Tentative Plan of Operation

Version 0

Date: Oct 25, 2019

TO STARTED and currently CONTINIUES
un-performed yet, due to COVID19 fandemic and others
move to next year Please comcern consultants

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks	Monitoring: Issue	Monitoring: Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-			
Expert																										
Chief Advisor/Pathology (as a short-term expert)	Plan																							Assistant professor, Dr Lishiqu Borjigin arrived on October, 2021 in Mongolia		
	Actual																									
Project Coordinator(s) (as long-term expert(s))	Plan																									
	Actual																									
Other Experts with necessary expertise.	Plan																									
	Actual																									
Equipment																										
Necessary experimental instruments and equipment for research activities in the Project	Plan																									
	Actual																									
Necessary equipment and/or materials for educational activities in the Project	Plan																									
	Actual																									
Training in Japan																										
Bacteriology, Immunology, Epidemiology, Pathology, Molecular Biology, Bioinformatics and other necessary specialized areas	Plan																									
	Actual																									
In-country/Third country Training																										
	Plan																									
	Actual																									

Activities / Sub-Activities	Year	2020				2021				2022				2023				2024				2025		Responsible Organization: Japan	Responsible Organization: Mongolia	Achievements	Issue & Countermeasures
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun				
Output 1: The function of laboratory diagnosis for zoonotic diseases is enhanced in Mongolia through the development of LAMP / immunochromatography-based novel rapid diagnostic methods (kits) for detecting *Mycobacterium bovis* and *Burkholderia mallei* as well as updating existing disease diagnostic systems.																										
1.1. Development of a LAMP-based rapid diagnostic method (test kit) for M. bovis infection																										
1.1.1. To develop a LAMP-based method for detecting *M. bovis* -specific genetic region at the Hokkaido University (including drying of reagents).	Plan																							RCZC	IVM	to performing at the RCZD of Japan	
	Actual																										
1.1.2. To make the *M. bovis* gene detection method into a "*kit*" using an ink-jet printer in the Hokkaido University (trial production of a rapid diagnostic test kit).	Plan																							RCZC	IVM	to performing at the RCZD of Japan	
	Actual																										
1.1.3. To evaluate the sensitivity and specificity of the developed kit(s) with biological specimens of *M. bovis* -infected patients and animals in Mongolia .	Plan																							RIT RCZC	NCDC IVM		
	Actual																										
1.1.4. To prepare Standard Operating Procedure(s) (SOPs) for the genetic diagnosis of *M. bovis* infections in humans at NCCD following the improvements are made as appropriate based on the aforementioned evaluation results.	Plan																							RIT RCZC	NCCD		
	Actual																										
1.1.5. To prepare SOPs for the genetic diagnosis of *M. bovis* infections in livestock at IVM following the improvements are made as appropriate based on the aforementioned evaluation results.	Plan																							RCZC	IVM		
	Actual																										
1.2. Establishment of the LAMP-based gene detection method for tuberculosis complex in NCCD.																										
1.2.1. To introduce the LAMP-based gene detection method for tuberculosis complex into NCCD.	Plan																							RIT RCZC	NCCD		
	Actual																										
1.2.2. To evaluate the sensitivity and specificity of the gene detection method by comparing the test results obtained from conventional methods.	Plan																							RIT RCZC	NCCD		
	Actual																										

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks	Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-			
1.3. Development of a LAMP-based Rapid Diagnostic Method (Test Kit) for *B. mallei* infection																										
1.3.1. To develop a LAMP-based method for detecting *B.mallei* -specific genetic region at the Hokkaido University (including drying of reagents).	Plan																						FMV RCZC	IVM	to performing at th HU of Japan	
	Actual																									
1.3.2. To make the *B. mallei* gene detection method into a "*kit*" using an ink-jet printer in the Hokkaido University (trial production of a rapid diagnostic test kit).	Plan																						FMV RCZC	IVM	to performing at th HU of Japan	
	Actual																									
1.3.3. To evaluate the sensitivity and specificity of the developed kit(s) with biological specimens of *B. mallei* -infected animals in Mongolia .	Plan																						FMV RCZC	IVM		
	Actual																									
1.3.4. To prepare SOPs for the genetic diagnosis of *B. mallei* infections in humans at NCCD following the improvements are made as appropriate based on the aforementioned evaluation results. (*Note: the Activity 1.2.4 should be conducted in consideration of the results of epidemiological studies on B. mallei infection in human performed in the Activities under the Outcome 2.*)	Plan																						FMV RCZC	IVM		
	Actual																									
1.3.5. To prepare SOPs for the genetic diagnosis of *B. mallei* infections in livestock at IVM following the improvements are made as appropriate based on the aforementioned evaluation results.	Plan																						FMV RCZC	IVM		
	Actual																									
1.4. Development of an immunochromatography-based Rapid Diagnostic Method (Test Kit) for *B. mallei* infection																										
1.4.1. To search *B. mallei* -specific antigen by investigating the reactivity of protein, expressed in *E. coli* , etc. from selected specific genetic region of a *B. mallei* standard strain, with the serum collected from *B. mallei* -infected horses, in the Hokkaido University.	Plan																						FMV	IVM	to performing at th HU of Japan	
	Actual																									
1.4.2. To develop an immunochromatography-based method for detecting *B. mallei* -specific antibodies using the specific antigen protein selected in the Activity 1.3.1 and the positive serum of *B. mallei* -infected horses.	Plan																						FMV	IVM	to performing at th HU of Japan	
	Actual																									
1.4.3. To make the *B. mallei* -specific antibody detection method into a "*kit*" in collaboration with private enterprises in Japan or Mongolia (trial production of a rapid diagnostic test kit).	Plan																						FMV	IVM		
	Actual																									
1.4.4. To assess the sensitivity and specificity of the kit by performing non-inferiority or comparative superiority test with conventional methods such as complement fixation test and plate agglutination test using biological samples from infected horses in Mongolia .	Plan																						FMV	IVM		
	Actual																									
1.4.5. To prepare SOPs for the serological diagnosis of *B. mallei* infections in livestock at IVM following the improvements are made as appropriate based on the aforementioned evaluation results.	Plan																						FMV	IVM		
	Actual																									
1.5. To establish production systems for the genetic diagnostic kits described above by introducing Ink-jet printers into NCCD and/or IVM.	Plan																						FMV	NCCD IVM		
	Actual																									
1.6. Updating of the diagnostic flow for tuberculosis including detection of *M. bovis* as well as of the methods for detecting drug-resistant *M. tuberculosis* in NCCD.																										
1.6.1.To introduce the methods for isolating tuberculosis complex from human sputum specimens by culturing them with liquid medium (MGIT) as well as	Plan																						RCZC	NCCD		

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-				
solid (L-J) media for M. tuberculosis and M. bovis in NCCD, in conformity to the WHO-recommended methods.	Actual																						RIT	NCCD		

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-				
1.6.2. To introduce the MGIT-based drug susceptibility test mehod for secondline and new anti-tuberculosis drugs, according to the WHO recommendation.	Plan																							RIT RCZC	NCCD		
	Actual																										
1.6.3. To introduce the techniques of whole genome sequencing of tuberculosis complex using the next-generation sequencer into NCCD.	Plan																							RIT RCZC	NCCD		
	Actual																										
1.6.4. To establish a test method for comprehensively detecting drug-resistance-related genetic mutations for anti-microbial resistance (AMR) predictions using the next-generation sequencer (e.g., MinION) in NCCD.	Plan																							RIT RCZC	NCCD		
	Actual																										
1.6.5. To revise or newly develop SOPs of the diagnostic flow for tuberculosis in human including the detection of *M. bovis* as well as for the detection of drug-resistant *M. tuberculosis* .	Plan																							RIT RCZC	NCCD		
	Actual																										
1.6. To carry out practical consultations with relevant authorities concerned for gaining the approval of the project-developed diagnostic tests (kits) as standard tests for humans or livestock infectious diseases (e.g., SOP registration in individual organizations, official registries as the National Standard Methods) as well as for revising the diagnostic flow for tuberculosis in humans (including the detecting method for drug-resistant *M. tuberculosis*).	Plan																							RIT RCZC	MOH NCCD GAVS RVM		
	Actual																										
Output 2: The epidemics of tuberculosis and glanders as zoonotic diseases in human are evaluated using molecular epidemiological techniques.																											
2-1. Molecular-epidemiological evaluation of the epidemics of *M. bovis* Infection in human																											
2.1.1. To isolate *M. tuberculosis* and *M. bovis* from sputum samples of tuberculosis-suspected patients brought into the NCCD by culturing them on liquid and L-J medium, using the techniques introduced in the Activity 1.5.1.	Plan																							RIT RCZC	NCCD		
	Actual																										
2.1.2. To estimate the prevalence of *M. bovis* in the tuberculosis complex isolated from humans by determining the presence of *M bovis* in the colonies grown on L-J medium using the LAMP-based genetic detection method developed in the Activity 1.1.	Plan																							RIT RCZC	NCCD		
	Actual																										
2.1.3. To perform the activities for active case finding of tuberculosis with LAMP-based gene detection method for tuberculosis complex (established in the Activity 1-2) and/or IGRA by investigating slaughterhouse workers and owners of infected livestock, in order to collect the data and information for the risk analyses of zoonotic tuberculosis.	Plan																							RIT RCZC	NCCD		
	Actual																										
2-2. Molecular-epidemiological evaluation of the emergence of drug-resistant (multidrug-resistant) *M. tuberculosis* in human																											
2.2.1. To identify drug-resistant (multidrug-resistant) *M. tuberculosis* by performing a conventional drug susceptibility testing on the tuberculosis complex isolated in the Activity 2.1.1.	Plan																							RIT RCZC	NCCD		
	Actual																										
2.2.2.To evaluate the emergence of gene mutations related to drug resistance by performing the comprehensive resistance gene screening using a next-generation sequencer (e.g., MinION) on the strains with confirmed drug resistance (multidrug resistance), using the test method introduced in the Activity 1.5.2.	Plan																							RIT RCZC	NCCD		
	Actual																										

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-				
2-3. To develop a draft revision of the current guidelines or equivalent document(s) for the diagnosis of tuberculosis in human on the basis of the prevalence of *M. bovis* human infections as well as the results of epidemiological evaluations of drug-resistant *M tuberculosis* , with consultation from relevant authorities such as the Ministry of Health.	Plan																						RIT RCZC	MOH NCCD		
	Actual																										
2-4. To conduct specific consultations with the authorities concerned such as the Ministry of Health for the revision of the guidelines or equivalent document(s) on the basis of the epidemiological evidences.	Plan																						RIT RCZC	MOH NCCD		
	Actual																										
2-5. Epidemiological evaluation of the epidemics of *B. mallei* Infection in human																											
2.5.1. To collect the biological samples (sputum and/or throat swab) obtained from patients with human infectious pneumonitis for whom no causative agent has been identified in the NCCD, followed by transferring them to IVM.	Plan																						RIT FMV	NCCD IVM		
	Actual																										
2.5.2. To evaluate the presence of human cases of *B. mallei* infection in IVM by screening them with the gene detection method developed in Activity 1.2.	Plan																						RIT FMV	NCCD IVM		
	Actual																										
Output 3: The epidemics of tuberculosis and glanders as zoonotic diseases in livestock are evaluated using seroepidemiological and molecular epidemiological / seroepidemiological techniques, respectively.																											
3-1. Molecular-epidemiological evaluation of the epidemics of *M. bovis* Infection in livestock	Plan																										
	Actual																										
3.1.1. To isolate tuberculosis complex using the L-J mediua in IVM, from the tubercles-suspected granulomas samples collected from cattle and sheep at slaughterhouses and meat markets in the project target areas.	Plan																						RCZC	IVM	About 91 lung samples of slaughtered cattles were collected in September to October, 2020 and to performed bacteriology for those samples. One of *Mycobacteria* -like isolate was obtained when growth in L-J medium. And than to performed the Mycobacteria specific PCR .	
	Actual																										
3.1.2. To estimate the prevalence of *M. bovis* in the tuberculosis complex isolated from cattle and sheep by determining the presence of *M. bovis* in the colonies grown on L-J medium using the genetic detection method developed in the Activity 1.1.	Plan																						RCZC	IVM	We are trying to validate/determine the resulting Mycobacteria spp like isolates by the general PCR. But have not yet received an kits of the LAMP-PCR to determine for agents of BTB.	
	Actual																										
3.1.3. To investigate the endemic status of *M. bovis* infection including subclinical infection by performing the Interferon-Gamma Release Assay (IGRA) on herds in which *M. bovis* -detected cattle were kept.	Plan																						RCZC	IVM	We are unable to perform this analysis. Because, to purchase of this kind of diagnostic kit is currently ongoing.	
	Actual																										
3.1.4. To assess the transmission and distribution of *M. bovis* in animals (amongst cattle, between cattle and sheep, and amongst sheep) by performing the comprehensive gene screening using a next-generation sequencer (e.g., MinION) on the colonies grown on the L-J media for *M. bovis* as well as in consideration of the IGRA results of endemic status in herds.	Plan																						RCZC	IVM	We are unable to perform this analysis. Because, to purchase of this kind of diagnostic kits is currently ongoing.	
	Actual																										
3.1.5. To develop draft revision s of the current guideline s for the diagnosis of livestock infectious diseases, the program for the control of livestock infectious diseases and/or equivalent documents on the basis of the prevalence of *M. bovis* infections in livestock as well as the results of epidemiological evaluations of its	Plan																						RCZC	MOFALI GAVS		

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun				
infections in livestock as well as the results of epidemiological evaluations of its transmission and dissemination, with consultation from relevant authorities such as the Ministry of Food, Agriculture and Light Industry (MOFALI) and the General Authority for Veterinary Services (GAVS).	Actual																							RCZC	GAVS IVM		
3.1.6. To conduct specific consultations with the authorities concerned such as MOFALI and GAVS for the revision of the guidelines, programs and/or equivalent document(s) on the basis of the epidemiological evidences.	Plan																							RCZC	MOFALI GAVS IVM		
	Actual																										

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-				
3-2. To evaluate the *M. bovis* contamination status in milk, which are sold in markets such as milk stands, by testing them with the gene detection method developed in the Activity 1.1.	Plan																							RCZC	IVM	We are currently collecting samples of tissue from cattle in the slaughterhouses near UB. But, milk samples have not been collected yet. Because, main terms of milking seasons in the country is already done due to seasonally.	Sampling from slaughterhouses is should be stoping in end of November, 202. But continuies of collecting both type (milk and tisseu) of samples are to be perform/carry out on the June to October in next years under plan of project.
	Actual																										
3-3. Molecular-epidemiological and seroepidemiological evaluation of the epidemics of *B. mallei* infection in horses																											
3.3.1. To perform a seroepidemiological survey on *B. mallei* infection (history) by testing the sera obtained from horse herds in the project area with the conventional methods (complement-fixation and plate agglutination) in IVM.	Plan																							FVM	IVM	Serrology CFT ….	
	Actual																										
3.3.2. To evaluate the epidemics of *B. mallei* infection in Mongolia seroepidemiological, by testing the horse sera collected in the Activity 3.2.1 with the immunochromatography-based *B. mallei* -specific antibody detection method developed in the Activity 1.3.	Plan																							FVM	IVM		
	Actual																										
3.3.3. To analyse *B. mallei* infection in horses histopathologically and immunohistrogically by dissecting infected horses.	Plan																							FVM	IVM	over 10 horses find and killed …….	
	Actual																										
3.3.4. To assess the transmission and distribution of *B. mallei* in horses by performing the comprehensive gene screening using a next-generation sequencer on the isolated strains, which are obtained by culturing specimens of lesioned part of the infected horses.	Plan																							FVM	IVM		
	Actual																										
3.3.5. To newly-develop and/or develop draft revisions of the current guidelines for the diagnosis of *B. mallei* infections, the program for the control of glanders and/or equivalent documents on the basis of the prevalence of *B. mallei* infections in horses as well as the results of epidemiological evaluations of its transmission and dissemination, with consultation from relevant authorities such as MOFALI and GAVS.	Plan																							FVM	MOFALI GAVS IVM		
	Actual																										
3.3.6. To conduct specific consultations with the authorities concerned such as MOFALI and GAVS for the newly-development and/or revision of the guidelines, programs and/or equivalent document(s) on the basis of the epidemiological evidences.	Plan																							FVM	MOFALI GAVS IVM		
	Actual																										
Output 4: A platform for *One-Health* approach-based infectious disease control is functioning for the practical application of research outcomes including risk analyses of tuberculosis and glanders as zoonotic diseases.																											
4.1. To establish a platform, such as regular liaison and coordination meeting, regular technical working group, etc., in Mongolia for comprehensive evidence-based zoonotic disease control, consisting of Mongolian and Japanese as well as medical and veterinary research, educational and administrative institutions.	Plan																							RIT FVM RCZC	MOH NCCD MOFALI GAVS IVM MECSS		
	Actual																										
4.2. Risk assessment of *M. bovis* infection as a zoonotic disease																											
4.2.1. To determine a study design (e.g., the preparation of survey procedures, the unification of analytical methods and so on) in order to perform the risk assessment associated with *M. bovis* transmission between livestock and human	Plan																							RIT	NCCD		

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-	RCZC	IVM		
assessment associated with *M. bovis* transmission between livestock and human, through the discussions between medical and veterinary tuberculosis research groups.	Actual																								

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks		Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-				
4.2.2. To perform the risk assessment of *M. bovis* transmission between livestock and human as well as its pathogenicity by analysing the results of the epidemiological analyses of *M. bovis* infection in human and livestock obtained in the Output 2 and the Output 3 in an integrated manner.	Plan									■	■	■	■	■	■	■	■	■	■	■	■			RIT RCZC	NCCD IVM		
	Actual																										
4.2.3. To discuss practical measures for controlling the *M. bovis* epidemics in Mongolia (e.g. developing activities for the prevention of livestock-to-human transmission, reviewing/revising current surveillance systems, newly-developing and/or revising guidelines and/or programmes for the control of zoonotic tuberculosis) on the basis of the above-mentioned risk assessment results, with consultation from relevant authorities concerned of medical and veterinary services as well as zoonotic disease control.	Plan													■	■	■	■	■	■	■	■			RIT RCZC	MOH NCCD GAVS IVM		
	Actual																										
4.3. Risk assessment of *B. mallei i* nfection as a zoonotic disease																											
4.3.1. To determine a study design (e.g., the preparation of survey procedures, the unification of analytical methods and so on) in order to perform the risk assessment associated with *B. mallei* transmission between livestock and human, through the discussions between medical and veterinary glanders research groups.	Plan			■	■	■	■	■	■	■	■	■	■	■										FVM	NCCD IVM		
	Actual			■	■	■	■	■	■																		
4.3.2.To perform the risk assessment of *B. mallei* transmission between livestock and human as well as its pathogenicity by analysing the results of the epidemiological analyses of *B. mallei* infection in human and livestock obtained in the Output 2 and the Output 3 in an integrated manner.	Plan						■	■	■	■	■	■	■	■	■	■	■	■	■	■				FVM	NCCD IVM		
	Actual																										
4.3.3. To discuss practical measures for controlling the *B. mallei* epidemics in Mongolia (e.g. developing activities for the prevention of livestock-to-human transmission, reviewing/revising current surveillance systems, newly-developing and/or revising guidelines and/or programmes for the control of zoonotic glanders) on the basis of the above-mentioned risk assessment results, with consultation from relevant authorities concerned of medical and veterinary services as well as zoonotic disease control.	Plan																	■	■	■	■			FVM	MOH NCCD GAVS IVM		
	Actual																										
4.4. To conduct discussions with medical and/or veterinary authorities as well as other eligible stakeholders concerned of medical and veterinary services as well as zoonotic disease control with regard to practical application of preventive measures of its epidemics.	Plan																				■			RIT FVM RCZC	MOH NCCD GAVS IVM		
	Actual																										
4.5. To hold symposiums and/or joint seminars on project collaborative research at least once a year.	Plan			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			RIT FVM RCZC	NCCD IVM		
	Actual			■	■	■	■	■	■	■																	

Inputs	Year	2020				2021				2022				2023				2024				2025		Remarks	Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-			
Duration / Phasing	Plan																									
	Actual																									

Monitoring Plan	Year	2020				2021				2022				2023				2024				2025		Remarks	Issue	Solution
	Month	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-			
Monitoring																										
Joint Coordinating Committee	Plan				■				■				■				■				■					
	Actual				■				■																	
Project Technical Committee	Plan					■		■		■		■		■		■		■		■		■				
	Actual				■				■																	
Scientific Meeting	Plan				■				■				■				■				■					
	Actual			■	■		■	■	■																	
Set-up the Detailed Plan of Operation	Plan				■				■				■				■				■					
	Actual				■				■																	
Submission of Monitoring Sheet	Plan					■		■		■		■		■		■		■		■		■				
	Actual					■			■																	
Monitoring Mission from Japan	Plan													■								■				
	Actual																									
Post Monitoring	Plan																									
	Actual																									
Reports/Documents																										
Inception Report	Plan			■																						
	Actual																									
Progress Report	Plan					■		■		■		■		■		■		■		■		■				
	Actual					■		■																	TC meeting of project were performed twice in October, 2020 and August, 2021. During this meet, we presented of progress report of project.	
Project Completion Report	Plan																									
	Actual																									
Public Relations																										
Establishment and Operation of web Site	Plan				■																					
	Actual																									
International Conference	Plan													■								■				
	Actual																									

Abbreviations: Faculty of Veterinary Medicine, the Hokkaido University (FVM); General Authority for Veterinary Services (GAVS); Institute of Veterinary Medicine (IVM); Ministry of Education, Culture, Science & Sports (MECSS); Ministry of Food, Agriculture and Light Industry (MOFALI); Ministry of Health (MOH); National Center for Communicable Diseases (NCCD); Research center for Zoonosis Control, the Hokkaido University (RCZC); and Research Institute of Tuberculosis of the Japan Anti-Tuberculosis Association (RIT)
(*Institutions are shown in alphabetical order.*)