diagnostic and Experimental Techniques Acquired by Member Countries

Country	Diagnosis and Experiment Technique
Cambodia	Six diagnostic methods for 1) FMD, 2) swine cholera 3) Newcastle disease, 4) bovine hemorrhagic septicemia, 5) brucellosis, 6) avian influenza
Lao P.D.R.	Five diagnostic methods for 1) FMD, 2) swine cholera, 3) Newcastle disease, 4) bovine hemorrhagic septicemia, 5) avian influenza
Malaysia	Two diagnostic methods for 1) FMD, 2) zoonosis
Myanmar	Three diagnostic methods for 1) swine cholera, 2) tuberculosis, 3) avian influenza
Thailand	Two diagnostic methods for 1) FMD, 2) swine cholera
Vietnam	Five diagnostic methods for 1) FMD, 2) duck viral hepatitis, 3) bovine hemorrhagic septicemia, 4) tuberculosis, 5) avian influenza

(Source) JICA project documents

iii. Output 3: Improvement of Vaccine Production and Quality Control Techniques

Project activities such as the dispatch of Japanese experts and equipment provision enabled the production of oil adjuvant vaccines for hemorrhagic septicemia in Lao P.D.R.; FMD oil adjuvant vaccines for pigs, brucellosis vaccines, and diagnostic reagents in Myanmar; and cell-culture vaccines for classical swine fever in Thailand. Along with this new development of production technologies, trainings to enhance skills for managing production processes and for evaluating vaccines in the field were also conducted. However, pro-active input was lacking in Cambodia, and the significant outputs were not confirmed.

Table 8 Requests and Achievements
Regarding Vaccine Production Techniques and Production Management Techniques

Country	Requested in Discussion on Implementation Study on the Project (2001)	Achievements Recognized as of Ex-Post Evaluation
Cambodia	Domestic production of all the vaccine for hemorrhagic septicemia	Although there were some activities in the first half of the project, they were not continuous. Thus, the significant improvement was not recognized.
Lao P.D.R.	Stable production of oil adjuvant vaccines for hemorrhagic septicemia	Production of oil adjuvant vaccines for hemorrhagic septicemia was enabled.
Malaysia	Not requested	Not reported
Myanmar	Vaccine production for Newcastle disease and FMD	Production of FMD oil adjuvant vaccines for pigs, brucellosis vaccines, and diagnostic reagents was enabled.
Thailand	Technical cooperation to make practical production of vaccine for Swine cholera	Production of cell-culture vaccines for classical swine fever was enabled.
Vietnam	Quality examination on FMD vaccine	As a result of training of vaccine quality control, efficacy evaluation of vaccine was enabled and applied for field examination in Vietnam.

(Source) Report of discussion on implementation study of the project, JICA project documents

In Cambodia, the request for the activities was given during the discussion on

implementation study, but it was clarified after the start of the project that the vaccine was not produced in the country. Therefore, activities were limited to the training to enhance quality management skills, and the improvement was not recognized very significantly.

As for Malaysia, even in the original plan, vaccine production was not a problem because the production and supply of many imported vaccine products were approved in the country. The activities were not planned.

In Vietnam, the requested vaccine production was limited, and there was no output regarding new vaccine development. However, the training on quality management skills was provided and the skills were applied for domestic activities. Thus, the output of the project was recognized.

In the light of the above, output 3 was achieved in all countries except Cambodia because the technical improvement and/or transfer were recognized as planned.

iv. Output 4: Improvement of Animal Quarantine Techniques

Given the limited input and activities for this output, the improvement of animal quarantine techniques in Phase 1 was not definitive.

However, there was some progress with the harmonization¹² of quarantine procedures against animal diseases among member countries (indicator of Output 4) through the creation of opportunities for formal discussion about animal movement such as collaboration seminars on animal disease quarantine and animal movement control with OIE and FAO.

Strictly speaking, output 4 aimed at technical improvement. However, at the beginning of the project, as most member countries did not have standardized quarantine systems, raising awareness for animal quarantines was a top priority, which was targeted by this Output 4. The preparatory study for Phase 1 reported that awareness raising about quarantines would result in the reduction of illegal cross-border movement and then reduce the risks of animal disease entering into Thailand. That is, approaches to awareness raising had been discussed since the beginning of the project. Therefore, awareness raising for harmonizing quarantine procedures could be recognized as an important precondition or basis for technical development.

2) Achievement of the Project Purpose

i. Indicator 1: A Common System of Animal Health Information Shared among the Member Countries

Regarding the mechanism for continuous information sharing, indicator 1 was achieved in terms of “strengthening” because personal relationships were strengthened as shown in output

¹² “Harmonization” is different from the indicator 2 of project purpose. At the planning stage of phase 1, Thailand and other member countries had recognized the harmonization of animal disease control as one of important issues, but each country had not taken concrete individual actions nor regional actions at all.

1¹³. In mid-term reviews during the project, a “common system” in indicator 1 was defined as a mechanism for continuous information sharing, rather than an IT-based system. This ex-post evaluation followed this definition.

ii. Indicator 2: The Number of Internationally Recognized Methods¹⁴ for Diagnosis, Vaccine Production, Quality Control, and Animal Quarantining Commonly Introduced to Member Countries

Although quarantine methods did not show specific improvement as shown in Output 4, particular diagnostic methods were newly introduced to all the member countries (output 2), and vaccine production was developed in some of the member countries (output 3). Hence, indicator 2 was achieved to an extent¹⁵. Because the central-level diagnosis laboratory of each country as the focus of the Phase 1 was the organization of resources in each country and diagnosis technologies (output 2) can be the basis of vaccine production (output 3) and quarantine skill (output 4), it was significant that the diagnosis skills of the central-level diagnosis laboratory were improved.

In summary, Phase 1 largely achieved its objectives; therefore, its effectiveness was high.

3.2.1.2 Phase 2

1) Project Output

i. Output 1: Strengthening Surveillance Techniques for Animal Diseases in Each Member Country¹⁶

As shown in Table 9, pilot sites were selected in each country. Many things were done to improve, introduce, or strengthen diagnostic methods: personnel training for animal health control, the procurement of equipment, and the dispatch of experts. As a result, the indicator of this output “the number of standard diagnostic methods improved or newly introduced in the implementing agencies” was increased.

¹³ Refer to the first paragraph of 3.2.1 Effectiveness. In this ex-post evaluation, “strengthen” was focused for evaluation judgment, rather than “establish”.

¹⁴ According to responses to the interview in this ex-post evaluation, the definition of “internationally recognized methods” was not clarified during the project. In addition, the methods supported by Japanese experts were also different from standardized methods defined by OIE reportedly. In this ex-post evaluation, the methods supported by Japanese experts were regarded as internationally recognized methods.

¹⁵ Project design of Phase 1 included overlapping between outputs and project purposes (or each indicator). Phase 1 had indicators regarding changes happened by the project activities such as strengthening of system or human resources and improvement of skills, etc., but the indicators controlled by the project activities or the ones directly describing the results of project activities are suitable for output indicators so that the project logic is clearer.

¹⁶ Refer to the first paragraph of 3.2.1 Effectiveness. In this ex-post evaluation, “strengthen” was focused for evaluation judgment, rather than “maintain”.

Table 9 Activities for Strengthening Surveillance Techniques

Country	Activities
Cambodia	Procurement of equipment for laboratory in Kompong Cham; training of provincial staff and dispatch of experts on testing and diagnosing the presence of parasites and bacteria
Lao P.D.R.	Procurement of equipment for laboratory in Savannakhet; training and dispatch of experts on basic methods of testing and diagnosing the presence of parasites, including training by the National Animal Health Center supported by Phase 1
Malaysia	Dispatch of Japanese experts to Johor Bahr Regional Veterinary Diagnostic Laboratory to impart knowledge on Newcastle disease and methods of virus separation via tissue cultivation; procurement of equipment was limited to simple equipment.
Myanmar	Procurement of equipment to Mandalay Regional Veterinary Laboratory and dispatch of experts on agglutination reaction test, bacteriology, etc.
Thailand	Procurement of equipment for conducting ELISA diagnosis for the Mae Hong Son Animal Quarantine Station
Vietnam	Dispatch of experts for Regional Animal Health Office No. 4 on viral diagnosis through tissue culture, provision of equipment to the laboratory of Quang Nam Animal Health Office and training on basic bacteria and microbiological diagnosis.

(Source) JICA project documents, terminal evaluation report

ii. Output 2: Strengthening a Surveillance Information System for Animal Diseases in Each Country

This output was called “establishing” in Japanese, but “strengthening” in English. In addition, “establishing an appropriate information network system connecting the field-level, local-level, and central-level in each member country” was set as the indicator of PDM. The intention at the beginning of the project was not very clear, as it targeted strengthening the flow of animal health information among the field-level, local-level, and central-level and relevant human resources development organizations; strengthening organizational and administration capacity; and further system establishment and maintenance.

In this ex-post evaluation, as mentioned above, the evaluation focused on “strengthening” the system or policy framework rather than on establishing or maintaining the systems.

According to interviews in the ex-post evaluation, through Phase 2, the trial to establish information flow from the field-level to the local-level and then from the local-level to the central-level was conducted, and opportunities for the capacity development of animal disease control personnel in the field and local areas were provided through training. As a result, all the countries except Thailand (where there was much activity) reported cases of improvement in the information flow between the field-level and local-level as well as communication improvement (Table 10).

Therefore, because the improvement of a surveillance information system was recognized, output 2 was achieved.

Table 10 Achievements of Strengthening Surveillance Systems through Pilot Activities
(Perception by Stakeholders of Each Country)

Country	Achievements
Cambodia	According to the interviews, the quality of information from village animal health workers improved.
Laos P.D.R.	According to the interviews, information from village veterinary workers (VVWs) was provided promptly because the VVWs acquired knowledge about diseases from the District Agriculture and Forestry Office.
Malaysia	With the orientation of a computer-based animal health information system (introduced in October 2010), the improvement of the surveillance structure from the farmer level was attempted. Knowledge of community works was accumulated according to the interviews.
Myanmar	According to the interviews, the relationship between veterinary officers of the township level and animal health workers led to more information and/or reports being provided to the township office.
Thailand	There were no activities to develop surveillance systems, because the pilot activity in Thailand was to establish and strengthen a diagnosis laboratory in quarantine station.
Vietnam	According to the interviews, the reporting mechanism was strengthened in terms of diagnosis, report writing, and the promptness of reporting from the field-level. However, the project activities were helped by the improvement of communication methods (such as the spread of mobile phone use).

(Source) JICA project documents

iii. Output 3: Building a Regional Structure for Animal Disease Surveillance in Member Countries

An official regional structure (such as a relationship based on agreements or a Memorandum of Understanding) was not formed among implementing agencies or central-level laboratories¹⁷.

However, a series of activities were conducted to set its foundation, including regional workshops, trainings, study tours, and the dispatch of regional experts from Thailand, Malaysia, and Vietnam. As a result, in Phase 2, a National Laboratories Directors meeting was launched, and was expected to promote collaboration among technical personnel and align diagnostic skills among member countries.

2) Achievement of Project Purpose

i. Indicator 1: The Number of Staff Members with Sufficient Capabilities in Animal Disease Surveillance (Local-core/Provincial-Level (Partially Including Central-Level), District/ Township-Level and Field-Level)

This indicator had been measured by the training results shown in Table 11. However, this was a substitute indicator because the number of trainee did not exactly mean “the number of the staff members with sufficient capabilities.” This ex-post evaluation used this

¹⁷ Refer to the first paragraph of 3.2.1 Effectiveness. In this ex-post evaluation, “strengthen” was focused for evaluation judgment, rather than “establish”.

substitute indicator because it was used during the project period, but there is a gap between it and the true indicators. The target numbers of the indicators also lack clarification. The achievements of the indicators were judged with consideration given to various situations and not only the numbers from the training results.

As shown in Table 11, each member country provided training in how to diagnose certain diseases (according to the pilot activities) for the local-core/provincial-level, district/township-level and field-level human resources (village animal health workers, etc.). The terminal evaluation judged the training to be “considerable,” and the indicator was deemed achieved. In addition, various stakeholders of implementing agencies responded with a similar opinion during interviews in the ex-post evaluation.

Even in this ex-post evaluation, it was judged that sufficient training was provided to develop capacity and acquire the knowledge and experiences, as following three points.

1. The results of training for the local-core/provincial-level and district/township-level showed the achievement of the target numbers. This means that the local-core/provincial-level and district/township-level that took core role for the pilot activities participated in the training more than the target.
2. As for the field-level in Malaysia and Myanmar the number of trainees exceed the target numbers.
3. In addition, even at the field-level in Cambodia, Laos, Thailand and Vietnam, there were sufficient trainees, although the target number was not achieved. Because the field-level human resources were volunteer workers, but not government staff, it could be difficult to grasp the numbers as well as to control their participation into the training. In addition, according to the contents of the pilot activities such as the trial of strengthening linkages among the field-level, local-level, and central-level, the results mentioned below was sufficient to examine the trial. Therefore, it is difficult to judge the fact that the target number at the field-level was not achieved, as the negative elements for strengthening surveillance capacity as the project purpose mentioned.

Table 11 Number of Trainees in Phase 2 (Actual/ Target)

Country	Local-Core/ Provincial-Level (Partially Including Central-Level)	District/Township-Level	Field-Level
Cambodia	7/4	7/23	87/176
Laos P.D.R.	21/3	31/40	121/162
Malaysia	51/2	65/11	296/202
Myanmar	47/35	67/12	85/49
Thailand	-	-	3/4
Vietnam	8/8	40/40	40/152

(Source) JICA project documents

In conclusion, it is implied that the surveillance capacity was improved focusing the human resource development in the local-core/provincial-level and district/township-level human resources, and the number of the staff with sufficient capacity of animal disease surveillance was increased sufficiently, even though the substitute indicators was partially achieved.

ii. Indicator 2: Amount of Epidemiological Data Collected and Analyzed in Each Member Country

Through pilot activities, the local-level facilities were enabled to collect more disease data that can be diagnosed with strengthened or newly gained methods, as shown in Table 12. This achievement could be attributed to capacity improvement through the procurement of equipment, training, and guidance of experts. These skills were mainly supported only by this project without any other international donors' support. According to the interviews to stakeholders, these skills have still been used. Thus, the skills of a sufficient number of staff were strengthened for at least some kinds of diseases.

Table 12 Data that Could be Newly Collected After Pilot Activities

Country	Number of Data	Data that Could be Newly Collected
Cambodia	2	Internal parasitic diseases, hemorrhagic septicemia
Lao P.D.R.	2	Parasitic diseases of cattle and buffalo, hemorrhagic septicemia
Malaysia	1	Newcastle disease
Myanmar	2	Tuberculosis, brucellosis
Thailand	1	FMD of imported cattle and buffalo
Vietnam	1	Swine cholera

(Source) JICA project documents

In the light of the above, Phase 2 largely achieved its objectives..

In this judgment, indicator 2 was weighed. One of the reasons is that indicator 1 was judged with substitute indicators. In addition, the improvement of diagnostic capacity, such as the increase of the number of diagnosable diseases (indicator 2), showed the improvement of work performance and quality of services more directly than the number of trainees (indicator 1) did. Moreover, the contribution to the overall goal of Phase 1, such as the improvement of animal health, can be more clarified with indicator 2.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

1) Phase 1 - Indicator: Improvement of Animal Health

At the beginning of the Phase 1, the indicator of “improvement of animal health” was “the improvement of animal disease incidence.” However, after the mid-term review in 2005,

it was changed into “development of sustainable system for animal disease control in each country” in order to make the indicator practical and measurable. It means the overall goal was changed from “the improvement of animal health status” to “strengthening of animal disease control system to promote animal health.”¹⁸

As for the animal disease incidence, tables 3 and 4 in 3.1.2 Relevance show that trans-boundary animal diseases continue to be reported; the situation is still not secured. In addition, improving the animal health situation involves many factors apart from improving the surveillance information flow and strengthening of diagnostic skills: increase or decrease of the number of livestock in the region, coverage and quality of veterinary services, capacity development of service provider organizations, behavioral change among animal farmers, situation of control on illegal border-crossing and others.

As for the strengthening of animal disease control system, all of the countries except Malaysia and Thailand still need technical support from development partners.

However, there has been some progress on the improvement of animal disease control system after Phase 1. For example, the central-level laboratories increased capacity to take a role as resource organizations for the local institutes in Phase 2. As shown below in 3.4.1 Sustainability, the policy and institutional environment has been improved. As the terminal evaluation showed, Phase 1 contributed to the development of animal health system by human resources development.

In the light of the above, the overall goal of Phase 1 has not been achieved because the current animal health status and the situation of the animal health system still needs to be improved due to various factors uncontrolled by the project, although Phase 1 contributed to the improvement of the situation by strengthening diagnostic capacity and the development of an institutional environment.

2) Phase 2 - Indicator: Establishment of the Surveillance Structure for Animal Diseases in Member Countries

Several regional frameworks and networks for animal health surveillance and control are now in place in Southeast Asia:

- WAHIS, an animal health information system introduced in 2005 and managed by OIE
- OIE Regional Work Plan Framework under OIE Fifth Strategic Plan 2011–2015¹⁹
- OIE/FAO GF-TADs launched in 2004 and was continued in 2014

¹⁸ “Improvement of animal health” in Japanese includes both meanings; epidemiological status of animal health and system status for animal disease control. But generally speaking, it in English means the former, and the improvement of animal health system” indicates the latter.

¹⁹ No similar framework existed before 2011. Because OIE Fifth Strategic Plan 2011-2015 emphasized the strengthening of regional collaboration, Regional Work Plan Framework was issued.

- Regional Strategic Framework for Laboratory Capacity Building and Networking in ASEAN, developed in 2013
- Regional Strategic Framework for Veterinary Epidemiology Capacity Development and Networking in ASEAN, developed in 2013
- National (central-level) Laboratory Directors meeting led by the Project
- Southeast Asia and China FMD (SEACFMD) Campaign 2020 (continued)

Because some of them have been established after the end of the project, these developments clearly show that regional frameworks and networks have been strengthened.

Among them, the project contributed to the strengthening of some frameworks, while the contribution on the others cannot be confirmed. For example, the central-level diagnosis laboratory Directors meetings started in Phase 2. During the project period, the first meeting was held in Malaysia, and the second was held in Thailand. Even after the end of the Phase 2, the third meeting was held in Malaysia in 2011, and the fourth was held in Vietnam in 2012 with support by FAO/OIE. The meetings have been conducted in serial number, which indicates that the meetings started by the project have continued even after the end of the project. The project could bring additional impact to the regional collaborations in Southeast Asia via the Director meeting. In addition, the animal movement control issued a joint statement of member countries in Phase 2. The discussion was taken over to the SEACFMD Campaign. Thus, it implies that the project contributed to regional dialogue by advancing arguments from the project to other platforms.

In summary, because regional frameworks and networks have been strengthened after the end of the project, the overall goal of Phase 2 has been largely achieved. Although some of the causal relationship between the project and the development of regional frameworks and networks is not fully clear, the contributions can be recognized.

3.2.2.2 Other Impacts

Respondents in the ex-post evaluation reported positive impacts on the smoothness and responsiveness of information exchange and communication, brought by developed personal relationships via the projects. Moreover, the improvement in information exchange and communication led to the promotion of early detection and responses for outbreaks of animal diseases. For example, during the 2010 FMD outbreak in Myanmar, the communication channel developed by the project was utilized, a reporting structure was promptly established between Myanmar and Thailand and early responses against diseases could be conducted.

In addition, as the project enjoyed the collaboration of OIE, FAO, and other donors, the publicity of JICA's activities benefited from the positive impact. Indeed, this project was sometimes introduced in the documents and reports of the meetings or activities of other donors. The presence of JICA in the regional collaboration for animal disease control in

Southeast Asia was noted.

Meanwhile, the relationship between the pilot activities and regional activities was not very clear and implementers of both activities were also not consistent. In addition, due to the needs of remote communication among member countries, the opportunities of the meeting with all the stakeholders including Japanese experts was limited. As a result, the dissemination of lessons from regional activities to pilot activities or sharing of experiences of the local implementers of pilot activities with those from other countries was limited. Thus, ripple effects or impacts of the pilot activities of Phase 2 were partially limited.

As of ex-post evaluation, no report indicated a negative impact on the natural environment due to laboratory waste or similar sources. In addition, the projects did not induce displacement of inhabitants.

This project has somewhat achieved that the project purposes and overall goal. For the project purpose, the strengthening of diagnosis techniques on animal disease in Phase 1 and the strengthening of surveillance for animal diseases were achieved respectively. For overall goal of phase 1: the improvement of animal health, the efforts are still needed, but some contribution by the project has been recognized. For overall goal of Phase 2, some contributions to strengthening of the regional surveillance mechanism were recognized.

3.3 Efficiency (Rating: ③)

3.3.1 Input

Table 13 Plan and Actual Inputs in Phase 1

Inputs	Plan	Actual Performance
(1) Experts	3 persons for long-term (Chief advisor, project coordination, animal disease prevention) About 25 persons for short-term	6 persons for long-term (Chief advisor, project coordination, animal disease prevention) 19 persons for short-term (areas related to animal disease diagnosis)
(2) Trainees	No information about the number and field of training, although R/D mentioned the training in Japan.	Total 17 participants (epidemiology, animal quarantine, vaccine production, diagnosis, etc.)
(3) Third-Country Training Programs	It was planned under the Regional Technical Cooperation Promotion Program (RTCPP)	Total 111 (many training related to animal diseases diagnosis were conducted)
(4) Equipment	Equipment, device, materials, vehicles necessary for project implementation	Equipment for diagnosis and experiment and for vaccine production, vehicles, etc.
Total Project Cost	Total 620 million yen (As of Survey for discussion on implementation study in March 2001)	Total 470 million yen
Total Local Cost	No information in the Record of Discussion	No detailed information, while Thailand burdened training fee, fee for lecturers, etc. for training in Thailand

(Source) JICA project documents

Table 14 Plan and Actual Inputs in Phase 2

Inputs	Plan	Actual Performance
(1) Experts	3 persons for long-term (Chief advisor, project coordination, animal disease prevention) As for short-term, there was no planned number, but the dispatch on demand was planned.	3 persons for long-term (chief advisor, project coordination, animal disease prevention) 39 persons for short-term (areas related to animal disease diagnosis)
(2) Trainees	Trainees planned to be accepted on demand.	Total 12 participants (animal disease control, animal quarantine, etc.)
(3) Third Country Training Programs	There was not any information in the Record of Discussion.	No participants, although there were similar activities as regional activities
(4) Equipment	Equipment, device, and materials necessary for project implementation	Equipment for diagnosis and experimentation, etc.
Total Project Cost	450 million yen	380 million yen
Total Local Cost	No information in the Record of Discussion (however, there were financial support for project assistant staff and cost sharing for training in Thailand, etc.)	2,500USD by Lao P.D.R., 16,400 USD by Malaysia, 22.71 million Kyat by Myanmar, 3.525 million Bhat by Thailand, 22 thousand USD by Vietnam (as of terminal evaluation)

(Source) JICA project documents

3.3.1.1 Elements of Inputs

The dispatch of Japanese and regional experts to neighboring countries and the procurement of equipment were highly praised by the implementing agencies for their contribution in improving diagnostic skills, etc. Good practices were established from the achievements of Phases 1 and 2. (1) Thai experts who had received capacity building training from Japanese experts before Phase 1 were dispatched to neighboring countries. (2) The implementing agency in Vietnam that underwent capacity development in Phase 1 served as a regional expert for neighboring countries in Phase 2. (3) Facilities in Thailand and Malaysia constructed by Japan's Grant Aid before Phase 1 were utilized for training. This indicates that the input from the past relevant project and the correlation between Phase 1 and Phase 2 were considered and that the smooth implementation of the project activities was promoted through utilizing the experiences and human relationships among stakeholders from the past project.

However, because of the regional cooperation, the burden of project coordination increased. In the background, remote communication was a precondition of the regional project and increased the number of stakeholders. The remote communication included not only physical distance but also procedural differences because additional procedures were needed for working in different countries.

3.3.1.2 Project Cost

The project cost was lower than planned. Phases 1 and 2 consumed only 70.1% and

84.4% of their planned costs, respectively. Differences between the planned and actual costs possibly came from fluctuations in the exchange rate (from 2000 to 2012, the yen gained strength against other currencies such as the US dollar), meticulous designing and amendment of project activities after the start of the project, and other factors. In addition, Thailand bore the costs for the training fee of the 111 trainees from member countries, the fee for lecturers, other fees, and the accommodation of the FMD diagnostic center in Phase 1. This sharing helped reduce the cost.

3.3.1.3 Period of Cooperation

Phases 1 and 2 had a period of cooperation of five and three years, respectively, which adhered to the plan.

Both the project cost and period of cooperation stayed within the plan; therefore, the efficiency of the project was high.

3.4 Sustainability (Rating: ②)

3.4.1 Related Policy towards the Project

(Sustainability of Regional Policy)

As mentioned in 3.2.2.1 Overall goal, regional policies, and frameworks for animal disease control, including GF-TADs and ASEAN-based collaboration initiatives, currently exist in Southeast Asia. Among them, the OIE Regional Work Plan Framework and ASEAN-based collaborations were established after the end of Phase 2, which implies the activation of regional activities in this region. Therefore, sustainability of regional policy was high.

(Sustainability of National Policies)

Based on these regional frameworks mentioned above, several livestock development policies and/or animal disease control policies were drawn in each member country, as shown in Table 15. Further, the development of guidelines and rules for veterinary services and the amendment of existing laws have been promoted. Among some countries, the increase in the number of rules and guidelines after the end of Phase 2 was observed. This indicates the fulfillment of the policy environment for animal disease control. Therefore, the sustainability of the policy environment in each member country is high.

Table 15 Livestock Development and Animal Disease Control Policies
as of Ex-Post Evaluation

Country	Livestock Policy	Animal Disease Control Policy
Cambodia	National Strategic Development Plan update 2009–2013	National Strategic Development Plan update 2009–2013
Laos P.D.R	7 th National Socio-Economic Development Plan 2011–2015	7 th National Socio-Economic Development Plan 2011–2015
Malaysia	10 th Malaysian Plan 2011–2015	Service protocols, guidelines, and manuals on animal disease control
Myanmar	National Medium Term Priority Framework 2010–2014	National Medium Term Priority Framework 2010–2014
Thailand	11 th National Economic and Social Development Plan 2012–2016	11 th National Economic and Social Development Plan 2012–2016
Vietnam	Socio-Economic Development Strategy 2011–2020	Ordinance on Veterinary Medicine, Draft of Animal Health Law

(Source) Policies from member countries

3.4.2 Institutional and Operational Aspects of the Regional Framework and Implementing Agency

(Sustainability of the Regional Framework)

As mentioned in 3.2.2.1 Achievement of Overall Goal, the two main regional operational structures are the OIE Regional Representation for Asia and the Pacific and the ASEAN. Hence, a regional structure has been maintained. Because the ASEAN-based regional structure was established after the end of the project, its development in particular indicates deepened regional collaboration.

(Sustainability of Operation of Implementing Agencies)

The institutional structure of implementing agencies in each country has been maintained or strengthened. For example, in Lao P.D.R., the Department of Livestock and Fisheries of the Ministry of Agriculture and Forestry reformed its structure so that it could take on more responsibility for animal disease control. The National Animal Health Center (former) was split into the National Animal Health Center (present) and the National Animal Health Laboratory in 2012, and the local quarantine office was moved from provincial-level administration to national-level administration. In Cambodia, the Department Animal Health and Production is expected to be promoted to a Directorate, which will give it more responsibility and authority for animal disease control.

In summary, the institutional and operational structures of the regional frameworks and implementing agencies have been maintained or developed.

3.4.3 Technical Aspects of the Implementing Agency

(Technical Sustainability of Central-Level Administration)

Currently, the central-level laboratories of member countries are still recognized as focal

points for various international donors and as base diagnostic facilities (Table 16). Thus, they are in the environment where they can sustain their technical skills.

Table 16 Present Status of Central-Level Diagnostic Laboratories

Country	Laboratory	Present Status
Cambodia	National Veterinary Research Institute	Functionalized as a focal diagnosis laboratory for donors and top referral diagnosis laboratory; with a massive budget for avian influenza control, the institute strived to develop and strengthen local laboratories and oversee the technical transfer of knowhow from experts to local veterinary personnel and others.
Lao P.D.R.	National Animal Health Center	In 2012, it was separated into the National Animal Health Center and the National Animal Laboratory. Laboratory function was transferred to the latter. In the same year, the laboratory upgraded its facilities and equipment with support from the EU.
Malaysia	National Veterinary Research Institute	Counterpart diagnosis laboratory even before Phase 1; presently a top reference laboratory in Malaysia; after the end of Phase 2, became a facility for JICA's Third Country Training Program
Myanmar	Central Veterinary Diagnostic Laboratory – Yangon	Facing challenges in the policy environment or financial constraints in purchasing reagents or consumables; skills/technologies supported by the projects are still used. Vaccine production continues as well. An upgraded and upcoming FMD laboratory will be funded by a Grant Aid Project.
Thailand	National Institute of Animal Health	Counterpart organization for long-term cooperation with Japan; focal point of international animal health research; includes OIE/FAO FMD Reference Laboratory; training facilities for international and domestic human resources
Vietnam	National Center for Veterinary Diagnosis	Functionalized as a core diagnostic institute; highest-rated diagnostic capacity according to OIE's evaluation mission on Performance of Veterinary Services (2010)

(Source) Results of field survey (responses to interviews, observation, etc.)

Most diagnostic skills supported by the projects, such as vaccine production, are used in these facilities. Meanwhile, member countries have accepted the evaluation mission of the OIE as regards the performance of veterinary services as well as rendered efforts to improve their capabilities. At the same time, the central-level diagnosis laboratories have kept their responsibility to promote the capacity development of their local laboratories and personnel for veterinary services.

Thus, the technical sustainability of the central-level laboratories is maintained.

(Technical Sustainability of Local-Level and Field-Level Administration)

As for the implementing agencies in the pilot areas of Phase 2, several staff members remained even after the end of Phase 2. Hence, capabilities strengthened by Phase 2 have been maintained overall.

3.4.4 Financial Aspects of the Implementing Agency

(Financial Sustainability of Central-Level Diagnosis Laboratories)

As for Thailand and Malaysia, financial sustainability is high so that they can manage their activities in self-reliant manner. As for Cambodia, Lao P.D.R, Myanmar, and Vietnam, although they have some financial vulnerability because they have received donor support, the situation is getting better because financial flow has grown for avian influenza control. The central-level diagnosis laboratories have increased their function and responsibility based on such donor funds. This means that the laboratories ensure their financial sustainability by donor funds as a precondition.

(Financial Sustainability of Local-Level and Field-Level (Pilot) Activities)

As mentioned above, most pilot activities were stopped because of a shortage of funds (Table 17). For example, laboratory activities are at a standstill because they cannot purchase reagents or consumables, and community activities have stopped because of a lack of financial resources that would allow villagers or village animal health workers to gather or allow vaccines to be purchased.

Table 17 Present Status of Pilot Activities

Country	Current Situation
Cambodia	Laboratory activities were stopped. About six months after the end of the project, the laboratory at Kampong Cham was taken down to be transferred. This transfer has not conducted yet. Equipment procured by the project has been stored appropriately. As of ex-post evaluation, the Kampong Cham Provincial Office has a plan to establish new laboratory room and operate it again.
Lao P.D.R.	The laboratory in Savannakhet is operational, but almost all community works targeting Village Animal Health Workers have stopped because of the lack of funding.
Malaysia	Activities of the Johor Bahru Regional Veterinary Laboratory and community activities are being continued. The Newcastle disease-free zone has been expanded. However, a computer-based information system that the project tried to develop has not been used because of maintenance difficulties that are caused by problems with an external engineering company. As of ex-post evaluation, the Department of Veterinary Services addressed this issue to be solved, working on external engineering company.
Myanmar	The lack of resources to buy reagents, vaccines, and other supplies resulted in the disruption of the activities of Mandalay Veterinary Diagnostic Laboratory and the community. Since 2013 JICA Advisor (on Livestock Development in Central Dry Zone) has been dispatched and worked in collaboration with the Laboratory.
Thailand	The Animal Quarantine Station in Mae Hong Song is utilized. Despite concern about the decrease of the number of animals, this trend reversed after the end of the project (five times in comparison to that in 2010). The station functions as a training organization for neighboring universities.
Vietnam	The Laboratory of Regional Animal Health Office No. 4 is operational. The Laboratory of Quang Num State Department of Animal Health is operational, but certain equipment procured by the project has not fully been utilized because of skill shortage. Community activities have stopped because of financial constraints.

(Source) Results of field survey (responses to interviews, observation, etc.)

Amid such shortages, national budget allocations might change as the policy priorities regarding diseases change. Despite increases in the total national budgets for animal disease control, the priority for the diseases targeted by the project decreased, and expenses for the planned activities may not be disbursed.

Although there were some recommendations for further activities after the end of the project in the terminal evaluation report, a detailed discussion of exit strategies was not conducted for the continuation or termination of pilot activities. How to utilize the knowledge and lessons learned from the activities was not discussed either.

Thus, for financial sustainability, the central-level diagnosis laboratories do not have a problem, but the pilot project faced challenges.

The policy environment, operational, technical, and financial sustainability of the central-level diagnosis laboratories supported since Phase 1 was high, but the pilot activities supported by Phase 2 had some financial problems; therefore, the sustainability of the project effects is fair.

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

The Japanese Technical Cooperation Project for Animal Disease Control in Thailand and Neighboring Countries and the Japanese Regional Cooperation Project for Animal Disease Control among Cambodia, Lao P.D.R., Malaysia, Myanmar, Thailand, and Vietnam were consistent with the national policies of the member countries and the regional directions that addressed the capacity development for these needs, because they aimed to improve the animal health situation in these countries and alleviate the negative impact of animal diseases on livestock development. In addition, they were consistent with the Japanese aid policy that prioritized human resource development in Southeast Asia and the prevention of animal disease control. Thus, these projects were highly relevant. In the present, the animal health situation is still a challenge in the region, but the effectiveness and impact of the projects were deemed fair in increasing the technical capability of diagnosing disease and promoting personal relationships and communication, which are the core elements of trans-boundary animal disease control. Because the project activities were implemented as planned, the projects were efficient. Although the priority of animal disease control in policy remained high, the organizational structure of the implementing agencies of implementing agencies have been maintained, and the activities of the central-level diagnosis laboratories which were supported since Phase 1 have been continued, the pilot activities supported by Phase 2 were stopped in some countries after the project because of financial challenges. Therefore, the sustainability of the projects was deemed fair.

In light of the above, these projects are evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agencies

[Strengthening Links among In-Country Organizations]

The projects did not fully support strengthening links and coordinating between the central-level, local-level, and field-level. Particularly in Phase 2, the harmonization between regional activities and pilot activities in each member country was fragmented, which resulted in limiting the impact of the project activities. Because the regional activities and in-country activities for animal disease control were implemented at the same time even from now on, activities to strengthen links between the central-level and field-level, such as the increase of the frequency of communication between different levels, are needed to be implemented and expanded.

4.2.2 Recommendations to JICA

[Cooperation Focusing on In-Country Animal Disease Control Measures]

Japan has shown its commitment to regional collaboration in Southeast Asia through its financial contribution to GF-TADs, collaboration with the OIE Regional Office, granting of aid equipment through OIE. On the other hand, various regional frameworks have existed in Southeast Asia. Furthermore, various other regional collaboration frameworks have existed. Therefore, JICA does not need further technical cooperation on regional collaboration as its role.

However, Cambodia, Lao P.D.R., Myanmar, and Vietnam still need to improve infrastructure such as facilities and equipment for animal disease control and strengthen their management capacity. Some countries have already submitted their requests²⁰ and/or have their requests accepted²¹. In the examination of these requests, information sharing with other partners such as OIE and FAO is expected. Furthermore, utilization and dissemination of experiences of capacity development of the central-level diagnosis laboratories, which was the most significant output of the projects, should be considered to be included in the new projects. For example, it is possible to consider various options such as strengthening the local diagnosis laboratories as Phase 2, improving the capacity of quarantine stations and quarantine systems as the pilot activities in Thailand, and the capacity development of testing in food hygiene and security as application of strengthened diagnosis capacity for relevant areas.

²⁰ Implementing agencies of Vietnam and Lao P.D.R. have already discussed and/or requested a new project.

²¹ For example, it is Grant aid project for the improvement of FMD vaccine production facility in Myanmar

4.3 Lessons Learned

1) [Development of Opportunities of Collective Actions]

In the regional cooperation which aims at strengthening regional collaboration, the effectiveness and impact of regional technical cooperation and collaboration can be enhanced by considering the possibility that each country, not only Japanese experts, can serve as a resource for all of the others²², as well as by promoting and attracting opportunities²³ of participation in collaborative actions among member countries.

2) [Necessity of Planning Projects in Consideration of Management Issues Specific to Regional Cooperation]

In the planning of regional cooperation, management issues regarding activities that need special attention should be examined carefully. Followings are the examples of points that require special attention in the project formulation the following issues can be unique to the regional cooperation:

- Promoting correlation between regional activities and in-country activities. (There are two viewpoints: a regional perspective and in-country perspective. Roles for regional cooperation management and in-country management are sometimes given to different actors, thus targets of intervention differs. In promoting correlation between regional and in-county activities, therefore, the clarification and identification of each involved actor's role, prioritized activities, and link of each to others is important to raise synergism between regional and in-country activities.)
- Reducing coordination burdens induced by remote communication. (In regional cooperation, the amount of time that Japanese experts to stay in the each county's activity fields can be decreased, and communication can be shifted to remote terms. As a result, consensus building among stakeholders might become more difficult, and the burden of work that generally needs the face-to-face communication might increase²⁴. As measures to address these issues, for instance, including activities such as developing a standardized document about project management and its tools and sharing it with stakeholders can reduce the diversities of the project activities among member countries and reduce work burden.

²² Sending countries of regional experts are resources of skills and knowledge for neighboring countries. But even receiving countries are resources for experiences of international cooperation as well as for learning on animal disease control in different context, for sending countries.

²³ There are some measures to promoting and attracting opportunities of participation, such as workshop where participants gather from several countries, practical training with careful guidance of experts, development of practical contents and curriculum of training, dispatch of regional experts relevant to training contents.

²⁴ Additional burden and time for making appointments or movement between countries or movement, or additional procedures for international travel is increased in the case that the activities need face-to-face communication.

3) [Necessity of Management Capacity of Government Organization in order to Address the Negative Influence of the Changes of Priority Diseases in Policy]

It was confirmed that as priorities of some animal diseases that were covered by the projects activities felled in each participating county since the completion of the projects, most pilot activities generated by the projects have been stopped – strengthened capacity and experiences from the projects cannot be utilized under such a situation, while a large amount of funds were injected into highly pathogenic avian influenza when the ex-post evaluation was conducted. When the policy changes its priority in animal diseases, sometimes the government has to establish the control measures from scratch. Changing this priority is inevitable; therefore, it is important to include horizontal cross-disease-capacity development activities such as strengthening organizational and service management capacity, improving the comprehensive disease information management system, and providing quality control activities; that can be applied for any disease management cases, in order to alleviate the negative impact of the change of priority. By combining cooperation in specific diseases with in, cross-disease issues, certain experiences and lessons from one disease can be utilized for other diseases when the priority changes in the future.

4) [Setting Realistic Overall Goals that Can Be Achieved by the Efforts of Implementing Organizations]

The overall goal that is set should be one that is logically connected to project purposes and can be achieved through the effort of each country after the end of the project. Institutionalization of diagnostic technologies supported by the projects; or expansion of the number of diagnosis laboratories and/or services with animal diseases preventive technologies supported by the projects can be possible options.

5) [Developing Exit Strategies for Pilot Activities Considering Financial Sustainability and Relevance to Policies]

Most pilot activities generated by the projects were stopped after the end of project due to budget allocation, the change of policy priorities, and the lack of a detailed exit strategy for them. In case a project includes pilot activities, it is important to make exit plans for the post-project period and of desirable use of the results of the pilot activities²⁵ that consider budget allocation and policy direction.

²⁵ For example, it is better to make it clear by the end of the project whether the pilot activity is sustained or terminated. In addition, in the case that the pilot activities are sustained it is desirable to make a detail plan of measures to increase sustainability. On the other hand, if the sustainability of the pilot activities is not necessary, it is desirable to make a plan how to utilize the results of the pilot activities as well as how to share them with stakeholders.

BOX: Issues during the Planning of the Regional Technical Cooperation Project

I. Purpose

JICA developed a handbook on designing and implementing regional cooperation for cross-border issues in 2008 (in Japanese language). On the occasion of the ex-post evaluation of the Project for Animal Disease Control in Thailand and Neighboring Countries (Phase 1) and the Project for Animal Disease Control among Cambodia, Lao P.D.R., Malaysia, Myanmar, Thailand, and Vietnam (Phase 2) as well as on the Project of the Capacity Development for Improvement of Livestock Hygiene in the Southern Part of South America, the external evaluators summarized the lessons learned for the implementation of regional cooperation, including cross-project analysis, according to the points of the views of JICA's handbook.

II. Lessons Learned

1) [Output and Outcomes Specific to the Regional Technical Cooperation Project]

In regional technical cooperation, outputs and outcomes are diverse. In order to increase the relevance of the implementation of regional projects, it is necessary to clarify the difficulties preventing the achievement of outputs and outcomes and those of the environment and situation where the project is brought in.

2) [Attention to the Initial Condition of Project Implementation]

In planning regional technical cooperation, it is essential to examine the role of implementing agencies, the presence of existing regional frameworks, and the interrelationship between the projects and existing regional frameworks.

3) [Preventing the Fragmentation of Project Activities and Designing to Strengthen Synergism between Countries]

In the regional technical cooperation project, it is possible that the project can consist of small bilateral projects in each country. In order to avoid such a situation, the project purpose, output, activities, target group, implementer, and management methods must be unified for all involved countries. For example, in case the project purpose expects the regional framework to change, it is important to clarify the final outcomes for the regional framework in the PDM and the intermediate outcomes that will be created on the way to the final outcomes.

4) [Utilization of Regional Resources]

The utilization of regional resources is adequate because of (1) the increase of capacity to address development needs in the region in terms of regional activities, (2) the cost reduction in terms of project implementation, and (3) the development of responsibility and creation of more experiences in international cooperation as regional leaders. On the other

hand, there are some disadvantages such as (1) the increase of the complexity of project design, (2) remote communication, and (3) the higher number of stakeholders, which leads to an increased coordination burden.

5) [Utilization of Advanced Countries Participating Regional Project]

The participation of advanced countries of animal disease control in regional technical cooperation has advantages in utilization and expansion of regional resources such as dispatch of regional experts and acceptance of trainees from neighboring countries. However, stakeholders of non-advanced countries do not always recognize such advantages, tend to focus on their own domestic needs, and cannot utilize regional resources very much. The resources of advanced countries should be utilized to raise awareness of the regional collaboration of non-advanced countries and create consistency between the organization implementing regional activities and the ones doing in-country system strengthening.

6) [Alleviation of the Burden of Project Coordination]

In the regional technical cooperation project, remote communication is mainly used. This increases the burden of project coordination, which leads to the dispatch of the personnel in charge of regional coordination or the addition of coordinators. It is necessary to alleviate the heterogeneity of project activities among member countries by developing a standardized document about project management and its tools and sharing it with stakeholders in order to reduce the work burden.

(END)