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Joint Evaluation Report on the Project for Strengthen Control of Vectorborne Diseases to Lessen the Impact of Climate Change in Mongolia
한국국제협력단
KOICA

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Joint Evaluation Report on the Project for Strengthen Control of Vectorborne Diseases to Lessen the Impact of Climate Change in Mongolia

2013. 12

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KOICA 한국국제협력단
WORLD FRIENDS KOREA

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The Korea International Cooperation Agency (KOICA) performs various types of evaluation in order to secure accountability and achieve better development results by learning.

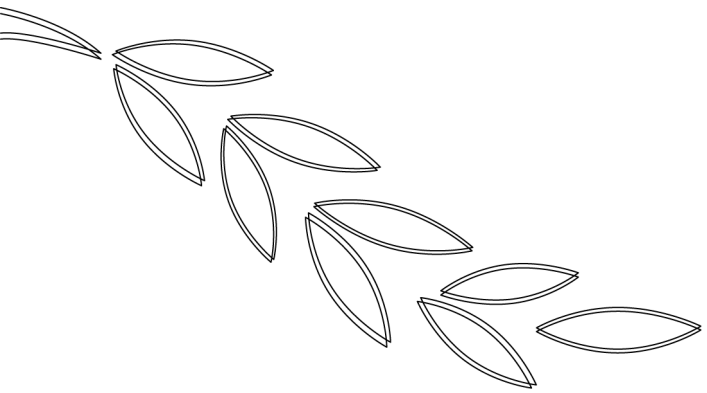
KOICA conducts evaluations within different phases of projects and programs, such as ex-ante evaluations, interim evaluations, end-of-project evaluations, and ex-post evaluations. Moreover, sector evaluations, country program evaluations, thematic evaluations, and modality evaluations are also performed.

In order to ensure the independence of evaluation contents and results, a large amount of evaluation work is carried out by external evaluators. Also, the Evaluation Office directly reports evaluation results to the President of KOICA.

KOICA has a feedback system under which planning and project operation departments take evaluation findings into account in programming and implementation. Evaluation reports are widely disseminated to staffs and management within KOICA, as well as to stakeholders both in Korea and partner countries. All evaluation reports published by KOICA are posted on the KOICA website. (www.koica.go.kr)

This evaluation study was entrusted to Yonsei Graduate School of Public Health by KOICA for the purpose of independent evaluation research. The views expressed in this report do not necessarily reflect KOICA's position.

Contents



I. Executive Summary

Chapter

I Executive Summary

Section ⅰ. Evaluation Findings

KOICA, a specialized Korean agency for international development, implemented a public health project to respond to climate change induced vector-borne diseases in Mongolia, Cambodia and Papua New Guinea for 18 months between 2011 and 2012. This evaluation project examined the vector-borne disease project implemented in Mongolia based on the standardized framework used by the OECD/DAC and a set of standards developed by the World Health Organization regarding vector-borne diseases. Yonsei University Industry Foundation, with public health expertise developed over the past 10 years, collaborated with subject matter experts to conduct this evaluation.

The Vector-borne Disease Project in Mongolia aimed to mitigate the risks of tick-borne diseases and plague (flea-born diseases) through implementation of the following activities: independent public health response capacity strengthening, awareness-raising among the Mongolian public health workforce, research capacity strengthening and health systems strengthening. The expected outputs were clearly and systematically defined from the onset of the project and the analysis indicated satisfactory achievements for all of them. Furthermore, this project helped create a window of opportunity for improving the surveillance system of infectious diseases in Mongolia.

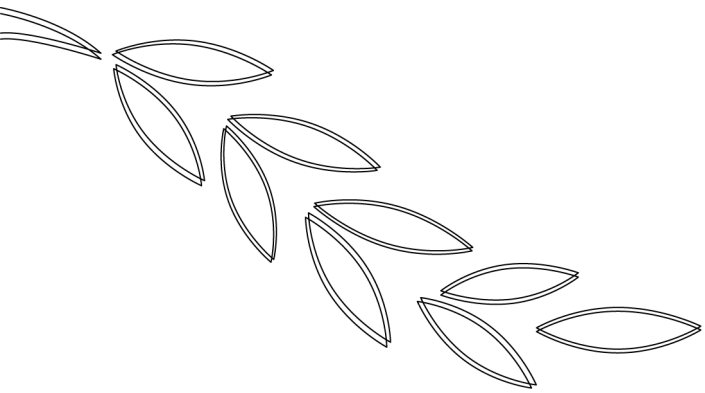
This project also satisfied all of the OECD/DAC evaluation criteria: relevance, efficiency, effectiveness, impact and sustainability. The

evaluation team particularly emphasized measuring the impact and sustainability of this project. Our findings suggest that this project had a positive impact not only raising community awareness and encouraging behavior change but also strengthening the response capacity of the Mongolian Ministry of Health. With regards to sustainability, the evaluation team concluded that 18 months of project implementation was not sufficient to produce sustainable outcomes immediately. Prolonging the length of this project or implementing a follow-up project will ensure achievements of short-term outcomes are translated into longer-term sustainable changes.

Section ii. Lessons Learned and Recommendations

This evaluation contributes to the improvement of evaluation frameworks used in the context of international development projects and serves as a model for future multilateral cooperation between KOICA and international entities.

The evaluation team offers practical recommendations for both immediate follow-up of this project and long-term strategies for sustained impact. We recommend that vector-borne disease training of the medical workforce continues and a procedure for maintenance of procured equipment is established for immediate follow-up. We also highly recommend prolonging the duration of this project, expanding project reach to other provinces, centralizing a fragmented training system and strengthening the management capacity of infectious diseases for sustained impact.



Ⅱ. Evaluation Overview

Chapter

Ⅱ Evaluation Overview

Section ⅰ. Evaluation Background and Purpose

1. Evaluation Background

1) The Republic of Korea became a member of OECD/DAC (Organization for Economic Co-operation and Development/Development Assistance Committee) in September of 2009. Korea International Cooperation Agency (KOICA) has assumed greater responsibility as a result, increasing in both size and status. The importance of evaluation has also been recognized in the rapid growth of Official Development Assistance (ODA).

Public Health sector is one of KOICA's major investments as it comprised 16.1% (2nd most) of KOICA's overall project funding which was approximately 501,340,000,000 KRW in 2012.

2) East Asia Climate Partnership (EACP), under the supervision of KOICA, initiated the climate change induced vector-borne disease project. The project aimed to partner with developing countries to strengthen their capacity to respond to climate change and to create a momentum for sustainable development. For projects pertaining to the field of public health, the World Health Organization (WHO) provided technical support. Through this project, Korea was able to develop expertise in climate change and public health and it will continue to disseminate its green growth strategy to the international community.

* The original title of the project includes the term "mosquito-borne diseases." However, this report focuses on tick-borne diseases and flea-borne diseases as they were more prevalent in Mongolia than mosquito-borne diseases.

2. Evaluation Purpose

1) The purpose of this evaluation is to:

a. Assess whether project activities were implemented as planned

b. Measure short-term achievements of output goals

c. Identify areas for improvement in its current state

d. Recommend action plans to ensure sustainability

2) Evaluation Scope

This evaluation assesses short-term outcomes of the project with the emphasis of measuring the degree to which original project goals and objectives were achieved in Mongolia. In addition, it analyzes the project's performance factors and offers practical directions for decision-making with regards to climate change. This evaluation will serve as a precedent for future joint collaborations between KOICA and the WHO.

Section ii. Composition of Evaluation Team

<Table 1> Composition of Evaluation Team

Participation Status	Expertise	Name	Project Roles	Assignments
Researchers with full appointment	Principal Investigator	Myung Ken Lee	Principal Investigator	Overall Project Management
	Climate Change, Vector-borne Diseases	Tai Soon Yong	Expert in Climate Change and Vector-borne Diseases	Evaluation of Climate Change and Vector-borne Diseases Components

Participation Status	Expertise	Name	Project Roles	Assignments
	Evaluation, Assessment	Heejin Kim	Evaluation Expert	Planning for Evaluation Design and Tools
	Environmental Health, Infectious Epidemiology	Kyujin Chang	Environmental Health, Infectious Epidemiology Expert	Evaluation of Environmental, Epidemiological Components
	Researcher	Sohyun Kim	Researcher	Evaluation Support, Drafting Evaluation Report, Administrative duties, etc.
	Researcher	Eunsoo Timothy Kim	Researcher	
Researchers with partial appointment		Ariuntuya Ochirpureva	WHO-Mongolia Technical Officer	
		Baatar Undraa	Former Director of Mongolian NCCD	

Section iii. Evaluation Period

1. Implementation Period

July - Initial Assessment and Evaluation Design

August - Inception Meeting and Planning

September - First Field Assessment, Analysis of Assessment Findings

October - Second Field Assessment, Analysis of Assessment Findings, Mid-term Reporting

November - Completion of the Final Report Initial Draft, Final Reporting, Evaluation of the Final Report

December - Final Report Revision and Submission

<Table 2. Evaluation Timetable>

Tasks	July		August					September				October				November				December	
◦ Initial Assessment and Evaluation Design																					
◦ Inception Meeting																					
◦ Planning for Evaluation																					
◦ Field Assessment																					
◦ Analysis of Evaluation Findings																					
◦ Mid-term Reporting																					
◦ Initial Draft of Final Report																					
◦ Final Reporting																					
◦ Evaluation of Final Report																					
◦ Revision of Final Report																					
◦ Submission of Final Report (Korean)																					
◦ Submission of Final Report (English)																					

* Each box represents one week's time.

2. Evaluation Standards and Methods

1) This evaluation primarily utilizes the OECD/DAC standards and uses the Integrated Vector Management (IVM) indicators developed by the WHO as a reference. The outcome indicators suggested for vector management projects were selected as evaluation questions.

2) Evaluation tools were developed after the establishment of appropriate indicators. A mixed-methods approach was used to gather both quantitative and qualitative data. Quantitative data was collected through statistical reports, official documents and surveys. Qualitative data was collected through interviews and case studies.

3. Domestic and Field Assessment

1) Domestic Assessment

Domestic Assessment was conducted through literature review of official reports and publications from KOICA and the WHO, climate change and vector-borne diseases project reports and evaluation reports of past vector-borne disease projects.

2) Field Assessment

The field assessment portion of the evaluation was conducted over two separate visits to Mongolia. During the first term, the evaluation team visited Selenge province and during the second term, the team visited Gobi-Altai province.

The following assessment schedule was arranged with the support of KOICA Mongolia Office, WHO Mongolia Office and KOICA Headquarters.

<Table 3> First Field Assessment Team

Responsibilities	Affiliation	Name
Development of Evaluation Plan and Tools, Assessment Report Writing	Yonsei Graduate School of Public Health / Professor	Myung Ken Lee
Analysis of Mongolia's Current Status regarding Vector-borne Diseases, Development of Evaluation Plan and Tools, Assessment Report Writing	Yonsei University College of Medicine / Professor	Tai Soon Yong
Supporting Project Operations and Research Activities, Assisted in Developing Evaluation Tools, Assessment Report Writing	Yonsei Graduate School of Public Health / Researcher	Eunsoo Timothy Kim

<Table 4>. First Field Assessment Schedule

Dates	Daily Activities	Location	Involved Researcher
Day 1 (9/9, Mon)	• Arrived to Ulaanbaatar, Mongolia • Discussed roles and responsibilities of each team member	Ulaanbaatar	Myung Ken Lee, Tai Soon Yong, Eunsoo Timothy Kim
Day 2 (9/10, Tues)	• Visit KOICA Mongolia Office • Interview national stakeholders at the Ministry of Health • Leave for Selenge Province	Ulaanbaatar	Myung Ken Lee, Tai Soon Yong, Eunsoo Timothy Kim
Day 3 (9/11, Wed)	• Interview the Director at Center for Zoonotic Diseases, Selenge Branch • Interview medical staff at Khuder soum hospital, Selenge	Selenge	Tai Soon Yong, Eunsoo Timothy Kim
	• Continue interviewing national stakeholders in Ulaanbaatar	Ulaanbaatar	Myung Ken Lee
Day 4 (9/12, Thurs)	• Interview medical staff at Altanbulag soum hospital, Selenge • Leave for Ulaanbaatar	Selenge	Tai Soon Yong, Eunsoo Timothy Kim
Day 5 (9/13, Fri)	• Visit National Center for Zoonotic Diseases • Leave for South Korea	Ulaanbaatar	Tai Soon Yong, Eunsoo Timothy Kim

<Table 5> Second Field Assessment Team

Responsibilities	Affiliation	Name
Development of Evaluation Plan and Tools, Assessment Report Writing	Yonsei Graduate School of Public Health/ Professor	Myung Ken Lee
Analysis of Mongolia's Current Status regarding Vector-borne Diseases, Development of Evaluation Plan and Tools, Assessment Report Writing	Yonsei University College of Medicine / Professor	Tai Soon Yong
Development of Evaluation Plan and Tools, Assessment Report Writing	Yonsei Graduate School of Public Health / Professor	Heejin Kim
Evaluation of Environmental, Epidemiological Components, Development of Evaluation Plan and Tools, Assessment Report Writing	Ansan Industrial Hospital / Medical Doctor and Occupational Health Specialist, Former Epidemiologist at the Korea Center for Disease Control and Prevention	Kyujin Chang
Supporting Project Operations and Research Activities, Assisted in Developing Evaluation Tools, Assessment Report Writing	Yonsei Graduate School of Public Health / Researcher	Eunsoo Timothy Kim
Supporting Project Operations and Research Activities, Assisted in Developing Evaluation Tools, Assessment Report Writing	Yonsei Graduate School of Public Health / Researcher	Sohyun Kim

<Table 6> Second Field Assessment Schedule

Dates	Daily Activities	Location	Involved Researcher
Day 1 (10/12, Sat)	• Leave for Mongolia - Eunsoo Timothy Kim, Sohyun Kim (Arrival time 22:55)	Ulaanbaatar	Eunsoo Timothy Kim, Sohyun Kim
Day 2 (10/13, Sun)	• Final check-up of local assessment schedule (Eunsoo Timothy Kim, Sohyun Kim) • Leave for Mongolia - Kyujin Chang (Arrival time 22:55)	Ulaanbaatar	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang

Dates	Daily Activities	Location	Involved Researcher
Day 3 (10/14, Mon)	• Second field assessment team (Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang) leaves for Gobi-Altai province • Interview with Researchers, Administrators and the Director at Gobi-Altai Center for Zoonotic Diseases • Leave for Tonkhil Soum (6 hours by car) • Discuss assessment findings • Draft daily assessment report	Ulaanbaatar Gobi-Altai	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang
Day 4 (10/15, Tues)	• Overview Evaluation Plan • Interview medical staff at Tonkhil Soum Health Center • Interview local residents at Tonkhil Soum • Leave for Gobi-Altai (6 hours by car) • Discuss assessment findings • Draft daily assessment report	Gobi-Altai	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang
Day 5 (10/16, Wed)	• Leave for Ulaanbaatar • Analyze preliminary data collected from Gobi-Altai • Meet with WHO to discuss preliminary findings • Draft daily assessment report • Principal Investigator (Myung Ken Lee) and Vector-borne disease expert (Tai Soon Yong) leave for Mongolia and join the field assessment (Arrival time 22:55)	Gobi-Altai Ulaanbaatar	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang, Myung Ken Lee, Tai Soon Yong
Day 6 (10/17, Thurs)	• Visit KOICA Mongolia Office • Discuss plans for distributing community awareness surveys with WHO • Prepare International Workshop with National Stakeholders • Draft daily assessment report • Evaluation expert (Heejin Kim) leaves for Mongolia and joins the field assessment team (Arrival time 22:55)	Ulaanbaatar	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang, Myung Ken Lee, Tai Soon Yong, Heejin Kim
Day 7 (10/18, Fri)	• Final preparation for International Workshop • Present evaluation findings at the International Workshop hosted at the Ministry of Health • Confirm evaluation findings and discuss opportunities for further collaboration • Return to South Korea	Ulaanbaatar	Eunsoo Timothy Kim, Sohyun Kim, Kyujin Chang, Myung Ken Lee, Tai Soon Yong, Heejin Kim

4. Community Awareness Survey

Community awareness was identified as an expected output from the onset of the project and is a major indicator for measuring the project's success. During project implementation between 2011 and 2012, awareness surveys were conducted three times. In October of 2013, the evaluation team decided to conduct a cross-sectional study administering the same awareness survey in the community as before to observe whether there are changes in the awareness trend.

The WHO which originally conducted the awareness survey between 2011 and 2012 administered the surveys again in 2013 by the request of the evaluation team. Surveys were distributed to 200 community residents which is a representative sample size that is approximately 10% of the entire community population. Because the aim of this study was to observe the trend, identifying and re-surveying previous respondents as in a cohort study were not deemed necessary, rather it was considered inefficient.

Ⅲ. Project Background

Chapter

Ⅲ Project Background

Section i. Project Rationale

The Republic of Korea initiated the East Asia Climate Partnership in 2008 to mitigate the increasing risk that climate change is imposing on sustainable economic activity. This partnership established regional strategies to reduce the burden of climate change in the form of multilateral projects and to foster international cooperation.

Due to the body of undeniable evidence pointing to the negative effects of climate change, WHO was asked to submit a proposal for a project aimed to strengthen control and management of vectorborne diseases. A total of three countries, Cambodia, Mongolia and Papua New Guinea, were selected based on their vectorborne disease burden.

Strengthen control of vectorborne diseases to lessen the impact of climate change in the Western Pacific Region with focus on Cambodia, Mongolia and Papua New Guinea, the official title of the project, was implemented as a demonstration of climate change adaptation targeting priority areas of relatively high vectorborne disease burden.

This project served a wide spectrum of beneficiaries ranging from government agencies at the national level to the community residents who are most affected by the increased burden of vectorborne diseases due to climate change.

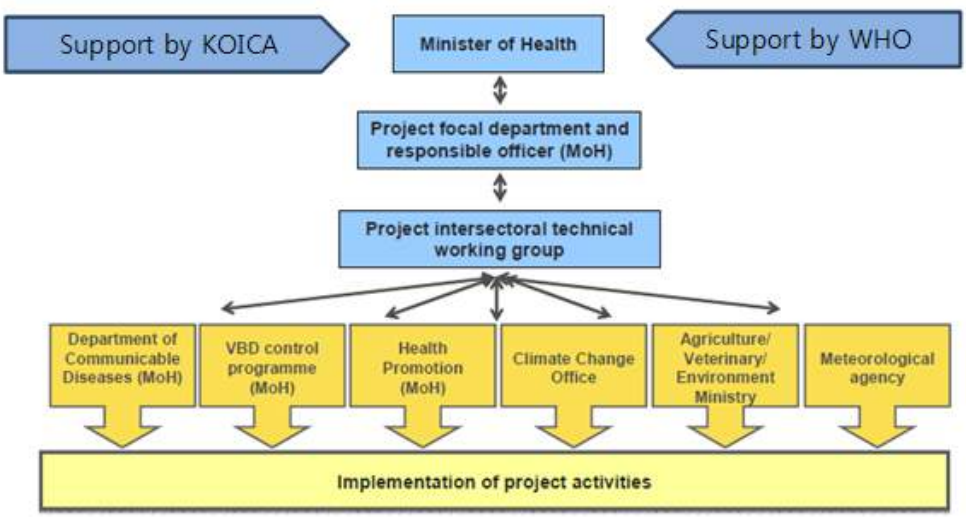
Section ii. Project Components

<Table 7> Project Components

Name of Organization	World Health Organization
Project Name	Strengthening control of vectorborne diseases to lessen the impact of climate change in the Western Pacific Region with focus on Cambodia, Mongolia, and Papua New Guinea
Project Period/ Funding	2011-2012 (18 months)/1,200,000 US dollars
Target Countries	Cambodia, Mongolia, Papua New Guinea
Objective	To build VBD management capacity at country level and at regional level to minimize the consequences of VBDs
Target Population	Community residents in Cambodia, Mongolia and Papua New Guinea with increased risk of contracting vectorborne diseases due to the impact of climate change.
Project Components	The project was designed with six outputs, the achievement of which contributed to achievement of the objective. The outputs were: • Increased awareness and involvement of communities and stakeholders within and beyond the health sector in actions to minimize VBD consequences due to climate change • Strengthened surveillance for vector borne infections and climate change and capacity for rapid response to VBD outbreaks • Strengthened capacity for vector control • Strengthened capacity for effective diagnosis and treatment of VBDs • Strategic information on knowledge gaps generated and utilized to better respond to climate change-induced VBDs • Strengthened country programs and effective and efficient project management
Expected Outcomes	• VBD management capacity building and reduction of VBD incidence rates in target countries • Dissemination of Korea's Green Growth strategy in the international community • Korea's enhanced response capacity to manage climate change issues • Knowledge-sharing and networking between the World Health Organization and Korea's public health workforce

Section iii. Implementation Structure

<Figure 1> Implementation Structure



Section iv. Project Development Matrix (PDM)

Outputs	Indicators	Targets	Cambodia	Mongolia	Papua New Guinea
1. Increased awareness and involvement of communities and stakeholders within and beyond the health sector in actions to minimize VBD consequences due to CC	Proportion of household heads and key stakeholders (in targets areas) who remember key messages on VBDs and CC	Baseline: <10% Target Y1 >30%	BL:20% 18months: 69%	BL: 73.% 18months:90.5%	No Surveys possible
2. Strengthened surveillance for vector borne infections and CC and capacity for rapid response to VBD outbreaks	Proportion of districts/communes in target areas with timely data on VBD cases	Baseline: <10% Target Y1 >30%	18months: Not assessed	18months: 100%(2soums)	18months: 100%(1district)
3. Strengthened capacity for vector control	Number/proportion of districts with functional early warning systems	Baseline:0 Target Y1:50%	Baseline:0 18months: 4provinces	Baseline:0 18months: 4districts(2provinces)	Baseline:0 18months: 1 district
	Proportion of target population covered by vector control for prevention of VBDs	Baseline: <50% Target Y1: 60%	18months: Not assessed	18months: 85-90%	18months: Pending ourbreaks

Outputs	Indicators	Targets	Cambodia	Mongolia	Papua New Guinea
4. Strengthened capacity for effective diagnosis and treatment of VBDs	Proportion of VBD cases in public health facilities in targeted areas that were diagnosed and treated according to guidelines	Baseline: 40% Target Y1: 60%	18months: not assessed	Baseline:57cases 18months:92cases	18months:4cases diagnosed(see below)
5. Strategic information on knowledge gaps generated and utilized to better respond to CC-induces VBDs	Number of technical reports of studies on the effect of CC on VBD in the countries (published research findings at a later date)	Baseline: 0 Target Y1: 10	18months:3	18months:6	18months:2
6. Strengthened country programmes and effective and efficient project management	Project activities carried out adequately and on time	Baseline: 0 Target Y1: 80%	Baseline:0 18months:78%	Baseline:0 18months:83%	Baseline:0 18months: 59%

* PDM is from the Final Project Report published by the WHO

Section v. Mongolia Project Overview

1. Project Objective and Outputs

The objective of the project was to build capacity at country level and at regional level to minimize the consequences of VBDs for populations in areas that are prone to climate change. It is expected to contribute towards strengthened health systems and to protect human health from current and projected risks due to climate change. The project was designed with six outputs, the achievement of which contributed to achievement of the objective.

<Table 8> Objectives, Outputs and Indicators

	Objective and Outputs	Indicators
Project Objective		
	To build capacity in countries and at regional level to minimize consequences of vector-borne diseases (VBDs) to populations in areas that are prone to climate change	Proportion of vector-borne disease (VBD) outbreaks which occur in target areas which are detected early and dealt with in an adequate and timely manner
		Proportion of health staff and population in target areas who are aware of the possible consequences of climate change (CC) on vector-borne disease (VBD) and how to prepare and respond accordingly
Project Outputs		
1	Increased awareness and involvement of communities and stakeholders within and beyond the health sector in actions to minimize vector-borne disease (VBD) consequences due to climate change (CC)	Proportion of household heads and key stakeholders (in target areas) who remember key messages on vector-borne diseases (VBDs) and climate change (CC)
2	Strengthened surveillance for vectorborne infections and climate change (CC) and capacity for rapid response to vector-borne disease (VBD) outbreaks	• Proportion of districts/communities in target areas with timely data on vector-borne disease (VBD) cases • Number/proportion of districts with functional early warning systems

	Objective and Outputs	Indicators
3	Strengthened capacity for vector control	Proportion of target population covered by vector control for prevention of vector-borne diseases (VBDs)
4	Strengthened capacity for effective diagnosis and treatment of vector-borne diseases (VBDs)	Proportion of vector-borne disease (VBD) cases in public health facilities in targeted areas that were diagnosed and treated according to guidelines
5	Strategic information on knowledge gaps generated and utilized to better respond to climate change (CC)-induced vector-borne diseases (VBDs)	Number of technical reports of studies on the effect of climate change (CC) on vector-borne disease (VBD) in the countries (published research findings at a later date)
6	Strengthened country programs and effective and efficient project management	Project activities carried out adequately and on time

2. Analysis of Project Outputs

1) Output 1: Increased awareness and involvement

a. Activities

Two posters (one each for TBDs and plague) and two leaflets (one each for TBDs and plague) were designed and distributed. A total of 6000 leaflets, 3000 posters and 2 large billboards were distributed in 21 provinces. In addition, electronic forms of leaflets were sent to 60,000 registered email addresses as a low-cost and novel way of reaching the population. Furthermore, a television cartoon was developed targeting children in TBD endemic areas. This cartoon was shown 45 times. Finally, community awareness-raising activities were conducted, targeting medical workers, local government staff, teachers, pupils and community members. A total of 1325 people attended these sessions.

b. Results

- Proportion of household heads and key stakeholders (in target areas) who remember key messages on vector-borne diseases and climate change was measured and compared by surveys of target groups prior to commencement of the project and at the end of the project
- The post-intervention surveys revealed very high levels of understanding of protective behaviors which included prompt reporting to health facilities, using appropriate protective clothing or eliminating vector breeding sites. At baseline, 73% of surveyed household heads remembered key messages on vector-borne diseases and climate change while after 18 months, 90.5% of surveyed household heads indicated that they remembered these messages.

2) Output 2: Strengthened surveillance and response capacity

Surveillance capacity was strengthened in order to respond promptly and appropriately to potential outbreaks of vector-borne diseases.

a-1. Activities - Epidemiological Surveillance

Epidemiological surveillance was operated by two distinct mechanisms: one hospital-based and one community-based.

① Hospital-based surveillance

- Activities: patients reporting to local health facilities and satisfying a case definition and exposure to VBDs were included and determined 'confirmed' or 'suspected', depending on whether the cases were laboratory confirmed. Case definition was based on the clinical symptoms (fever over 38 degrees Celcius, vomiting, and muscle pain after tick bite). Cases were confirmed by IgM and IgG.

- Results: over the study period, there were 86 suspected and 29 confirmed cases (incidence: 4/1000 population). Tick borne borreliosis, tick borne encephalitis and tick borne rickettsiosis were the most common VBDs and most cases occurred in June and July.

② Community-based surveillance

- Activities: surveillance was conducted in two soums (districts) of Selenge province, whereby every 5thresident of the province (total population of both soums: 7000) was selected via a sampling frame. Demographic, behavioral and reported clinical histories were collected in addition to laboratory investigations to ascertain VBD infection history.
- Results: 44.3% of the surveyed population (n=657) reported having been bitten by ticks in the past and 32.5% reported symptoms. 20.7% had immune response to either TBE or TBB, indicating the burden of these diseases may be higher than previously believed.

a-2. Activities - Vector Surveys

Vector surveys were conducted in two sites, Selenge province and Gobi-altai province, to monitor the distribution of TBD and plague vectors.

① Tick Surveillance in Selenge province

- Activities: tick surveillance was conducted in three biotypes of a high-risk area of Mongolia: forest, river valley or steppe. Field surveys were conducted 3 times per day in periodic cycles from April to October within 1000 meters of terrain over which tick flagging was also performed. Microclimate was concurrently determined through on-site measurements.
- Results: 1,551 ticks were collected in total and over 90% of which were

of Ixodus persulcatus species. More ticks were recovered in forest and river valley biotype areas than in 'steppe' areas. In addition, tick distribution was seasonal; between April and June, they were abundant but the populations declined sharply thereafter. Modest relationships with climatic determinants were observed but these were not statistically significant.

② Plague vectors and hosts

- Activities: two periods of surveys were conducted for 20 days each in late May/early June, and August, respectively. Teams from the meteorological sector accompanied vector surveys to concurrently measure soil and air temperature and other parameters
- Results: the most common rodents captured were long-tailed squirrels and Siberian marmots. Flea indexes were highest from abandoned marmot burrows and non-statistically significant relationships between rodent activity and infestation with fleas and climatic factors were observed

b. Results

- Routine surveillance reports were collected from districts/communes in target areas to ensure data on VBD cases were updated timely and appropriately. After the project completed in 18 months, two soums (districts) demonstrated 100% collection rate
- Number/proportion of districts with functional early warning systems was also examined through interviews with project staff and review of reports. Upon project completion in 18 months, 4 districts in 2 provinces had functional early warning systems
- Overall, surveillance systems in Mongolia were strengthened in target districts through training and provision of essential equipment and at the

end of the project, case data were routinely available

3) Output 3: Strengthened capacity for vector control

Vector control interventions are not used in Mongolia but awareness-raising activities were utilized in community settings.

a. Activities

Awareness-raising activities allowed community residents to protect themselves from the bites of vectors and taught them how to apply correct methods for removing vectors that had already bitten.

b. Results

- Proportion of target population covered by vector control for prevention of VBDs was assessed through reports of behavioral change of householders at the end of the project. Prior to the implementation of this project, no form of vector control existed. However, after 18 months of implementation, 85% to 90% of the surveyed population reported that there was behavioral change in their households.

4) Output 4: Diagnosis and treatment

a. Activities

Medical workers from high-risk areas were trained in diagnosis of symptoms and appropriate treatment of VBDs. In addition, diagnostic kits and other laboratory supplies were procured to enable diagnosis of TBE, Borrelia (Lyme disease); Crimean Congo fever; Japanese encephalitis; West Nile virus; ehrlichiosis; anaplasmosis; rickettsia; Yersinia pestis (plague) and to enhance diagnostic capacity at the national and sub-national levels.

b. Results

- A total of 45 staff received training and reagents for more than 10,000 diagnoses were procured
- According to hospital records from project sites, VBD cases in public health facilities in targeted areas were diagnosed and treated according to guideline. Specifically, there were increases in case reporting and treatment following initiation of the project, resulting in an additional 35 cases being treated (from 57 cases at baseline to 92 cases after 18 months)

5) Output 5: Strategic information and research

Given the time frame of the project, insufficient for longitudinal studies, research activities were largely confined to determining baselines or retrospective studies. However, considering that there were no research activities with regards to CC on VBD prior to the project, recent research activities and accomplishments regarding CC on VBD carry significant meaning.

a. Activities

Each technical working group was asked to submit research protocols which were reviewed by the groups and by WHO and technical partners for technical soundness, feasibility, appropriateness and budget.

b. Results

- Research studies were completed, a strong working relationship between research partners was established and research priorities were identified
- After 18 months, there were 6 completed research studies on the effect of CC on VBD. These research findings were published at a later date

6) Output 6: Country programs and project management

a. Activities

Capacity-building training sessions were conducted to develop new skills including those of statistical methods, incorporating climatic and epidemiological data and survey techniques. In addition, procurement lists were developed for each country and technically reviewed in the context of submitted proposals before proceeding with procurement according to WHO guidelines

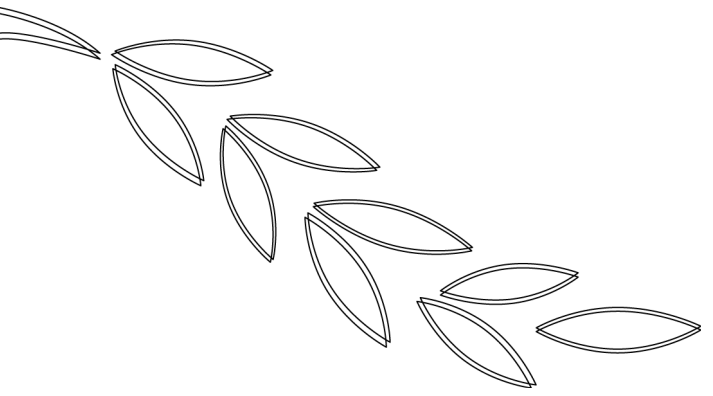
b. Results

- A total of seven training sessions were conducted. Two of which took place in Mongolia. Topics that were covered in the training sessions include vector surveillance skills, statistics, data handling and clinical training
- The total value of procurements was $211,000. Procurements include laboratory equipment, diagnostic kits, etc. and were determined based on the proposal submitted by the recipient country.
- Activities proposed in the work plan were compared with implemented activities to ensure all proposed activities were carried out adequately and on time. 36 activities were planned and 30 of them are judged to have been carried out on time and adequately (83% completion after 18 months)

7) Attainment of the overall project objective

The project had one overarching objective to which each output contributed. The overall project objective was to build capacity in countries and at regional level to minimize consequences of VBDs to populations in areas that are prone to CC

- Proportion of VBD outbreaks in target areas which are detected early and dealt with in an adequate and timely manner was used as an indicator to measure the attainment of the overall project objective. 2 tick-borne encephalitis outbreaks were detected after a thorough review of health information records and outbreak reports, yielding a 100% detection rate.
- In addition, health staff and the population who reside in target areas were surveyed in order to measure their level of awareness regarding possible consequences of CC on VBD and if they are able to prepare and respond accordingly. 90.5% of the surveyed population was aware of possible consequences associated with CC on VBD. Similarly, all health staff were trained and therefore were aware of the climate change and vector-borne disease issue



Ⅳ. Methodology

Section i. Evaluation Frameworks
Section ii. Unique Qualities of this Evaluation

Chapter

Ⅳ Methodology

Section i. Evaluation Frameworks

1. Evaluation Standards

Five evaluation criteria set forth by the OECD/DAC were used to evaluate the project: relevance, efficiency, effectiveness, impact and sustainability. Indicators for Integrated Vector Management published by the WHO were also referenced.

1) OECD/DAC 5 Evaluation Criteria

a. Relevance measures the degree to which the objectives of the implemented project are in accordance with the target country's needs, policies and priorities. This is an indicator for the project's compatibility with the target country's existing resources and capacity.

b. Efficiency measures the degree to which the project's desired outcomes were achieved with the least costly economic inputs possible. This indicates how well the project managed its budget and allocated its resources to implementing its objectives.

c. Effectiveness measures the degree to which project objectives were attained. This relates to the project's actual outputs as a result of implemented activities. This is often a direct indicator for whether or not the project itself was successfully implemented.

d. Impact measures both the positive and negative results produced as a result of the project whether they were direct or indirect, intended or

unintended. Impact usually cannot be seen immediately upon project completion. This is an indicator for whether the project's actual outputs were translated into longer term changes in target areas.

e. Sustainability measures whether activities implemented and positive impact seen during the project are being continued after the project ceased to be funded. This is practically an indicator for assessing the target country's willingness in continuing and expanding project's long-term goals and objectives.

<Table 9> Evaluation Matrix by OECD/DAC Standards

Criteria	Questions	Indicators	Sources	Methods
1) Relevance				
Policy, Strategic Relevance	Is it relevant to Korea's country partnership strategies (CPS)?	Degree of accordance with Korea's CPS	Literature related to CPS	Qualitative Data Analysis
	Is it relevant to the recipient country's development strategy?	Degree of accordance with the recipient country's development strategy	Interviews with Mongolian national stakeholders, Mongolian development strategy	Quantitative, Qualitative Data Analysis
	Is it relevant to the recipient country's public health policies?	Degree of accordance with the recipient country's public health policies	Interviews and literature reviews of the country's public health policies	
	Is the project timely and relevant considering Mongolia's current state of being?	Timeliness of the project with regards to the recipient country's current state of being	Interviews with stakeholders, needs assessment report, statistical data, surveys	Quantitative, Qualitative Data Analysis
	Does this project contribute to solving the most pressing problems the recipient country is facing?	What were the problems? How much does this project contribute to solving such problems?		

Criteria	Questions	Indicators	Sources	Methods
	Was the target population appropriately selected?	Proper definition of beneficiaries, the proportion of project beneficiaries among the entire local population	Interviews with stakeholders, statistical data	Qualitative Data Analysis, Numerical Computation of Beneficiaries
	Does this project contribute to the achievement of MDGs?	Degree of MDGs achievement (using a 5-point scale)	MDGs, interviews with stakeholders, literature review	Quantitative, Qualitative Data Analysis
	Does the project's implementation plan complement the existing development strategies of partnering ODA countries? Does it overlap?	presence of a similar project in the target area	Interview with stakeholders, literature review, observations	Qualitative Data Analysis
Relevance of Project Plan	Is the project plan consistent and logically flawless?	Presence of a logical framework	Analysis of project plan	Qualitative Data Analysis
	Is the project objective specifically stated?	Is the project objective measurable and quantifiable?	Project plan, Project Development Matrix (PDM)	Qualitative Data Analysis
	Was there an appropriate effort to reflect the opinions of the recipient country in project planning?	Presence of an appropriate procedure to incorporate the opinions of the recipient country	Analysis of project plan, literature review, interviews	Qualitative Data Analysis
	Was the project length and budget appropriate to achieve expected outcomes?	Appropriateness of project length, budget and scope	Analysis of project plan, literature review, interviews	Qualitative Data Analysis

Criteria	Questions	Indicators	Sources	Methods
Consideration of Cultural Background	Was the project objective, methods and startegies established considering the cultural backgrounds of the target population?	The degree to which the project considered the cultural backgrounds in the target area	Interviews with stakeholders, literature review, observations	Qualitative Data Analysis
2) Efficiency				
Cost-efficiency with available resources	Was the project implemented within the proposed budget and on time?	Appropriate use of resources within the budget and timeliness of project activities	Analysis of project report	Quantitative and Qualitative Data Analysis
	Was there an efficient channel of negotiation and communication among stakeholders?	Prsence of an efficient channel of communication among stakeholders	Analysis of project report	Qualitative Data Analysis
	Was the budget, scheduling and human resources appropriately managed by the Project Management Consultancy (PMC)?	Appropriate management of budget, scheduling and human resources	Analysis of project report	Quantitative and Qualitative Data Analysis
	What were some challenges that hindered project operations?	Challenges that hindered efficient project operations	Interviews with stakeholders, literature review	Qualitative Data Analysis
Technical Efficiency	Did the project employ optimal technology that is compatible with that of the recipient country?	Usage of optimal and compatible technology	Interviews with stakeholders, literature review	Qualitative Data Analysis

Criteria	Questions	Indicators	Sources	Methods
3)Effectiveness, 4)Impact				
Effectiveness of the Project	Was the project objective achieved?	Degree of achievement of PDM objectives	PDM, Statistical data from the recipient country	Quantitative Data Analysis
	What were the actual project outputs compared to the expected outputs?	Proportion of expected outputs achieved	Project plan, Final project report	Numerical Computation
	Are the facilities and procurements being utilized?	Utilization rate	Surveys related to the use of procurements	Numerical Computation
	Does the user of procurements know how to repair them in case they malfunction?	The proportion of procurements that the user knows how to repair	Surveys related to the use of procurements	Numerical Computation
	Did the capacity-building program make technical support readily accessible to its program participants?	Proportion of capacity-building program participants who are now working in a relevant field	Interviews with stakeholders, Data from the recipient country	Numerical Computation
		Satisfaction of capacity-building program participants	Final project report, interviews with stakeholders	Qualitative Data Analysis
Effectiveness of Project Management	Was risk management appropriately carried out when there was an unexpected risk factor?	Case studies of risk management	Interview with stakeholders, literature review	Qualitative Data Analysis
Impact on the Project Beneficiaries	What direct/indirect changes occurred among the beneficiaries?	Direct changes, indirect changes	Interviews with stakeholders, literature review	Qualitative Data Analysis

Criteria	Questions	Indicators	Sources	Methods
	What intended/unintended consequences occurred among the beneficiaries?	Intended consequences, unintended consequences	Interviews with stakeholders, literature review	
	What positive/negative changes occurred among the beneficiaries?	Positive changes, negative changes	Interviews with stakeholders, literature review	
Successes and Failures with Achieving the Project Objectives	What are the factors that contribute to achieving the project objectives and implementing its activities effectively?	Contributing factors to success	Interviews with stakeholders, literature review	Qualitative Data Analysis
	What are the reasons for failing to achieve the project objective and implementing its activities ineffectively?	Reasons for lack of achievement	Interviews with stakeholders, literature review	
Provision and Utilization of Public Health Medical Service	To what degree does the relevant agency perform epidemiological surveillance and research activities?	surveillance results, research accomplishments	Monthly and annual statistical reports, interviews with relevant stakeholders, observations and surveys	Quantitative and Qualitative Data Analysis
5) Spill-over Effects & Sustainability				
Positive Spill-over Effects	Can long-term project obectives be achieved?	The degree to which long-term objectives are achieved in 5 to 10 years	Statistical reports, literature review, interviews with stakeholders	Quantitative and Qualitative Data Analysis
	Is there a possibility that the effects of the project will spill over into other areas?	Cases of spill-over effects in other areas	Interviews with stakeholders and literature review	Qualitative Data Analysis

Criteria	Questions	Indicators	Sources	Methods
Sustainability	Is there political and structural support to continue project components after project funding ceases?	Presence of political and structural support to continue initiated efforts	Interview with stakeholders, literature review	Qualitative Data Analysis
Exit Strategy	Was there an appropriate exit strategy?	Presence of a practical exit strategy	Analysis of project plan, interviews with stakeholders	Qualitative Data Analysis
Ownership of the Project by the Recipient Country	Does the technical working group or the Ministry of Health have its own development strategy?	Presence of an autonomous development strategy by the involved agency	Interviews with stakeholders, literature review	Qualitative Data Analysis
External Monitoring	Did the implementing agency receive external audit (monitoring) within three months of project completion?	Proof of external audit within three months of completion	Interviews with stakeholders, literature review	Qualitative Data Analysis
Financial Autonomy	Did the technical working group or the Minstry of Health set aside separate budget to continue project operations?	Existence of a budget plan to continue project operations	Interviews with stakeholders, literature review	Qualitative Data Analysis
Facility and Equipment Maintenance	Are the procurements properly functioning?	The degree to which project procurements are functioning	Observation, checklist	Quantitative and Qualitative Data Analysis
	Is there appropriate infrastructure available such as electricity, water and sanitation facilities?	The functions of the infrastructure	Observation, checklist	Quantitative and Qualitative Data Analysis

Criteria	Questions	Indicators	Sources	Methods
	Is it possible for the recipient country to maintain the procurements and the infrastructure?	Presence of a maintenance procedure regarding each procurement and infrastructure	Observation, checklist	Quantitative and Qualitative Data Analysis
Improvement of Management Capabilities	Is there a records management system?	Presence of a records management system for patients	Interviews with stakeholders, observation	Quantitative and Qualitative Data Analysis
	Are the facilities able to be used?	The number of facilities that can be used	Interviews with stakeholders and observation	Quantitative and Qualitative Data Analysis
	Is disease prevention data being used?	The degree to which disease prevention data is being used	Interviews with stakeholders and observation	Quantitative and Qualitative Data Analysis
Cross-cutting issues				
Gender Mainstream	Has the gender factor been considered during project planning?	Consideration of the gender issue during project planning	Project plan, interviews with stakeholders	Qualitative Data Analysis
	Did the project contribute to raising women's status and increasing their opportunities?	Cases of women's status being raised and opportunities increasing	interviews with stakeholders and observation	
Effects on the Environment	Was there a project component that was not environment friendly and caused pollution?	Cases of environmental pollution	Interviews with stakeholders and observation	
	Did the project contribute to environmental preservation?	Cases of environmental preservation	Interviews with stakeholders and observation	

2) WHO M & E Indicators for Integrated Vector Management (IVM)

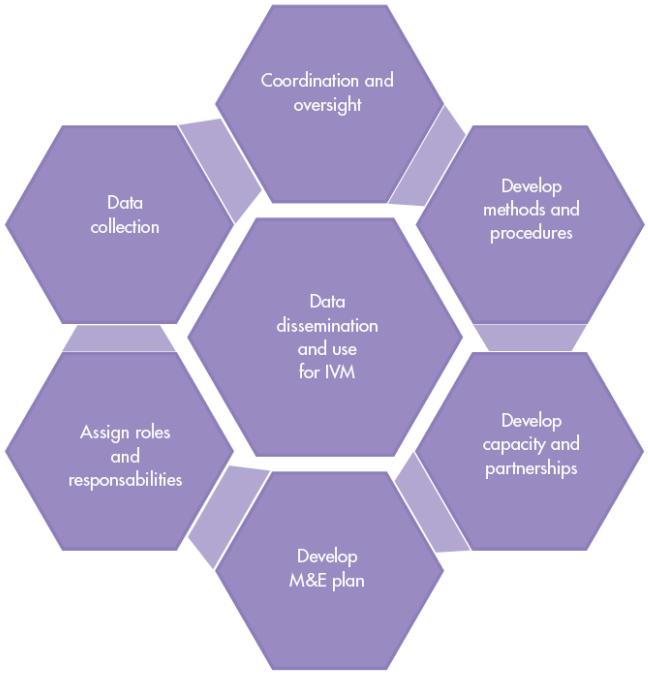
a. Background

Effective management of vector-borne diseases such as Malaria, Dengue, Plague, Trypanosomiasis, Leishmaniasis, Onchocerciasis, Bilharziosis, etc. requires a thorough analysis of the vector's habitat, living patterns and peak seasons for breeding. The WHO developed the M & E indicators for Integrated Vector Management to present strategic frameworks that enable such effective management of vector-borne diseases in member countries or areas that are struggling to gain control over them.

b. The Framework for Integrated Vector Management

The WHO published the Monitoring & Evaluation Indicators for Integrated Vector Management in 2012 to serve as a guideline and standard for countries seeking to integrate monitoring and evaluation of vector management programs. Integrated vector management emphasizes efficient use of resources, a rational decision-making process, efficacy, cost-efficiency, ecological soundness and sustainability. The main elements of an IVM strategy are: advocacy, social mobilization and legislation, intersectoral collaboration, an integrated approach, evidence-based decision-making and capacity-building. These elements require policy support in order to produce maximum outcomes.

The essence of IVM is an evidence-based, integrated approach to vector management. IVM encourages the incorporation of local knowledge regarding the vector and its determinants into intervention designs and supports active use of it. In addition, IVM approaches may be applied to interventions targeting other diseases because some vectors can transmit several diseases.



<Figure 2> IVM Monitoring and Evaluation Basic Components

c. Application

This evaluation referenced parts of the Monitoring & Evaluation Indicators for Integrated Vector Management because the project also includes a climate change component which is not discussed in the guideline. Nonetheless, this guideline will continue to offer direction for implementation and evaluation of similar KOICA projects in the future.

d. Significance of IVM Components and Outcome Indicators

IVM consists of 6 components and 17 outcome indicators. Outcome indicators are arranged according to the main components of integrated vector management below. There are minor discrepancies between IVM and OECD/DAC evaluation criteria, however, assessing the number of trained professionals or educated community residents is similar to the effectiveness

criteria of OECD/DAC. In addition, IVM emphasizes enactment of relevant policy, governmental support and strengthening of surveillance activities which complement the impact criteria of the OECD/DAC. The concept of health system strengthening, a post-MDGs trend, is especially well-reflected in the IVM design.

<Table 10> IVM Components and Outcome Indicators

Component	No.	Outcome indicator	Data type
Policy	1	National IVM policy in place	Logical
	2	National policy on pesticide management in place	Logical
Institutional arrangements	3	National steering committee on IVM in place	Logical
	4	National coordinating unit on vector control in place	Logical
Organization and management	5	Standards for professions and careers in vector control and public health entomology in place	Logical
	6	Number (and percentage) of staff with job descriptions that make reference to vector control	Numerical
Planning and implementation	7	National strategic and implementation plan on IVM in place	Logical
	8	Number (and percentage) of staff trained in IVM	Numerical
	9	Epidemiological surveillance system on vector-borne diseases in place	Logical
	10	Number (and percentage) of sentinel sites with functioning vector surveillance and insecticide resistance monitoring	Numerical
	11	Number (and percentage) of operational research priorities on vector control that have been addressed	Numerical
	12	Number of operational research outcomes on vector control that have been used in implementing programs	Numerical

Component	No.	Outcome indicator	Data type
Advocacy communication and social mobilization	13	National strategic and implementation plan on IVM in place	Logical
	14	Number (and percentage) of staff trained in IVM	Numerical
	15	Number (and percentage) of sites at which campaigns on behavioral change on vector control were conducted	Numerical
	16	Number (and percentage) of villages in which communities have been mobilized for vector control	Numerical
Capacity building	17	Certified training courses on IVM and judicious use of pesticides in place at national or regional level	Logical

2. Assessment Methods

1) Quantitative Methods

a. Analysis of Secondary Data

Statistical reports which pertain to the area's geographical, demographic, climatic and vector-borne disease data were analyzed to select appropriate indicators for measurement of project outcomes.

b. Analysis of Primary Data

A comprehensive national stakeholder survey was conducted in Mongolia through a joint collaboration between KOICA and the WHO Mongolia Office.

- Mongolia public health workforce
- Stakeholders from the implementing agencies
- Experts, policymakers and regular staff members in the climate change sector
- Experts, policymakers and regular staff members in the ector-borne diseases management sector

2) Qualitative Methods

a. Literature review of relevant documents

Through literature review of published documents and reports relevant to this project, indicators for monitoring and evaluating vector-borne disease projects were selected.

b. Personal Interviews

Semi-structured Interviews were conducted with a set of interview questions prepared in advance. Below are key interview questions asked.

- The degree to which this project conforms to the existing public health policies in Mongolia
- The degree of relevance this project has with regards to the target area's needs
- The degree to which this project achieves the prioritized objectives established by Mongolian public health policies
- The positive or negative impact this project had on Mongolian public health delivery system
- The challenges that hindered effective implementation of project activities and recommendations for future collaboration with KOICA
- The relevance of the capacity-building project in terms of length, location, content and applicability to current jobs

Categories of key stakeholders are as follows.

- Government officials, Ministry of Health officers, provincial health department officers, international cooperation agency, directors and managers at hospitals and health centers, vector-borne disease management trainees, public health expert, research facilities, etc.

c. Focus Group Interviews

- Target group: staff members in the implementing agency, vector-borne disease management trainee, local medical staff
- Methods: focus group interview was conducted with a group size of 5 to 15 participants using a set of interview questions prepared in advance. Participants' responses as well as their interactions were carefully observed
- Key questions: Mongol's readiness as it relates to IVM outcome indicators and OECD/DAC evaluation criteria (relevance, efficiency, effectiveness, impact and sustainability)

d. Direct Observation

- Methods: the evaluation team visited project sites to systematically gather primary data and to collect visual evidence of project operations through photos
- Key observations: the level of vector-borne disease management capacity, applicability of capacity-building training programs to current jobs, maintenance of facilities and equipment, management of procurements, etc.

3) Domestic Research Methods

a. Literature Review

- KOICA ODA Data Search: strategies by sector, support strategy by country, KOICA project approach, KOICA foreign assistance performance data, KOICA public health sector assistance performance data, etc.
- Review of Project Reports: assessment report, validity assessment, project plan, project development matrix, implementation plan, expert opinions, end-of-project report, mid-term/final evaluation reports, project outputs, list of procurements, meeting minutes, news articles, photographs, etc.
- Climate Change and Vector-borne Disease related Data: Mongolian

development strategy, Mongolian public health strategy, Ministry of Health statistical report, etc.

- Monitoring and Evaluation Data that pertains to Climate Change and Vector-borne Disease Management: WHO IVM, relevant publications from other international cooperation agencies and ODA organizations, statistical reports, etc.

b. Personal Interviews

- Project managers, participants and stakeholders were interviewed to assess whether activities were implemented as planned, whether activities considered the cultural background of the target area and whether Mongolian stakeholders agreed with the objectives of the project. Challenges faced during the implementation of the project were also discussed.
- Stakeholders involved in the capacity-building program were interviewed to assess whether the training curriculum was appropriate and relevant, whether the curriculum considered the cultural background of the target area and whether Mongolian stakeholders agreed with the objectives of the curriculum. Challenges faced with regards to the capacity-building program were also discussed.
- Subject matter experts were interviewed to assess whether this project is relevant to Korea's official development assistance strategies, whether this project provided for the public health needs of the target area and whether this project efficiently allocated resources. Overall challenges with regards to project operations were also discussed.

4) Research Methods Overseas

a. Literature Review

- Project documents and reports that are not available in Korea were collected in Mongolia

b. Personal Interviews

- Ministry of Health officials, provincial health department officials, National Center for Communicable Disease officials and National Center for Zoonotic Disease officials (a total of 20) were interviewed to assess whether this project conformed to the existing public health policies of Mongolia, whether this project meets the public health needs of the target area, whether project activities all contributed to the achievement of the overall objective and whether this project contributed to forming new policies. The interview was conducted using a structured set of questions which also included topics of environment and gender. The positive and negative impact created by this project and challenges faced during the implementation of the project were also discussed.
- Vector-borne disease management trainees were interviewed and surveyed to assess whether they are currently working for government agencies or health facilities performing duties relevant to that of the training, whether they were satisfied with the training curriculum, whether there were challenges related to the training and whether there were follow-up training sessions after project completion.
- Project beneficiaries and stakeholders were also interviewed to assess their level of satisfaction with the project.

c. Site Visits

- Through on-site visits, the evaluation team assessed the degree to which local vector-borne disease response capacity was strengthened. It also

examined if there was an integrated disease management system in place and if the created impact will be sustainable in the long run

d. Community Awareness Survey

- Between 2011 and 2012, surveys were conducted in target areas to measure the degree to which community awareness was raised through various project activities. The same type of surveys were conducted again in 2013 under the supervision of the WHO Mongolia Office to assess whether the community residents retained knowledge gained during project implementation. The WHO Mongolia Office distributed, collected and analyzed the surveys.

Section ii. Unique Qualities of this Evaluation

1. Clear and Comparable Indicators

Indicators that are relevant, realistic, clearly measurable and comparable were selected from OECD/DAC, WHO IVM and Mongolian Ministry of Health objectives.

2. Standardized Evaluation Tools

Evaluation tools that were tested and verified in many other public health projects targeting developing countries were modified to accommodate this particular project, enabling an evaluation that is up to par with the international standard.

3. Outcome-specific Evaluation

Although OECD/DAC evaluation criteria are applicable to public health projects, specific indicators that directly relate to project outcomes are required to conduct an in-depth evaluation of a project. This evaluation utilizes specific and modified indicators that are highly relevant to the outcomes produced as a result of this project. The framework used in this evaluation will be applicable to similar projects in the future.

4. Qualitative Methods and Triangulation

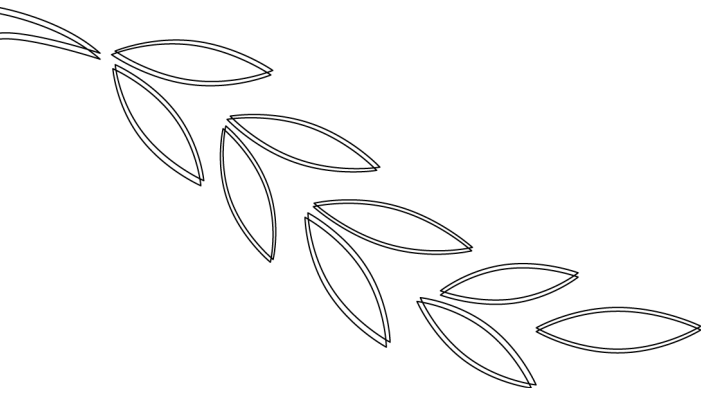
Both qualitative and quantitative methods were used for completeness of data. In data analysis, triangulation method was used testing for validity and quality in order to allow for a richer interpretation of data.

5. Other Qualities

This evaluation outlines lessons learned and recommendations for future projects, contributing to the existing body of knowledge and advancing the field of Official Development Assistance evaluation. The framework and tools developed through this evaluation can also be used as a reference for future evaluations of KOICA public health projects.

This evaluation also aims to disseminate new knowledge gained from the project and make findings transparent to the international community, raising awareness about KOICA's assistance endeavors and enabling active knowledge-sharing. In addition, this experience serves as an evidence aiding KOICA's future decision-making processes involving collaboration with the WHO.

Lastly, the evaluation team which consists of evaluation experts and researchers seeks to present KOICA's public health accomplishments and evaluation findings through rigorous academic activities.



V. Evaluation Findings

Section i. Relevance
Section ii. Efficiency
Section iii. Effectiveness
Section iv. Impact
Section v. Sustainability

Chapter

V Evaluation Findings

Section i. Relevance

1. Compatibility of the Project with the Target Country's Policies and Capacity

The National Center for Zoonotic Diseases (NCZD) and its provincial branches were established to research and manage various vector-borne diseases in collaboration with intersectoral agencies. Hence, the objectives of this project are in accordance with the main implementing agency's purpose of establishment and contributed to expanding its role and response capacity.

1) Results

A high level of political relevance was found through the relevant indicators from the National/Local Stakeholder Survey. This finding was also confirmed by personal interviews as well as focus group interviews with key stakeholders.

- Matrix Theme: relevance with the recipient country's development strategy, relevance with the recipient country's public health policies, timeliness and appropriateness with regards to the recipient country's capacity, contribution to the recipient country's pressing health problems
- IVM Theme: relevance to the recipient country's existing policies

- Question 1 - 1: project was in accordance with Mongolian national VBD policies and priorities
- Response 1 - 1: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded neutral
- Question 2 - 2: this project had an appropriate and realizable objective concerning the capacity of the implementing agencies in Mongolia
- Response 2 - 2: among 20 participants, 14 of them (70%) responded agree or agree, 1 participant (5%) responded neutral and 2 participants (10%) responded disagree

2. Selection of Target Area/Population

1) Selenge Province

Tick-borne diseases have traditionally been prevalent in the northern part of Mongolia in which there is a high area coverage of forests. In an effort to respond to the threat associated with vector-borne diseases including those that are caused by ticks, Center for Zoonotic Diseases, Selenge branch was established in 2004. Consequently, Selenge province was selected as one of the two target areas of this project due to its high prevalence rate of tick-borne diseases and its existing branch of Center for Zoonotic Diseases that was established for the purpose of responding to vector-borne diseases.

2) Gobi-Altai Province

Plague has traditionally been a major health priority in the southwestern part of Mongolia. In an attempt to build capacity to respond to plague incidence in the area, Center for Zoonotic Diseases established a branch in Gobi-Altai province. Consequently, this project selected Gobi-Altai province as a target area to enhance the center's

research and management capacity with regards to plague through project funding and training workshops.

3) Results

Target areas were found to be relevant through the indicators from the National/Local Stakeholder Survey. This finding was also confirmed by personal interviews as well as focus group interviews with key stakeholders.

- Matrix Theme: appropriate selection of the target area
- Question 1 - 4: this project targeted its interventions for relevant populations in Mongolia
- Response 1 - 4: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 of them (10%) responded neutral
- Question 1 - 5: this project considered and incorporated the priorities of the project beneficiaries
- Response 1 - 5: among 20 participants, 16 of them (80%) responded strongly agree or agree and 4 of them (20%) responded neutral

3. Appropriateness of Project Planning and Organization

This project was designed considering the existing capacities of implementing agencies and established goals and objectives that are appropriate for the duration, budget and scope of the project.

1) Results

Project planning and organization were found to be relevant and appropriate in achieving the objectives through the indicators from the National/Local Stakeholder Survey. This finding was also confirmed by

personal interviews as well as focus group interviews with key stakeholders.

- Matrix Theme: logical soundness and consistency of project planning, clear and specific project objectives, relevance of project length and budget
- IVM Theme: agreement of the recipient country's implementing agency
- Question 1 - 8: organization and planning of this project were logical and consistent throughout
- Response 1 - 8: among 20 participants, all 20 of them (100%) responded strongly agree or agree
- Question 1 - 9: this project established appropriate and realizable objectives with regards to its duration, budget and scope
- Response 1 - 9: among 20 participants, 15 of them (75%) responded strongly agree or agree, 3 participants (15%) responded neutral and 1 participant (5%) responded disagree

4. Project's Relevance to Cross-cultural Issues

In addition to assessing the project's relevance with outcome indicators for integrated vector management, the project's adherence to or consideration of cross-cultural issues were also assessed.

1) Results

Through relevant Indicators from the National/Local Stakeholder Survey, this project was found to have considered cross-cultural issues such as gender and the environment. The survey responses, however, showed relatively low achievements toward the MDGs whereas high level of relevance to Mongolian environmental policies was implied. This finding was also confirmed through personal interviews as well as focus group interviews with key stakeholders. In fact, MDGs have no mention of climate change or infectious diseases.

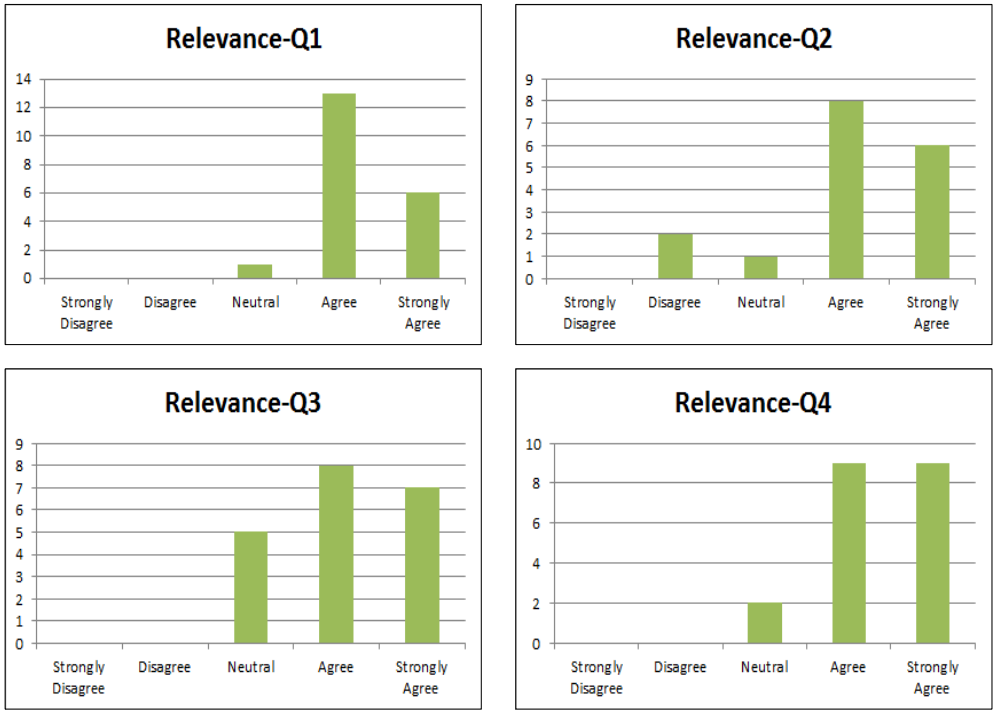
- Matrix Theme: achievements of MDGs, cross-cutting issue which pertains to the environment
- Question 1 - 6: this project contributed to the achievement of MDGs
- Response 1 - 6: among 20 participants, 10 of them (50%) responded neutral, 7 of them (35%) responded strongly agree or agree, 3 participants (15%) responded disagree
- Question 1 - 10: this project was relevant with regards to Mongolia's environmental policies
- Response 1 - 10: among 20 participants, 17 of them (85%) responded strongly agree or agree, 3 participants (15%) responded neutral

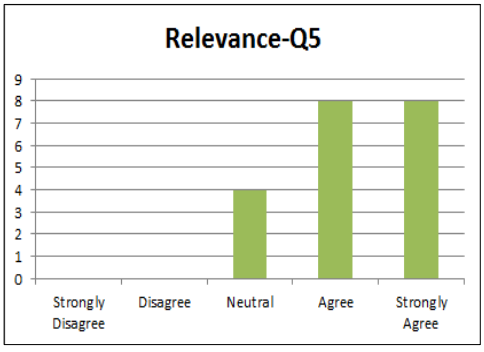
<Table 11> Relevance Survey Results

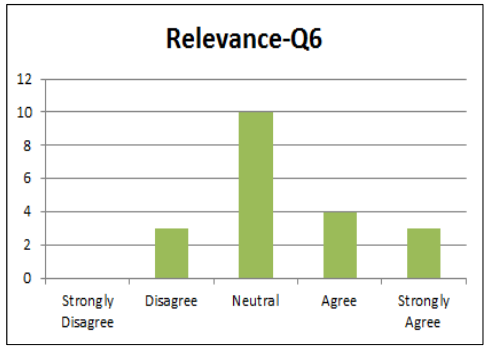
No.	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project was in accordance with Mongolian national VBD policies and priorities.	6 (30%)	13 (65%)	1 (5%)	0 (0%)	0 (0%)
2	This project had an appropriate and realizable objective concerning the capacity of the implementing agencies in Mongolia.	6 (30%)	8 (40%)	1 (5%)	2 (10%)	0 (0%)
3	This project contributed significantly to lowering the burden of VBD related problems confronted by Mongolian national agencies.	7 (35%)	8 (40%)	5 (25%)	0 (0%)	0 (0%)
4	This project targeted its interventions for relevant populations in Mongolia.	9 (45%)	9 (45%)	2 (10%)	0 (0%)	0 (0%)
5	This project considered and incorporated the priorities of the project beneficiaries.	8 (40%)	8 (40%)	4 (20%	0 (0%)	0 (0%)
6	This project contributed to the achievement of MDGs (e.g., reduction of neonatal mortality rates, improvement of pregnant mothers' health, etc.)	3 (15%)	4 (20%)	10 (50%)	3 (15%)	0 (0%)

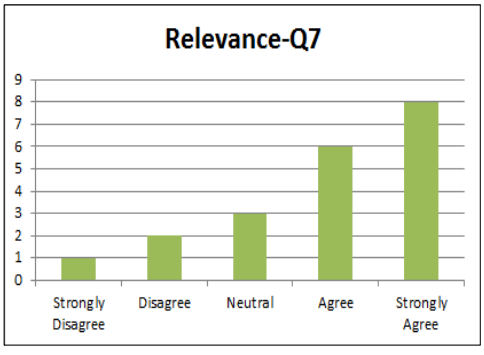
No.	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7	This project did not overlap with others implemented by partner organizations in terms of project direction and policies.	8 (40%)	6 (30%)	3 (15%)	2 (10%)	1 (5%)
8	Organization and planning of this project were logical and consistent throughout.	7 (35%)	13 (65%)	0 (0%)	0 (0%)	0 (0%)
9	This project established appropriate and realizable objectives with regards to its duration, budget and scope.	7 (35%)	8 (40%)	3 (15%)	1 (5%)	0 (0%)
10	This project was relevant with regards to Mongolia's environmental policies.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)

<Graph 1> Relevance Analysis Graph




Relevance-Q5
9
8
7
6
5
4
3
2
1
0
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree


Relevance-Q6
12
10
8
6
4
2
0
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree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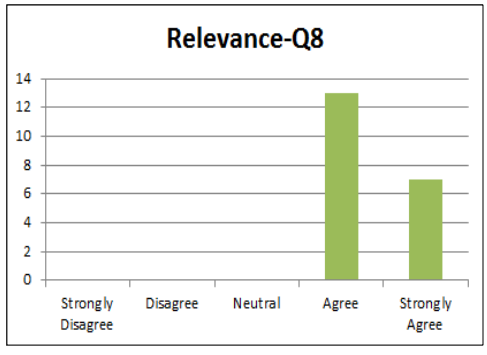
Neutral
Agree
Strongly Agree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Disagree
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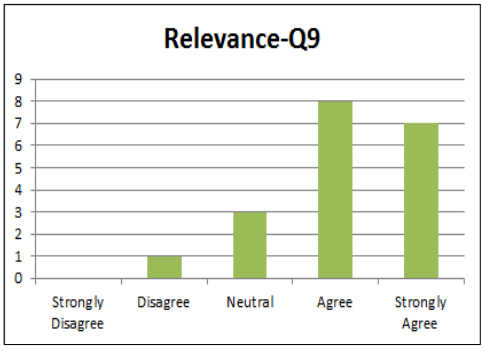
Agree
Strongly Agree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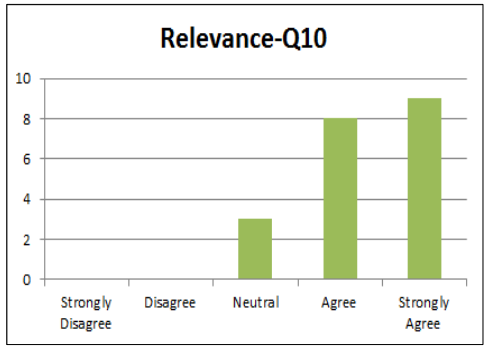
Disagree
Neutral
Agree
Strongly Agree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2
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Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

Section ii. Efficiency

1. Establishment of a Technical Working Group

In order to establish an efficient intersectoral implementation structure, the World Health Organization, the Ministry of Health and the National Center for Zoonotic Diseases, as leading implementing agencies, formed a technical working group with other governmental agencies such as the National Center for Communicable Disease, Institute of Veterinary Medicine, Ministry of Nature and Environment, etc. Collaboration among different governmental sectors were productive for the most part except for a few instances in which there were miscommunications and lack of intersectoral consensus on implementation logistics and costs.

1) Results

A high level of efficiency regarding the operations of the technical working group was found through relevant indicators from the National/Local Stakeholder Survey. This finding was also confirmed by personal interviews as well as focus group interviews.

- Matrix Theme: establishment of an appropriate channel of communication and negotiation among stakeholders, efficient management by the implementing agency
- Question 2 - 3: there was an appropriate channel of communication among relevant stakeholders to allow constructive feedback and negotiation
- Response 2 - 3: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded neutral
- Question 2 - 4: project management consultant efficiently managed the budget, schedule and human resources of the project

- Response 2 - 4: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 participants (10%) responded neutral
- Question 2 - 5: there were minimal obstacles in operating the project efficiently
- Response 2 - 5: among 20 participants, 17 of them (85%) responded strongly agree or agree, 2 participants (10%) responded neutral and 1 participant (5%) responded strongly disagree

2. Appropriate allocation of resources and budget

This project appropriately distributed resources such as the diagnostic procurements and laboratory equipments considering the individual capacity of each implementing agency involved and allocated its budget according to the scale and the scope of activities in each province.

1) Literature Review

Below is a list of procurements for this project.

Strengthen control of VBDs to lessen climate change impacts project (KOICA) in Mongolia: Technical procurement list

No	Item name	Specification/ description (brand model, functional requirement, minimum standard, unit etc) ***	Manufacturer / Supplier (full name, address, contact details) or equivalent	Catalogue (name, year, item number) or equivalent	Unit price (in US$)	Quantity	Total price (in US $)
		I. Equipments					
1	Honda generator		Japan HONDA	EG6500	2,110	3	6,330
2	Dewar	Sample transfer and storage for samples	Cole-Parmer www.coleparmer.com	RZ-03773-55	700	4	2,800
3	Computer Dell Vostro 3400	Laptop,Intel Core i5-460M Processor,4GB,DDR3,1066MH	Dell.com		596	1	596
4	GPS SeTrex Vista HCx		GARMIN INTERNATIONAL	A1739640	300	4	1,200
5	Analytical balances	Percent weighing	Cole-Parmer www.coleparmer.com	RZ-11104-10	2,570	2	5140
6	Tent (4 person)		China		700	4	2,800
7	Temperature/ Humidity	Veiw real-time temperature, himidity and dew point at a glance	Cole-Parmer www.coleparmer.com	RZ-23039-10	254	4	1016
8	lupe	Looked ticks	China		10	4	40
Subtotal					7,240		**19,922**
		II. Lab equipments and tools					
1	Laboratory Incubators	General Purpose Incubators	Cole-Parmer www.coleparmer.com	RZ-39352-05	2,850	2	5,700
2	ELISA reader	96 plate wells in 30 second read		EW-13055-52	7,120	1	7,120
3	Digital camera binocular compound microscope	Looked for samples		RZ-48925-05	2,350	1	2,350
4	Refrigerator/freezers	Flammable material storage; 240V		RZ-44201-05	5,090	1	5,090
5	Multi-Purpose Universal Centrifuge; 230V	spin function for samples		RZ- 17305-05	3,340	1	3,340
6	Rotor Centrifuge	24 x1.5-2.0 ml Speed range 17000-26810		RZ- 17305-59	950	1	950
		12 x 15ml Speed range 6000		RZ- 17305-60	962	1	962
7	Bacti - Cinerator	Streilizes platinum loops and needles safely and conveniently	Cole-Parmer www.coleparmer.com	RZ- 01850-24	447	2	894
8	Multichannel Pipettors	For laboratory use	Cole-Parmer www.coleparmer.com	RZ-25013-36	758	4	3032
Subtotal					23,867		**29,438**

II. Lab equipments and tools							
1	Laboratory Incubators	General Purpose Incubators	Cole-Parmer www.coleparmer.com	RZ-39352-05	2,850	2	5,700
2	ELISA reader	96 plate wells in 30 second read		EW-13055-52	7,120	1	7,120
3	Digital camera binocular compound microscope	Lunked for samples		RZ-48925-05	2,350	1	2,350
4	Refrigerator/freezers	Flammable material storage; 240V		RZ-44201-05	5,090	1	5,090
5	Multi-Purpose Universal Centrifuge; 230V	spin function for samples		RZ- 17305-05	3,340	1	3,340
6	Rotor Centrifuge	24 x1.5-2.0 ml Speed range 17000-26810		RZ- 17305-59	950	1	950
		12 x 15ml Speed range 6000		RZ- 17305-60	962	1	962
7	Bacti - Cinerator	Streilizes platinum loops and needles safely and conveniently	Cole-Parmer www.coleparmer.com	RZ- 01850-24	447	2	894
8	Multichannel Pipettors	For laboratory use	Cole-Parmer www.coleparmer.com	RZ-25013-36	758	4	3032
Subtotal					23,867		**29,438**
III. Lab equipments and tools							
1	Avtomax	cleaning	Formate China	GB 0612-16A	50	4	200
2	Freezer handling	transfers	Cole-Parmer www.coleparmer.com		2,500	4	10,000
3	Safety Hood and Boots	Safety		RZ-86225-37	10	60	600
		Safety			10	50	500
4	Gloves	Large 100m		RZ-86313-21	22.5	10	225
		X Large 100m		RZ-86313-22	22.5	8	180
5	Tubs	500m		RZ 67103-75	35	6	210
6	Vacuum tener	100m	China		100	2	200
7	Tips	2-20µl 96m	Eppendorf BRAND USA	RZ-18888-24	150	5	750
		20-200µl 96m		RZ-18888-28	140	8	1120
		50-1000µl 96m		RZ-18888-30	160	5	800
		0.1-10µl 96m		RZ-18888-66	140	4	560
8	Mosquito net	Safety mosqutues	Tactical Things USA		6	4	24
9	PCR tube	For PCR	Cole-Parmer www.coleparmer.com	RZ 67103-75	35	5	175
Subtotal					3,381		**15,544**
IY. Diagnostics for virology, molecular biology							
1	TBE IgG ELISA	- Kit detection for TBE IgG	EUROIMMUNI.DE		600	1	600
2	Borrelia ELISA (IgG)	- Kit detection for Borrelia IgG	EUROIMMUNI.DE		600	1	600
3	"Crimean Congo fever virus Mosaic 2"IgG, FI 279a-1005-2 G	- Kit detection for Crimean Congo fever virus IgG	EUROIMMUNI.DE		800	1	800
4	Japanese encephalitis virus IIFT (IgG)	- Kit detection for Japanese encephalitis virus IgG	Focus Diagnostics.USA		600	1	600
5	West Nile Virus IgG DxSelect™ EL0300G	- Kit detection for West Nile Virus IgG	Focus Diagnostics.USA		600	1	600
6	Ehrlihiosis, ELISA kit	- Kit detection for Ehrlihiosis IgG	Focus Diagnostics.USA		800	1	800
7	Anaplasmos, ELISA kit	- Kit detection for Anaplasmos IgG	Focus Diagnostics.USA		800	1	800
8	Rickettsia ELISA IgG	- Kit detection for Rickettsia IgG	EUROIMMUNI.DE		800	1	800
9	Quagen Viral RNA Extraction Kit, 250	- Kit for Viral RNA Extraction	QUAGEN. USA		1,000	1	2,000
10	ONE-STEP RT-PCR PreMix Kit, 100	- Kit for RT-PCR PreMix	BIONEER. Korea		200	1	400
11	Maxime™ RT-PCR PreMix Kit (i-StarTaq), 20 ul x 96	- Kit for RT-PCR PreMix	BIONEER.Korea		200	1	4,000
12	ECHNADA1	Primer detection for Ehrlihiosis	QUAGEN. USA		40	1	40
13	pXCR6	Primer for Ehrlihiosis PCR	QUAGEN. USA		40	1	40
14	EphplgroEL-F	Primer for Anaplasmos PCR	QUAGEN. USA		40	1	40
15	EphplgroEL-R	Primer for Anaplasmos PCR	QUAGEN. USA		40	1	40
16	WN910F	Primer for WNF PCR	QUAGEN. USA		50	1	50
17	WN1750R	Primer for WNF PCR	QUAGEN. USA		50	1	50
18	RompBOF	Primer for Rickettsia PCR	QUAGEN. USA		40	1	40
19	RompBOR	Primer for Rickettsia PCR	QUAGEN. USA		30	1	30
20	Crimian Congo F	Primer for Crimian Congo PCR	QUAGEN. USA		40	1	40
21	Crimian Congo R	Primer for Crimian Congo PCR	QUAGEN. USA		40	1	40
22	PE1 - F	Primer for Japanese encephalitis virus PCR	QUAGEN. USA		40	1	40
23	PE2 - R	Primer for Japanese encephalitis virus PCR	QUAGEN. USA		40	1	40
24	BGar1	Primer for Borrelia garinii PCR	QUAGEN. USA		40	1	40
25	BGar2	Primer for Borrelia garinii PCR	QUAGEN. USA		40	1	40
26	TBE- F	Primer for TBE PCR	QUAGEN. USA		40	1	40
27	TBE- R	Primer for TBE PCR	QUAGEN. USA		40	1	40
28	Yersinia pestis	Primer for Yersinia pestis PCR	QUAGEN. USA		40	5	200
29	Yersinia pestis F1 antigen elisa kit		Genway. Company USA		750	2	1,500
	Genetic Analyzer 10X Running Buffer with EDTA	25ml	ABI	402824	170		170
	ABI PRISM BigDye Terminator v3.1 Ready Reaction Cycle Sequencing Kit	100RUN	ABI	4337455	1,800		1,800
	BigDye® Terminator v3.1 Sequencing Standard	4 for 1/Pkg	ABI	4336935	450		450
	3130 POP-7 TM Performance Optimized Polymer	3.5ml	ABI	4363785	350		350
Subtotal							**14,150**
	Total						**79,054**

*Refer to Annex 1 for more details

2) Results

A high level of satisfaction was found regarding allocation of resources and project budget through relevant Indicators from the National/Local Stakeholder Survey. This finding was also confirmed by personal interviews as well as focus group interviews.

- Matrix Theme: efficient management by the implementing agency, completion of project on time and within the budget, use of appropriate technical resources
- Question 2 - 1: this project selected the most efficient resource allocation plan among many options
- Response 2 - 1: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded disagree
- Question 2 - 2: this project concluded on time and within the estimated budget
- Response 2 - 2: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded neutral
- Question 2 - 6: this project procured tools and equipment that are appropriate for the level of technical knowledge and skill in target areas
- Response 2 - 6: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded neutral

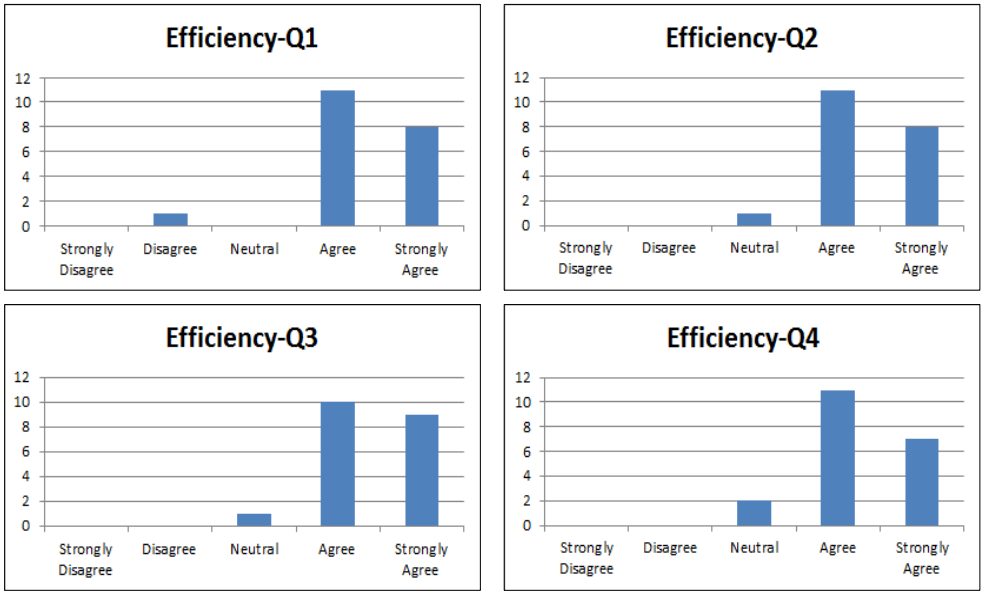
<Table 12> Efficiency Survey Results

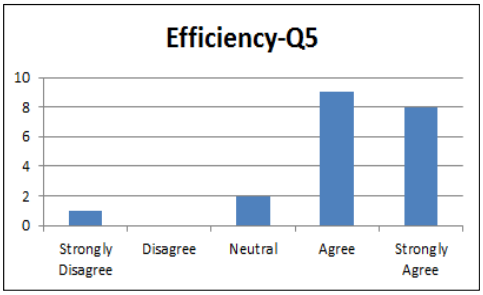
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project selected the most efficient resource allocation plan among many options.	11 (55%)	7 (35%)	2 (10%)	0 (0%)	0 (0%)
2	This project concluded on time and within the estimated budget.	9 (45%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)

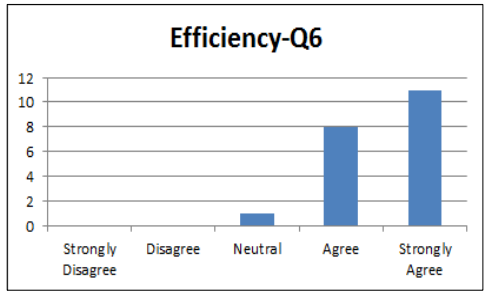
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3	There was an appropriate channel of communication among relevant stakeholders to allow constructive feedback and negotiation.	3 (15%)	8 (40%)	7 (35%)	1 (5%)	1 (5%)
4	Project Management Consultant (PMC) efficiently managed the budget, schedule and human resources of the project.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)
5	There were minimal obstacles in operating the project efficiently.	6 (30%)	7 (35%)	6 (30%)	0 (0%)	1 (5%)
6	This project procured tools and equipment that are appropriate for the level of technical knowledge and skill in target areas.	7 (35%)	9 (45%)	3 (15%)	1 (5%)	0 (0%)

* The numbering follows the same order of the National/Local Stakeholder Survey questions
** Refer to annex 2 and 3 for the survey sheet
*** For some questions, there were only 19 responses

〈Graph 2〉 Efficiency Analysis Graphs







3. Project Expenditure

KOICA provided both technical and financial support for this project through the WHO. Below is a table of overall project expenditure which not only includes expenses that occurred in Mongolia but also those of Cambodia and Papua New Guinea.

<Table 13> Overall Project Expenditure

Output	Planned Budget (USD)	Expenditure (USD)
1. Increased awareness and involvement of communities and stakeholders	136,000	129,610
2. Strengthened surveillance	166,000	177,825
3. Strengthened capacity for vector control	100,000	75,083
4. Strengthened capacity for effective diagnosis and treatment of VBDs	67,000	68,190
5. Strategic information on knowledge gaps	77,947	91,641
6. Effective and efficient project management (including procurement)	515,000	519,597
Programme support costs	138.053	138.053
Total	1,200,000	1,200,000

165,000 USD was allocated for activities in Mongolia and the detailed budget summary for Mongolia can be found in annex 1. Overall, an appropriate use of budget was confirmed through site visits and interviews in Mongolia.

Section iii. Effectiveness

1. Achievements of desired objectives and outputs

Posters, leaflets, electronic messages, internet website, TV advertisements, children's cartoons and awareness workshops were used in the beginning of project implementation to increase the awareness of vector-borne diseases among community residents and to encourage behavior change towards early detection and prevention.

After project completion, regional hospitals as well as the local branches of Center for Zoonotic Diseases in both Selenge and Gobi-Altai continued to perform outreach education to community residents through visiting homes, schools and community centers. Hospitals and Center for Zoonotic Diseases branches communicated targeted messages to areas in which a high incidence of seasonal tick-borne diseases and plague were anticipated.

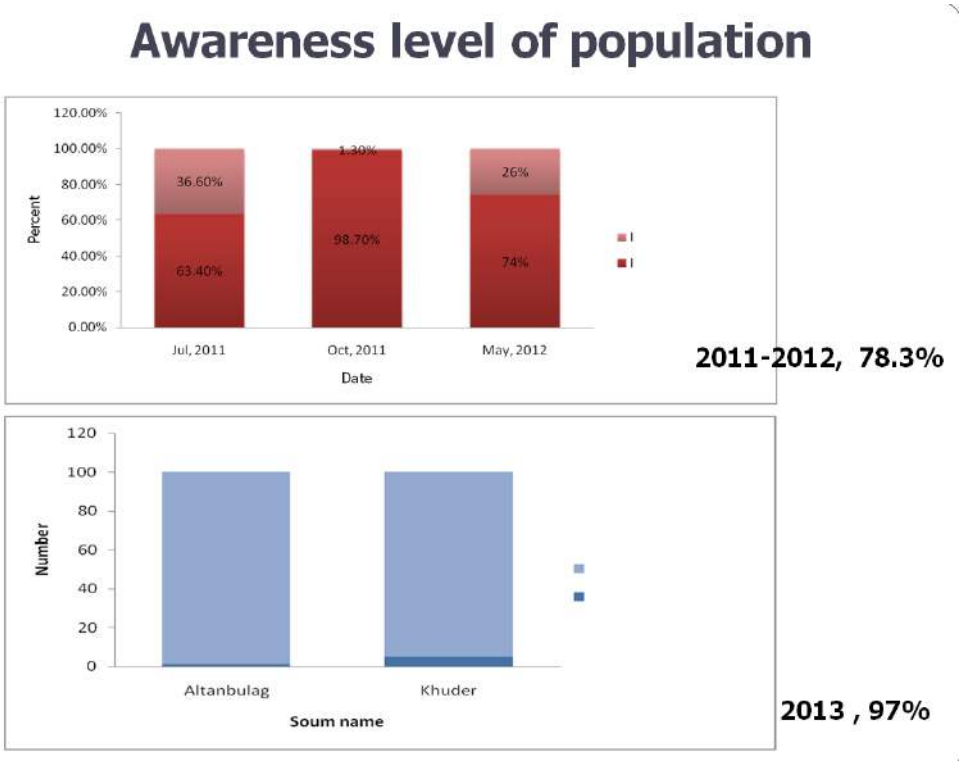
Consequently, residents' knowledge and awareness regarding vector-borne diseases noticeably improved in both Selenge and Gobi-Altai provinces as a result of community outreach education. Specifically, there were increases in reported behavior change and reported symptoms.

1) Results

The operation team at the WHO Mongolia Office conducted a community awareness survey three times between 2011 and 2012 (July 2011, October 2011 and March 2012) to ascertain changes in the level of awareness with vector-borne diseases. In 2013, the evaluation team requested the WHO Mongolia Office to conduct another round of community awareness surveys to observe whether there are any changes in the level of awareness since project completion. As a result, 97.0% of

the surveyed population (n=200) turned out to be aware of vector-borne diseases compared to 78.3% during the project, signifying that awareness-raising activities had a lasting impact among the community residents. Interviews also revealed that awareness-raising activities are still being continued today on a regular basis with the community residents and there is a high rate of participation.

- Matrix Theme: achievement of project objectives, level of project outputs, positive changes with the beneficiaries
- IVM Theme: advocacy, communication and social mobilization



2. Strengthened Surveillance and Response Capacity

This project significantly improved Mongolia's national and provincial capacity to respond to possible outbreaks of vector-borne diseases and also expanded the roles of medical workers and researchers to manage and research vector-borne diseases.

1) Results

a. Strengthened Surveillance

Two types of surveillance activities were conducted: epidemiological surveys and vector surveys. Epidemiological surveys consisted of a hospital-based survey and a community-based survey and vector surveys consisted of collection of tick species and plague investigation.

① Epidemiological Survey

Regional hospitals were able to keep a track record of patients suspected of vector-borne diseases as a result of the epidemiological survey. After project completion, blood samples are still being collected from suspected patients and sent to the National Center for Zoonotic Diseases for a case confirmation.

② Procedure for VBD case confirmation:

Step 1 - if a patient is confirmed to have a vector-borne disease, detailed patient information such as the patient's personal background, type of vector, symptoms, ICD-10 codes are entered into the existing database.

Step 2 - the National Center for Zoonotic Diseases then sends the confirmed laboratory results back to the regional hospital so that the patient can receive appropriate treatment.

③ Vector Survey

As a result of the vector survey conducted in Selenge province, Center for Zoonotic Diseases discovered for the first time that there were 18 different types of tickborne diseases including "Dermacentor nuttalli" and "Ixodes persulcatus" in Selenge province.

In addition, Center for Zoonotic Diseases conducted research activities to assess seasonal variations of tick species and tick distributions.

b. Strengthened Response Capacity

① Functional Early Warning System

As a part of the country's functional early warning system, tick-borne diseases have been included in the list of 30 or so diseases that must be reported by law. Hence, patients suspected of tick-borne diseases have continually been reported even after project completion in September, 2012.

② Reporting Structure for the Early Warning System (Selenge):

Step 1 - regional hospitals such as Khuder soum hospital and Altanbulag soum hospital regularly report to the Center for Zoonotic Diseases in Selenge on the current status of vectorborne disease surveillance activities in the area.

Step 2 - the Center for Zoonotic Diseases then gives a status update to the public health department at the provincial government.

Step 3 - the provincial government finally reports the status of vectorborne disease surveillance activities to the National Center for Communicable Diseases.

Step 4 - if the number of reported cases exceed the set threshold, the National Center for Communicable Diseases follows necessary protocols to respond to the threat as quickly as possible.

③ National Center for Zoonotic Diseases

Tick species, fleas and other vectors collected in all 21 provinces are sent to the National Center for Zoonotic Diseases for research, diagnosis and storage. For example, there were approximately 13,000 ticks and 3000 fleas that were collected and sent to the Center.

3. Diagnosis and Treatment

Medical workers from areas in which there is a high prevalence of vectorborne diseases received VBD management training and testing kits and equipments were procured to increase the diagnostic capacity of regional hospitals.

- Matrix Theme: achievement of project objectives, level of project outputs, appropriate technical support, repairing malfunctioning procurements, use of facilities
- IVM Theme: capacity-strengthening

1) Results

a. VBD management training for medical workers

VBD management training for tick-borne diseases was conducted in two soums during the project: Khuder soum and Altanbulag soum.

In both soums, VBD management training contributed to increasing the knowledge of medical workers. For example, before training, medical workers were not fully aware of symptoms related to tick-borne diseases and their various types. However, they are now able to identify symptoms early on and report them to confirm cases of suspected patients.

Through multiple rounds of training, the quality of care regarding diagnosis and treatment of tick-borne diseases markedly improved.

- Relevant Indicators from the National/Local Stakeholder Survey also

support this finding.

- Question 3 - 5: there is ongoing technical support for staff who attended capacity training sessions
- Response 3 - 5: among 20 participants, 13 of them (65%) responded strongly agree or agree, 6 participants (30%) responded neutral and 1 participant (5%) responded strongly disagree

b. Procurement of Testing Kits and Equipment

① National Center for Zoonotic Diseases

Testing kits for tickborne diseases were available at the National Center for Zoonotic Diseases since 2005, however, this project enabled the center to obtain testing kits that can diagnose a wider range of tickborne diseases.

② Center for Zoonotic Diseases, Selenge branch

Prior to project implementation, the Center for Zoonotic Diseases in Selenge did not have the capacity or the necessary tools and equipments to diagnose tickborne diseases. However, through procurements, the center was able to diagnose a wide range of tickborne diseases including Borrelia and Encephalitis which are the two most prevalent tickborne diseases in Selenge.

③ Relevant Indicators related to Procurements:

Quantitative data supported qualitative data collected by means of interviews and focus groups.

- Question 3 - 3: there were minimal defective materials procured through the project

- Response 3 - 3: among 20 participants, 11 of them (55%) responded strongly agree or agree, 7 participants (35%) responded neutral and 2 participants (10%) responded disagree or strongly disagree
- Question 3 - 4: procured equipment was used according to their intended purposes
- Response 3 - 4: among 20 participants, 17 of them (85%) responded strongly agree or agree and 3 participants (15%) responded neutral

4. Strategic Information and Research

Through vector surveys, procurements and VBD research training, the capacity of both clinical and laboratory researchers have seen remarkable improvement. This project provided an opportunity for intersectoral researchers to collaborate on research projects in the field of climate change and vector-borne disease.

For example, researchers at Gobi-Altai province were able to discover for the first time that there is a close association between vector-borne diseases and climate change.

In addition, VBD research training taught statistical methodology, epidemiological methodology and community survey methodology in order to increase the analytical capacity of researchers.

- Matrix Theme: positive changes in the beneficiaries. This indicator was not measured quantitatively. Rather, it was assessed through qualitative methods such as interviews with researchers
- IVM Theme: planning and implementation

5. Country Programs and Project Management

Most of the activities planned at project inception meeting were implemented accurately and on schedule.

1) Results

- Quantitative data collected from relevant Indicators from the National/Local Stakeholder Survey support qualitative findings gathered from interviews and focus groups

- Matrix Theme: overall effectiveness of the project, achievement of project objectives
- Question 3 - 6: this project demonstrated overall effectiveness with regards to budget, organization and management
- Response 3 - 6: among 20 participants, 16 of them (80%) responded strongly agree or agree, 3 participants (15%) responded neutral and 1 participant (5%) responded disagree
- Question 3 - 7: this project was effective in taking care of unexpected risk factors
- Response 3 - 7: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) did not respond

6. Overall Attainment of Project Objectives

This project achieved its stated objectives, expected outputs were realized and met the standards established by the OECD/DAC and the WHO IVM regarding the criteria of effectiveness.

1) Results

Quantitative data support qualitative findings gathered from interviews

and focus groups.

- Matrix Theme: achievement of overall project objective
- Question 3 - 1: this project achieved its stated objectives
- Response 3 - 1: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 participants (10%) responded neutral
- Question 3 - 2: the project's expected outputs matched the actual outputs
- Response 3 - 2: among 20 participants, all 20 of them (100%) responded strongly agree or agree

7. Cross-cutting Issues - Gender

There were no specific cases of gender discrimination during the project. There was also a fair distribution of men and women in the composition of the project operating team. In fact, the director of Mongolian Ministry of Health, the former director of National Center for Zoonotic Disease and the WHO Technical Officer were all women. With regards to reduction of maternal mortality, this project did not have any direct influence over the issue and therefore, it was not quantitatively measured as it is implied by the survey response below.

1) Results

- Matrix Theme: cross-cutting issue
- Question 3 - 8: this project effectively reduced maternal mortality rates
- Response 3 - 8: among 20 participants, 10 participants (50%) responded neutral, 8 participants (40%) responded strongly agree or agree and 1 participant (5%) responded strongly disagree
- Question 3 - 9: this project contributed to mitigating gender discrimination and promoting gender equality

- Response 3 - 9: among 20 participants, 14 of them (70%) responded strongly agree or agree, 4 participants (20%) responded neutral and 1 participant (5%) responded disagree

8. Cross-cutting Issues - Environment

There were no elements in the project that can have a negative impact on the environment. Rather, this project brought the public's attention to the issue of climate change and created evidence that can contribute to the establishment of a response mechanism to climate change. In addition, new environmental policies are expected to form. Quantitative data collected through relevant indicators support these findings.

1) Results

- Matrix Theme: cross-cutting issue
- Question 3 - 10: the project's strategy for improving the environment contributed to Mongolia's existing environmental policies and protection efforts
- Response 3 - 10: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) responded neutral

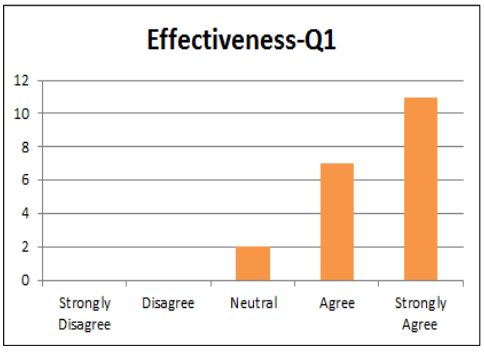
<Table 14> Effectiveness Survey Results

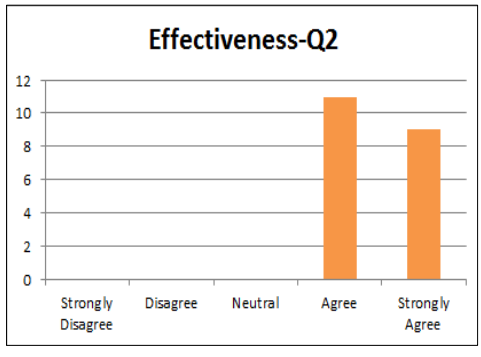
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project achieved its stated objectives.	11 (55%)	7 (35%)	2 (10%)	0 (0%)	0 (0%)
2	The project's expected outputs matched the actual outputs.	9 (45%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)
3	There were minimal defective materials procured through the project.	3 (15%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)

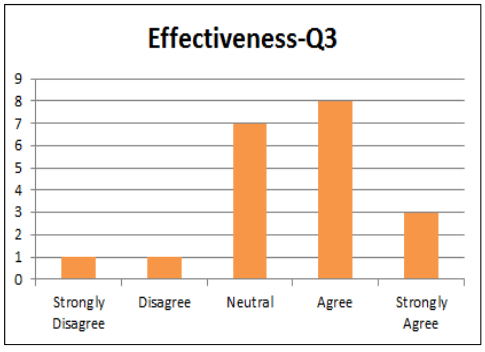
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4	Procured equipment was used according to their intended purposes.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)
5	There is ongoing technical support for staff who attended capacity training sessions.	6 (30%)	7 (35%)	6 (30%)	0 (0%)	1 (5%)
6	This project demonstrated overall effectiveness with regards to budget, organization and management.	7 (35%)	9 (45%)	3 (15%)	1 (5%)	0 (0%)
7	This project was effective in taking care of unexpected risk factors.	4 (20%)	15 (75%)	0 (0%)	0 (0%)	0 (0%)
8	This project effectively reduced maternal mortality rates.	2 (10%)	6 (30%)	10 (50%)	0 (0%)	1 (5%)
9	This project contributed to mitigating gender discrimination and promoting gender equality.	7 (35%)	7 (35%)	4 (20%)	1 (5%)	0 (0%)
10	The project's strategy for improving the environment contributed to Mongolia's existing environmental policies and protection efforts.	9 (45%)	10 (50%)	1 (5%)	0 (0%)	0 (0%)

* The numbering follows the same order of the National/Local Stakeholder Survey questions
** Refer to annex 2 and 3 for the survey sheet
*** For some questions, there were only 19 responses

<Graph 3> Effectiveness Analysis Graphs



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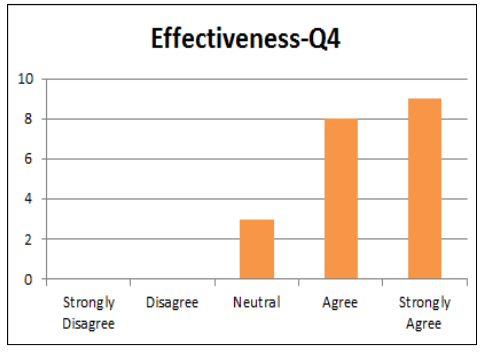
Neutral
Agree
Strongly Agree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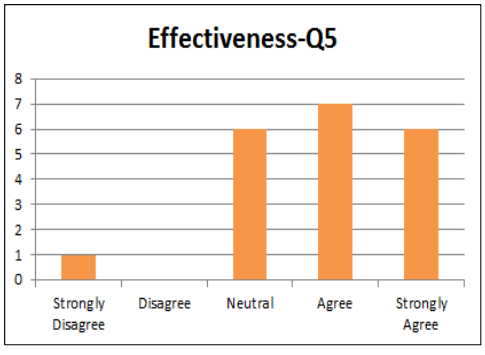
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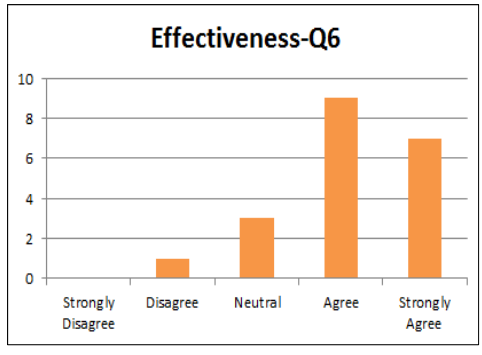
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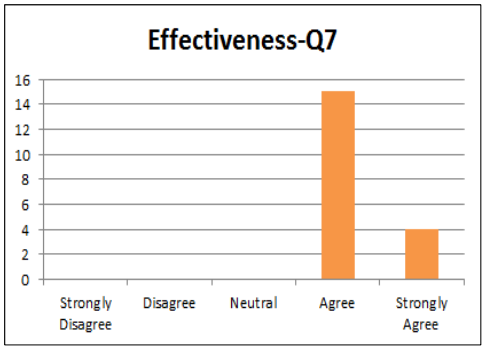
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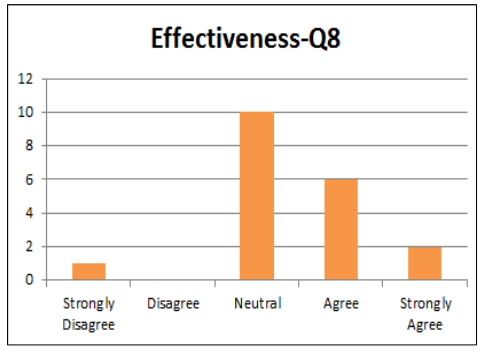
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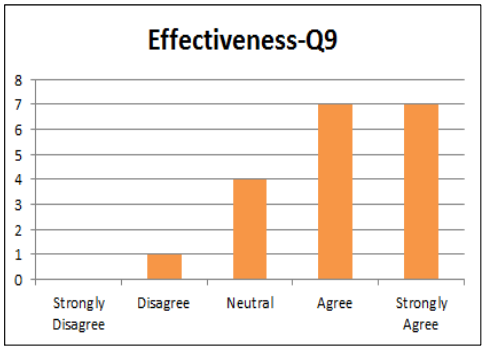
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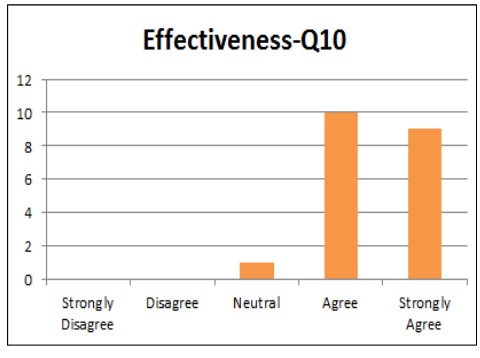
Effectiveness-Q10
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Disagree
Neutral
Agree
Strongly Agree

Section iv. Impact

1. Increased Community Awareness

There has been an increase in the number of community residents visiting regional hospitals for regular screening, diagnosis and reporting of vector-borne diseases due to medical workers and employees from the Center for Zoonotic Diseases conducting community outreach education.

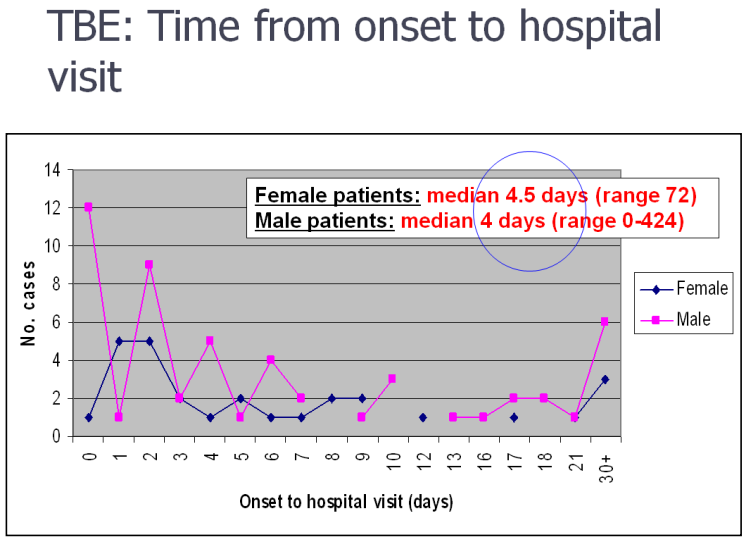
Reaction time of the residents from onset to hospital visit has also been measured to observe if the reaction time has become any shorter as a result of the project. Figure 3 and 4 show positive results.

Hence, this project contributed to community residents' increased awareness and encouraged behavior change which translated into shortened reaction time.

- Matrix Theme: positive changes in the beneficiaries
- IVM Theme: advocacy, communication, social mobilization

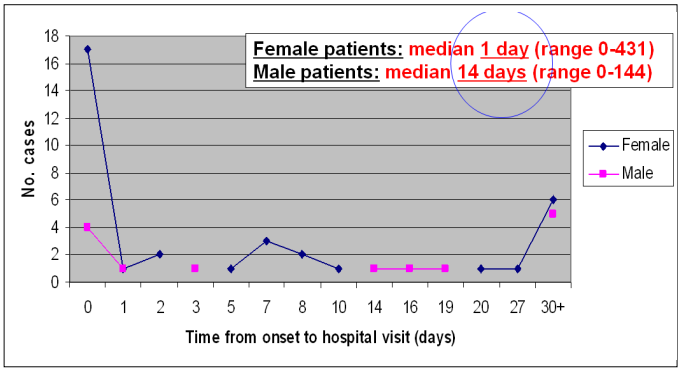
1) Results - Behavior Change

The WHO Mongolia Office assessed the reaction time of community residents from the onset of vector-borne diseases to hospital visits in October, 2013. The impact of the project regarding this area was further assessed after project completion.



<Figure 3> Tick-borne Encephalitis:
Average Time from Onset to Hospital Visit

Figure 3 shows the average time it takes for community residents to visit the hospital when they suspect vector-borne diseases. On average, it takes 4.5 days for female patients and 4 days for male patients to visit the hospital. Among the respondents, 56% of female patients and 49% of male patients took 0 - 4 days from onset to hospital visit and 20% of female patients and 33% of male patients took 5 - 9 days from onset to hospital visit.



<Figure 4> Tick-borne Borreliosis:
Average Time from Onset to Hospital Visit

Tick-borne Borreliosis patients' reaction time was even shorter than that of Tick-borne Encephalitis patients. On average, it took 1 day for female patients and 14 days for male patients.

2) Results - Vaccinations

The number of shots taken for prevention of tick-borne diseases increased in both Khuder soum and Altanbulag soum since project completion. For example in Khuder soum, there was approximately 650 residents who received these shots in 2012 which later increased to approximately 850 residents in September of 2013.

In addition, regional hospitals now have the capacity to keep a record of patients who receive shots. Patient records specifically pertaining to tick-borne disease prevention shots did not exist prior to project implementation.

- Quantitative data collected through relevant Indicators from the National/Local Stakeholder Survey complement qualitative findings

gathered through interviews and focus groups

- Question 4 - 5: there is noticeable improvement with regards to awareness of VBD diseases and their treatment methods at all levels of society
- Response 4 - 5: among 20 participants, 17 of them (85%) responded strongly agree or agree and 3 participants (15%) responded neutral

2. Establishment of VBD Surveillance System

There has been a steady increase of patients suspected of vector-borne diseases after project completion signifying that the surveillance system is spotting previously unidentified cases.

Prior to project completion, there were no tick surveillance activities in Selenge province. However, as a result of the project, tick surveillance efforts are still being continued today with less frequency due to limited funding.

In terms of plague surveillance in Gobi-Altai province, due to the effects of climate change, fleas have shifted their usual domain and moved up to higher altitudes. As a result, marmots which were previously known to be host animals of fleas are no longer the main cause of plagues in the area. Other rodents with high level of contact with community residents have now become new host animals and the number of patients infected with plague is anticipated to increase.

- Matrix Theme: active epidemiological research and surveillance activities (because these indicator are not quantifiable, they were assessed qualitatively)
- IVM Theme: planning and implementation

3. Increased Capacity for VBD Diagnosis and Treatment

After training medical workers in VBD management, regional hospitals became more systematic in their design for community outreach. Medical workers continue to educate community residents about possible distribution of ticks, best ways to prevent tick-borne diseases, what to do when bitten by ticks, etc. Education is held every spring and fall in areas in which there is a high coverage of forest area. Depending on the age group of trainees, education is held in schools during class time for children, in hospitals for visiting patients and in community centers for adults.

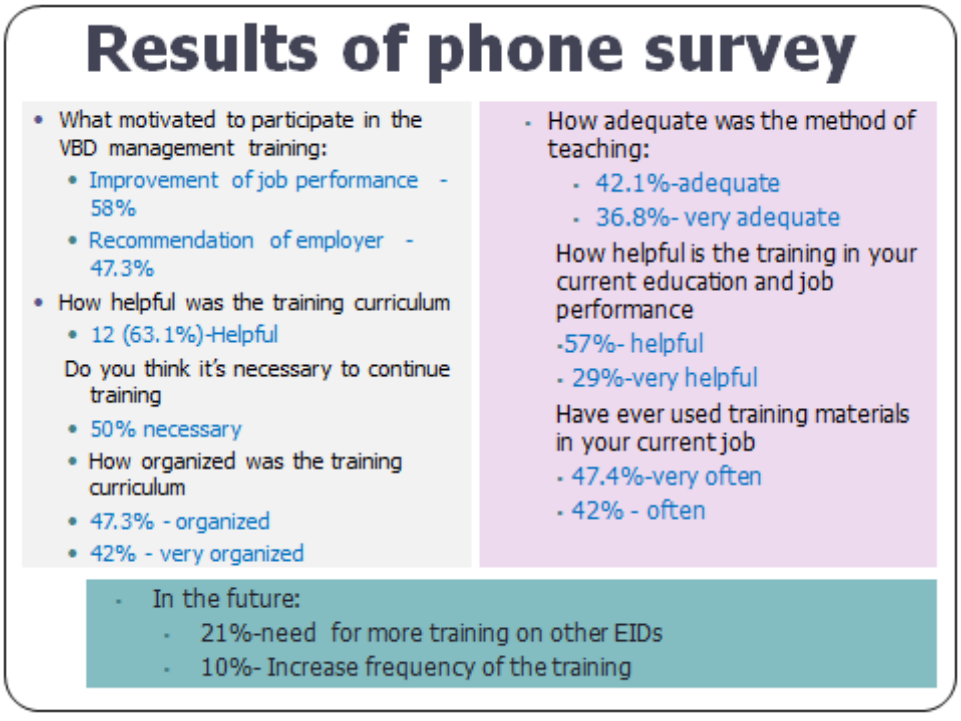
- Matrix Theme: capacity-building activities
- IVM Theme: advocacy, communication, social mobilization, capacity-building

1) Results

At the evaluation team's request, the WHO Mongolia Office agreed to conduct a VBD management training survey to evaluate the impact of VBD management training. A total of 19 medical staff who have previously attended VBD management training participated in this survey. Participants were from the National Center for Zoonotic Diseases, Veterinary and Animal Breeding Agency, Center for Zoonotic Diseases of Selenge, and soum hospitals of Eruu, Altanbulag, Shaamar, Khuder and Sukhbaatar.

The survey results show a high level of satisfaction with the training curriculum and a high level of utilization of training materials. 63.1% of the participants responded that the training curriculum was helpful overall. It also turned out to be helpful in the participants' current job performance with 86% responding helpful or very helpful. In addition, training materials were used often by most of the participants (89.4%), suggesting that the VBD management training created a lasting impact

with the participants' job performance. More details can be found in figure 5.



<Figure 5> VBD Management Training Survey Results

4. Increased Research Capacity

As a result of this project, number of research papers pertaining to vector-borne disease and climate change have been submitted to Mongolian academic journals for publication.

In addition, the National Center for Zoonotic Diseases holds training sessions for researchers in the local branches of Center for Zoonotic Diseases. After project completion, the Center for Zoonotic Diseases applied for additional funding to the World bank to continue training

researchers.

Consequently, this project strengthened the research capacity of National Center for Zoonotic Diseases and expanded the center's scope and reach of vector-borne disease research.

- Matrix Theme: active epidemiological research and surveillance activities (because these indicator are not quantifiable, they were assessed qualitatively)
- IVM Theme: planning and implementation, capacity-strengthening activities

5. Mongolian National Public Health System

- Matrix Theme: achievement of project objective
- IVM Theme: policy, planning and implementation

1) Results

a. VBD Policies

As a result of this project, vector-borne disease management has been identified as a national priority and incorporated into policy. For example, vector-borne diseases have been included in the list of diseases that must be reported by law.

b. VBD Guidelines

Ministry of Health issued a VBD guideline to provide each province with response protocols in case of a public health threat or an emergency. Hence, the reach of impact for this project extended well beyond the target areas.

- The quantitative data collected through relevant Indicators from the National/Local Stakeholder Survey complement the qualitative findings

gathered from interviews and focus groups

- Question 4 - 3: this project impacted not only the communities targeted for intervention but their neighboring communities as well
- Response 4 - 3: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 participants (10%) responded neutral

6. Overall Impact of the Project

Indicators from the National/Local Stakeholder Survey were used to assess the overall impact of the project.

1) Results

- Matrix Theme: achievement of project objective
- Question 4 - 1: this project improved Mongolia's public health infrastructure, its citizens' quality of life and reduced VBD disease burden
- Response 4 - 1: among 20 participants, 18 of them (90%) responded strongly agree or agree, 1 participant (5%) responded neutral and 1 participant (5%) responded disagree
- Question 4 - 2: this project fostered community development in target areas of Mongolia
- Response 4 - 2: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 participants (10%) responded neutral
- Question 4 - 4: there is continued enthusiasm regarding prevention and treatment of VBD diseases after project completion
- Response 4 - 4: among 20 participants, 18 of them (90%) responded strongly agree or agree and 2 participants (10%) responded neutral

7. Cross-cutting Issues

The degree to which this project considered gender equity and the environment was assessed through Indicators related to cross-cutting issues.

1) Results

- Matrix Theme: cross-cutting issue
- Question 4 - 6: this project allowed more opportunities for women and improved their social status and influence
- Response 4 - 6: among 20 participants, 13 of them (65%) responded strongly agree or agree, 5 participants (25%) responded neutral and 1 participant (5%) responded disagree
- Question 4 - 7: this project implemented environment-friendly activities to prevent pollution
- Response 4 - 7: among 20 participants, 15 of them (75%) responded strongly agree or agree and 5 participants (25%) responded neutral

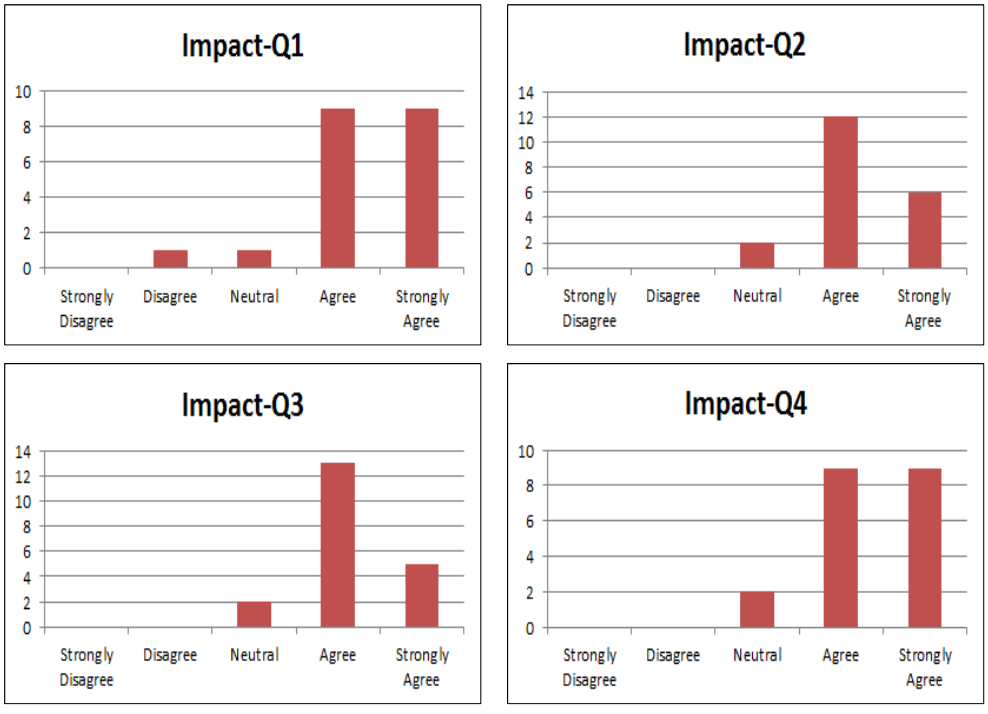
<Table 15> Impact Survey Results

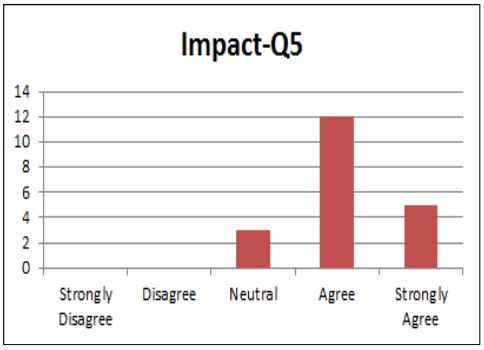
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project improved Mongolia's public health infrastructure, its citizens' quality of life and reduced VBD disease burden.	9 (45%)	9 (45%)	1 (5%)	1 (5%)	0 (0%)
2	This project fostered community development in target areas of Mongolia.	6 (30%)	12 (60%)	2 (10%)	0 (0%)	0 (0%)
3	This project impacted not only the communities targeted for intervention but their neighboring communities as well.	5 (25%)	13 (75%)	2 (10%)	0 (0%)	0 (0%)
4	There is continued enthusiasm regarding prevention and treatment of VBD diseases after project completion.	9 (45%)	9 (45%)	2 (10%)	0 (0%)	0 (0%)

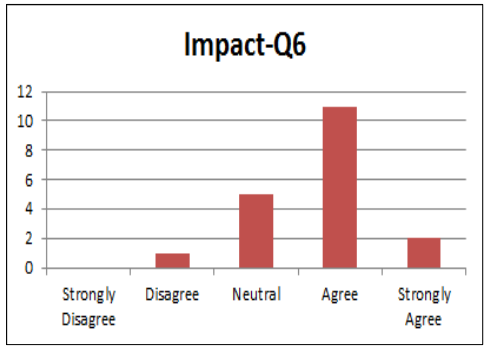
5	There is noticeable improvement with regards to awareness of VBD diseases and their treatment methods at all levels of society.	5 (25%)	12 (60%)	3 (15%)	0 (0%)	0 (0%)
6	This project allowed more opportunities for women and improved their social status and influence.	2 (10%)	11 (55%)	5 (25%)	1 (5%)	0 (0%)
7	This project implemented environment-friendly activities to prevent pollution.	9 (45%)	6 (30%)	5 (25%)	0 (0%)	0 (0%)

* The numbering follows the same order of the National/Local Stakeholder Survey questions
** Refer to annex 2 and 3 for the survey sheet
*** For some questions, there were only 19 responses

<Graph 4> Impact Analysis Graphs







Section V. Sustainability

1. Vector Surveys

The Ministry of Health was able to continue most of the project components after completion. However, due to limited funding, the frequency with which Centers for Zoonotic Diseases collected ticks and fleas for research and surveillance dropped. For example, the Center for Zoonotic Diseases, Selenge branch was able to conduct about ten field tick surveys during project implementation. When project funding ceased, they only had enough budget to conduct two field surveys. This does not, however, signify a reversal of project accomplishments because there had already been an intense study of tick types and seasonal distribution in the area during the project. The center's autonomous decision to conduct two field surveys per year are considered sufficient for monitoring the trend of tick-borne diseases as of now.

In terms of funding, hospitals and research institutes have had difficulty obtaining sufficient funding for strengthening VBD management capacity because vector-borne diseases are considered less of a threat to the

nation's public health than other diseases such as tuberculosis, venereal disease, Hepatitis A, chicken pox and diarrhea.

- Matrix Theme: consideration of sustainability after project completion

2. Diagnostic Testing Kits

Testing kits that were procured to the National Center for Zoonotic Diseases and its branches as well as the regional hospitals were reported to have been in good use. These kits, however, use the ELISA method which require a sizeable amount of consumables to continue diagnosing for vector-borne diseases. Due to the expensive cost of consumables and limited funding, existing kits can only be used to test for patients with severe conditions. There are not enough kits to be used for research purposes.

Particularly in the Center for Zoonotic Diseases, Selenge branch, it used to be able to diagnose a variety of tick-borne diseases. However, after project completion, it only has two types of testing kits that can detect Encephalitis and Borreliosis. The rest are sent to the National Center for Zoonotic Diseases for case confirmation.

- Through analysis of relevant Indicators from the National/Local Stakeholder Survey, there seems to be an insufficient level of governmental support to turn immediate project outcomes into sustainable outcomes

1) Results

- Matrix Theme: repairing malfunctioning equipment and other procurements
- Question 5 - 5: Mongolian government agencies had a procedure for resupplying and repairing tools and equipment procured through project funding
- Response 5 - 5: among 20 participants, 6 of them (30%) responded

strongly agree or agree, 9 participants (45%) responded neutral and 4 participants (20%) responded disagree or strongly disagree

3. VBD Management Training for Medical Workers

- Matrix Theme: achievement of long-term objectives, possibility of a spill-over effect, sustainability

1) Results

a. Training for Medical Workers

VBD management training was conducted several times during project implementation but stopped immediately after the project completed. There is also a high turnover rate of medical workers at soum hospitals and because hospitals currently lack the time and resources to train new medical workers, newcomers cannot be trained in the same way previous trainees were educated during the project. If left as it is, the gap between the new medical workers and the old will continue to grow, reversing project accomplishments made toward building individual capacity of medical workers and the hospitals.

Medical workers at soum hospitals are eager to receive further training in VBD management and to receive additional funding to mass print educational materials for community residents. They believe regular training of new medical workers and follow-up training of the experienced trainee are the surest way to develop a functional surveillance system.

b. Increased Research Capacity

The National Center for Zoonotic Diseases aims to strengthen the research capacity of the local branches through continuous training activities. Recently, it has applied for funding from the World Bank in order to expand their

training to a larger scale. Patient database has also been systematically updated for research purposes. Despite the limited funding, there is a high level of sustained interest in raising capable researchers in the field of vector-borne diseases and climate change.

4. Community Education

Community level education regarding vector-borne diseases is being sustained by most of the soums (districts). Because education does not require a burdensome amount of budget to implement, it is still implemented in most target areas and it is expected to continue in the future as well.

5. Establishment of VBD Management Guidelines and Policies

Upon project completion, a new VBD management guideline has been issued for all 21 provinces to follow. In addition, lessons learned from tick-borne disease management and response protocols are being applied to other types of vector-borne diseases such as those carried by mosquitos that previously did not have a proper surveillance system. VBD risk mapping has also been regularly updated to monitor disease trends.

1) Results

Quantitative data collected through relevant Indicators from the National/Local Stakeholder Survey matched qualitative findings gathered from interviews and focus groups.

- Matrix Theme: sustainbility with policy and the structure, exit strategy

- Question 5 - 2: this project contributed to capacity building and policy development in Mongolia to ensure sustainability
- Response 5 - 2: among 20 participants, 18 of them (90%) responded strongly agree or agree, 1 participant (5%) responded neutral and 1 participant (5%) did not respond
- Question 5 - 3: this project resulted in Mongolia establishing its own national VBD policy to continue and expand positive outcomes realized through the project
- Response 5 - 3: among 20 participants, 16 of them (80%) responded strongly agree or agree, 2 participants (10%) responded neutral and 1 participant (5%) responded disagree

6. Project Length and Exit Strategy

- Matrix Theme: sustainability regarding future strategies, exit strategy

1) Results

a. Project Length

Due to the progressive nature of climate change and the preventive focus of this project, there is difficulty associated with measuring the full reach of impact this project could have had on its target population and areas after implementing it for only 18 months. In order to measure the entire range of impact this project can make on its beneficiaries, the project has to be stretched to a lengthened implementation period and monitored over a longer period of time.

b. Exit Strategy

There had not been much dialogue among the project's leading agencies

and their counterparts about setting an appropriate and achievable exit strategy. Due to the lack of a comprehensive future plan, a few project components have been left unsupervised and unmanaged up until the assessment.

However, the Ministry of Health, National Center for Zoonotic Diseases as well as its local branches have autonomously established VBD priorities and allocated their limited budget accordingly to maximize efficiency. They have also reached out to other international donor agencies and research organizations to form collaborative relationships and to expand their VBD research network.

For example, in Gobi-Altai, the Center for Zoonotic Diseases decided to collaborate with intersectoral agencies to research the effects of climate change on flea distribution and switching of host animals to devise a new plan of action.

- Through relevant Indicators from the National/Local Stakeholder Survey and qualitative data gathered from interviews and focus groups, traces of effort that led to the discussion of a practical exit strategy were evident. However, it did not fully develop into a workable solution.

- Question 5 - 4: this project had an appropriate exit strategy
- Response 5 - 4: among 20 participants, 14 of them (70%) responded strongly agree or agree, 4 participants (20%) responded neutral and 1 participant (5%) rsponded disagree

7. Overall Sustainability of the Project

This project achieved its short-term objectives but the length of this project was not sufficient to assess whether it had achieved its long-term objectives. This does not imply, however, that the project failed to achieve its long-term objectives. With the extension of project length and a continuation project, project outcomes can be sustained.

1) Results

Quantitative data collected through relevant indicators from the National/Local Stakeholder Survey and qualitative findings gathered from interviews and focus groups were used to assess the overall sustainability of the project.

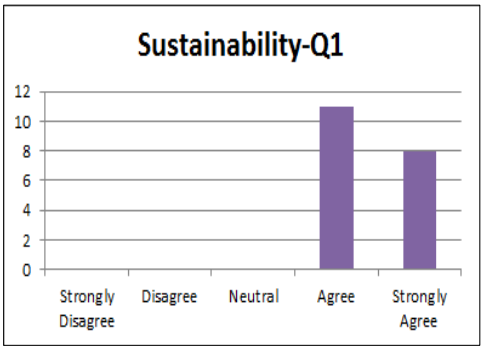
- Matrix Theme: overall sustainability of the project
- Question 5 - 1: this project achieved its long-term and midterm objectives laid out during its planning stage
- Response 5 - 1: among 20 participants, 19 of them (95%) responded strongly agree or agree and 1 participant (5%) did not respond
- Question 5 - 6: the project's overall objectives incorporated long-term environmental sustainability
- Response 5 - 6: among 20 participants, 15 of them (75%) responded strongly agree or agree, 3 participants (15%) responded neutral, 1 participant (5%) responded disagree and 1 participant (5%) did not respond

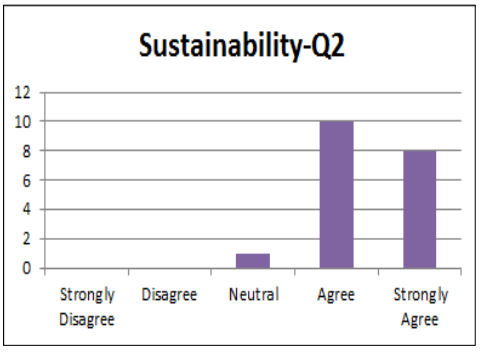
<Table 16> Sustainability Survey Results

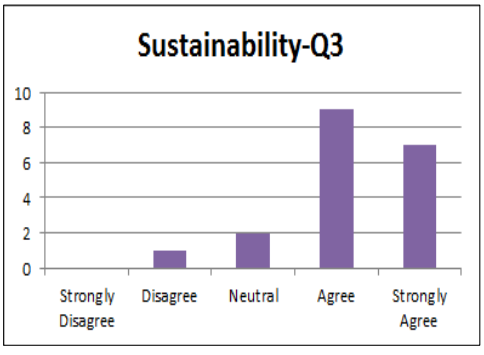
No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project achieved its long-term and midterm objectives laid out during its planning stage.	8 (40%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)
2	This project contributed to capacity building and policy development in Mongolia to ensure sustainability.	8 (40%)	10 (50%)	1 (5%)	0 (0%)	0 (0%)
3	This project resulted in Mongolia establishing its own national VBD policy to continue and expand positive outcomes realized through the project.	7 (35%)	9 (45%)	2 (10%)	1 (5%)	0 (0%)
4	This project had an appropriate exit strategy.	3 (15%)	11 (55%)	4 (20%)	1 (5%)	0 (0%)
5	Mongolian government agencies had a procedure for resupplying and repairing tools and equipment procured through project funding.	1 (5%)	5 (25%)	9 (45%)	2 (10%)	2 (10%)
6	The project's overall objectives incorporated long-term environmental sustainability.	5 (25%)	10 (50%)	3 (15%)	0 (0%)	1 (5%)

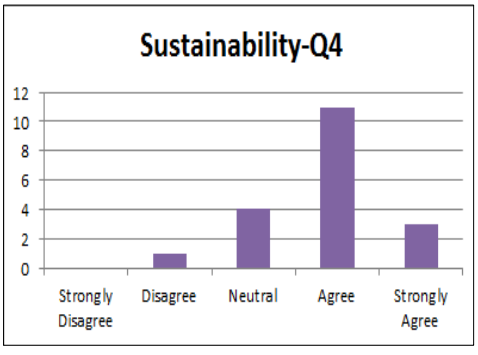
* The numbering follows the same order of the National/Local Stakeholder Survey questions
** Refer to annex 2 and 3 for the survey sheet
*** For some questions, there were only 19 responses

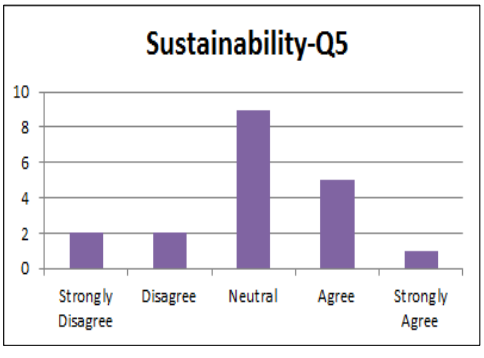
<Graph 5> Sustainability Analysis Graphs

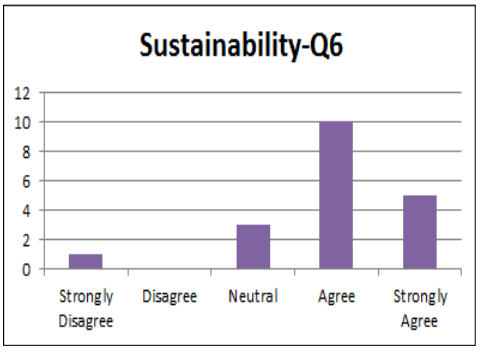












Ⅵ. Community Awareness Surveys

Section i. Background
Section ii. Survey Results

Chapter

VI Community Awareness Surveys

Section i. Background

Community awareness surveys were conducted 3 times during project implementation and once during the evaluation assessment. The survey consisted of questions that asked about the participants' knowledge in prevention of vector-borne diseases and their appropriate response when exposed to vectors (refer to annex 5). For comparison, the same survey that was used to measure the degree of awareness and behavior change before and after the project was used to measure if there were any changes in awareness after project completion.

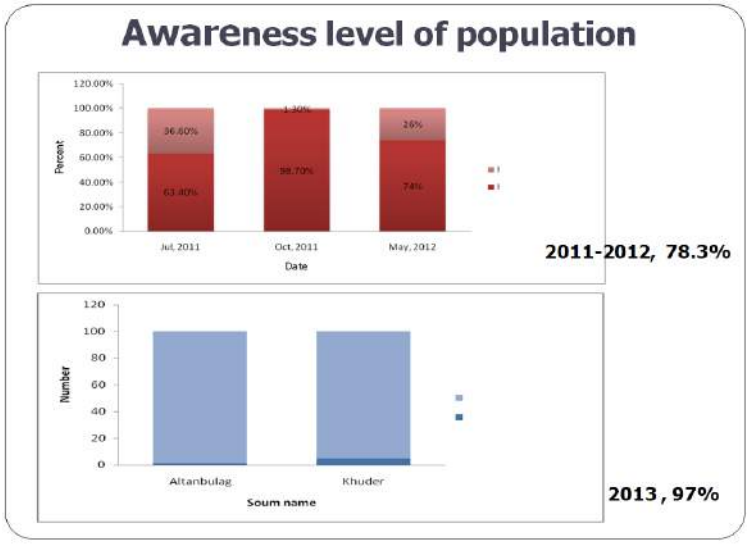
Community awareness surveys during project implementation were conducted in July 2011, October 2011 and May 2012 with a total of 657 participants. Their age ranged from 5 to 78 years with a median of 36.1 years. From a total of 657 participants, 333 participants were female comprising about 51% and 324 participants were male comprising 49% of the entire surveyed population.

All four rounds of surveys were distributed, collected and analyzed by the WHO Mongolia Office and the results for the first three rounds were compared with that of the final round during the evaluation. The final round of surveys were conducted in Altanbulag soum and Khuder soum of Selenge province.

Section ii. Survey Results

Community awareness surveys during the evaluation assessment were conducted in October 2013 with a total of 200 participants. Their age ranged from 16 to 85 years with a median of 41.6 years. From a total of 200 participants, 125 participants were female comprising about 62.5% and 75 participants were male comprising 37.5% of the entire surveyed population.

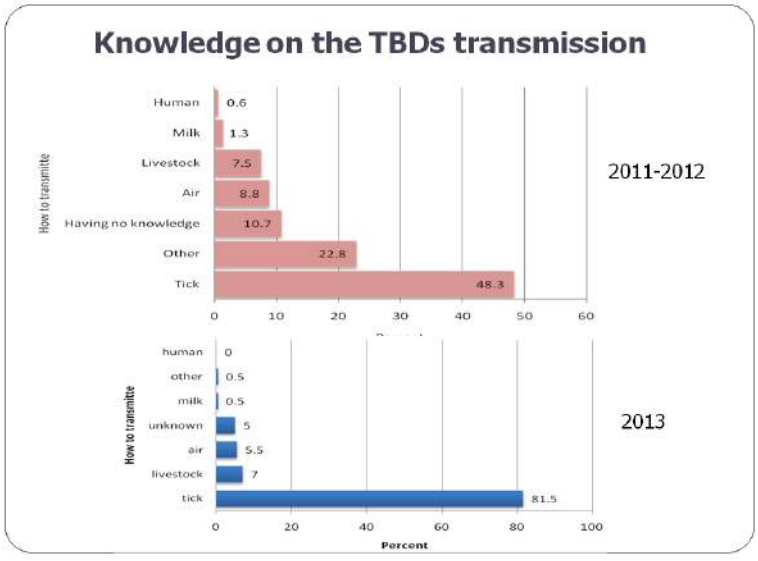
Between 2011 and 2012, 78.3% of the participants demonstrated a high level of awareness regarding vector-borne diseases. In 2013, the proportion of participants who demonstrated a high level of awareness increased to 97% which indicates that community awareness of vector-borne diseases remained high after project completion.



<Figure 6> Community Awareness Levels

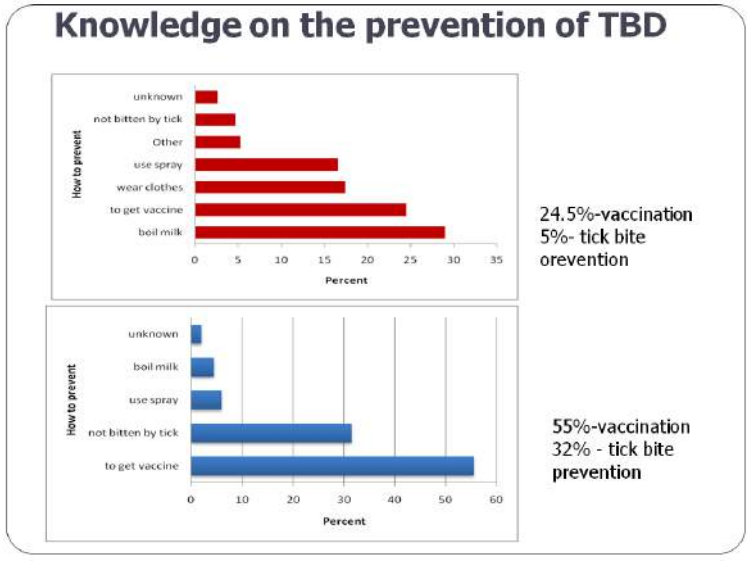
Increased community awareness was also evident through the participants' knowledge on tick-borne disease transmission. Between 2011

and 2012, only 47% of the participants were aware that tick-borne diseases were transmitted by ticks. However, in 2013, 81.5% of the participants responded that ticks were the vectors of transmission.



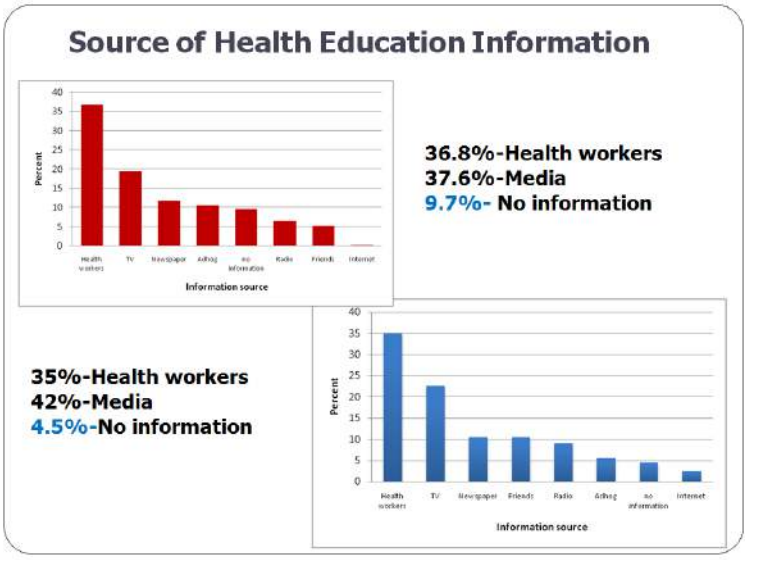
<Figure 7> Knowledge on Tick-borne Disease Transmission

Participants were also asked about their readiness to prevent transmission of tick-borne diseases in the survey. Between 2011 and 2012, 24.5% of the participants responded that they received vaccinations for prevention of tick-borne diseases and 5% of the participants responded that they take precautionary measures to prevent tick bites. However, in 2013, the numbers increased to 55% of the participants receiving vaccinations and 32% of the participants being cautious of potential tick bites.



<Figure 8> Knowledge on the Prevention of Tick-borne Diseases

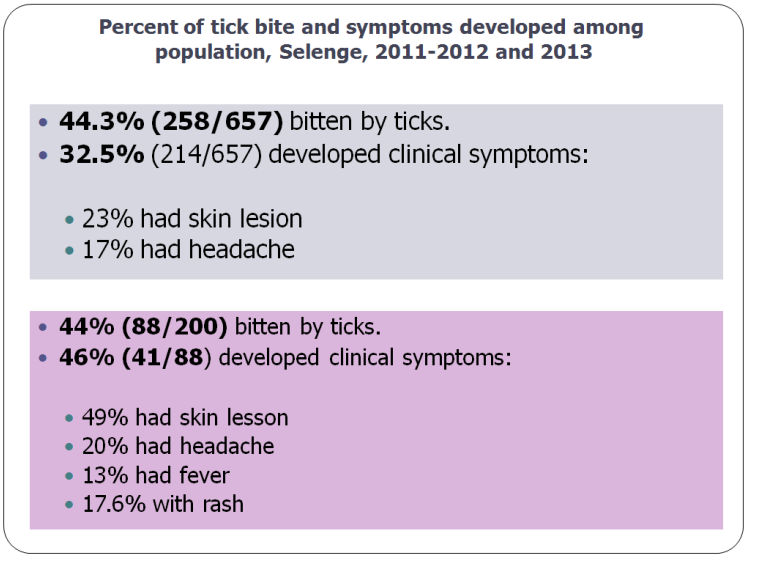
More participants have access to information regarding vector-borne diseases now than before. Between 2011 and 2012, 36.5% of the participants responded that they receive VBD information through their local medical staff, 37.6% responded that media was their source of information and 9.7% responded that they do not receive any VBD information. However, in 2013, 35% of the participants responded that they receive VBD information through their local medical staff, 42% responded that they receive information through the media and only 4.5% do not receive any VBD information which is lower than the number measured between 2011 and 2012.



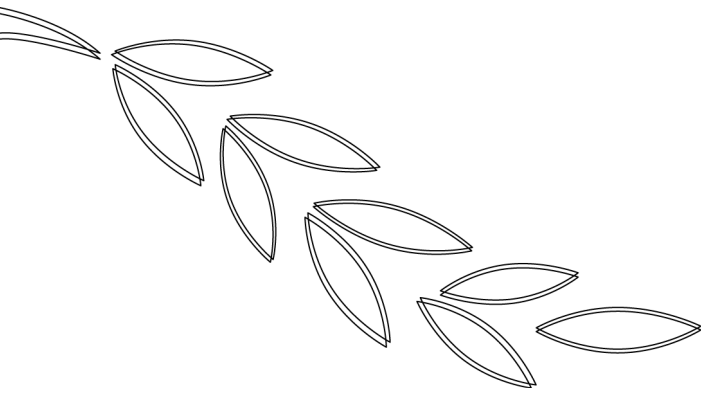
<Figure 9> Source of Health Education Information

Percent of tick bite and development of clinical symptoms were assessed among the surveyed population. Between 2011 and 2012, from a total of 657 participants in Selenge province, 258 participants (44.3%) responded that they were bitten by ticks. 214 participants (32.5%) developed clinical symptoms of which 23% had skin lesion and 17% had headaches.

In 2013, from a total of 200 participants, 88 participants (44%) responded that they were bitten by ticks and of those 88 participants, 41 participants (46%) developed clinical symptoms such as skin lesion (49%), headaches (20%), fever (13%) and rash (17.6%).



<Figure 10> Percent of Tick Bite and Developed Symptoms



VII. Conclusion

Section i. Summary of Evaluation Findings
Section ii. Lessons Learned and Recommendations
Section iii. Limitations
Section iv. Next Steps for Implementation

Chapter

VII Conclusion

Section i. Summary of Evaluation Findings

This project effectively achieved its stated objectives and outputs overall, raising community awareness with regards to vectorborne diseases, strengthening surveillance and response capacity both at the national and at the provincial level, strengthening diagnosis and treatment capacity of the public health workforce and strengthening VBD and climate change research capacity. Along with the project's effectiveness in achieving planned objectives and outputs, the project also satisfactorily met other OECD/DAC evaluation criteria.

1) For relevance, this project considered the capacity of each implementing organization involved and selected appropriate target areas and populations that would significantly benefit from utilizing existing resources and institutions.

2) For efficiency, this project established an intersectoral technical working group early on to allow for constructive feedback and discussion among key stakeholders. It also planned its activities with thorough consideration of the project's budget, timeline and scope.

3) For effectiveness, project activities contributed to raised community awareness regarding vector-borne diseases and strengthened diagnostic capacities, research capacities and vector-borne disease surveillance and response systems both at the national and at the local level. This project is especially significant because its outputs

contributed to Mongolia's health system strengthening. A system strengthening approach may not produce immediate outcomes but it paves the way for a more sustainable growth and development in the health sector. In that regard, KOICA's emphasis on long-term sustainability is a step in the right direction.

4) For impact, increased number of shots taken for prevention of tickborne diseases, reports of community resident's awareness and behavior change and active outreach by medical staff from soum hospitals are noted as significant accomplishments.

5) Finally, for sustainability of project outputs and impact, there had been a number of project activities that became less frequent or stopped completely due to reduced funding. For example, vector field surveys of ticks and fleas, supply of diagnostic testing kits, VBD management training for medical staff are activities that gradually downsized upon project completion. On the other hand, there are activities that produced positive long-term outcomes such as the establishment of VBD management guidelines, timely community outreach education and increased efforts to strengthen VBD research capacity.

A few limitations regarding sustainability are the lack of a practical exit strategy and the short implementation period of the project. Project duration of 18 months is not enough time to expect a significant change in the target country. However, it was sufficient to initiate a movement towards intersectoral collaboration and capacity strengthening in VBD management.

Section ii. Lessons Learned and Recommendations

1. Immediate Follow-up Support for the Project

1) VBD Management Training for Medical Workers

As a practical substitute for conducting in-person VBD management training in each soum, we recommend that the Ministry of Health produce a DVD recording of VBD experts and distribute them to all soums in which there is a high risk of VBD incidence. This method is relatively cheap and effective, especially for soum hopsitals that experience an unusually high turnover rate of medical workers.

2) Restocking Diagnostic Testing Kits

Laboratory equipment and facilities are currently in operation and in good condition. However, maintenance and repair might be a problem in the long run if there are new users who are not familiar with the equipment. Hence, there needs to be a proper management plan of procured equipment with printed copies of easy-to-read user manuals and educational DVDs.

2. Medium and Long-term Plans

1) Extension of Project Length

This project achieved its stated objectives and realized its expected outcomes. However, there were limitations in assessing the project's impact and sustainability because the implementation period of 18 months is not sufficient to observe considerable long-term changes. Hence, the evaluation team recommends extending the length of this project in the

target areas of Selenge and Gobi-Altai provinces.

2) Expansion of Target Areas

The Ministry of Health and the WHO Mongolia Office are currently planning to expand the project's target area by proposing a continuation project to KOICA. They hope to use the achievements from this demonstration project as evidence for success in other provinces. The continuation project will reflect the recommendations from this evaluation.

3) Integrated Training System

Medical staff at both the provincial level and the soum level have regularly been receiving training for select diseases prior to project implementation. Vector-borne disease management training was conducted separately as an addition to the existing training sessions. There are many more prevalent diseases in Mongolia for which the medical staff need training. Hence, the evaluation team is suggesting a defragmentation of separate disease training programs and incorporating all prevalent infectious diseases into a single curriculum.

4) Strengthened Management System of Infectious Diseases

Strengthening the management system of infectious diseases in Mongolia can be offered as a long-term solution. System strengthening approach may happen in various ways. For example, a KOICA ODA expert may be sent to Mongolia directly or the expert may be sent indirectly through a multilateral organization. Either way, the KOICA ODA expert will serve as an external consultant to the WHO Mongolia Office and the Ministry of Health. In addition, system strengthening can occur by supporting parts or all of the policymaking process such as establishing a legal foundation, managing the organization of human resources,

improving the communication system and allocating the budget appropriately.

For capacity-building of medical professionals, supporting the Field Epidemiology Training Program (FETP) may be a feasible step towards integration. Korea has been conducting FETP and will be able to share its experiences through an external consultant to Mongolia which recently started FETP.

Lastly, instead of burdening the National Center for Zoonotic Diseases, increasing the diagnosing and testing capacity of blood samples for local branches of Center for Zoonotic Diseases will reduce unnecessary administrative expenses and long wait times for test results to return.

For the recommendations set forth above, KOICA may decide to collaborate with the WHO again to plan and implement the continuation project. Collaboration with the WHO has many benefits including its relevant experiences, expertise and human resources. However, some of the cons related to working with a multilateral organization involves expensive overhead costs and problems associated with monitoring and evaluation. A joint evaluation project such as this one may resolve differences between organizations and reduce conflicts of interest.

KOICA may also decide to work directly with the Mongolian government as a bilateral collaboration. This approach will eliminate the expensive overhead costs but identifying and selecting an implementing organization with full capacity to carry out project activities may be difficult.

As a compromise, KOICA can collaborate with the WHO but dispatch a full-time ODA expert to work alongside the project staff in the WHO. This approach will reduce expenses and strengthen the monitoring component of the project.

The evaluation team carefully advises that KOICA examines each option with full consideration of pros and cons.

Section iii. Limitations

1. Evaluation Period

A major limitation identified from the onset of the evaluation was the timing of this assessment. This project launched in March, 2011 and completed in September, 2012. Attempting to measure the effectiveness of this project one year after completion poses challenges with regards to capturing an accurate picture of project outputs. Although most of them seemed to have continued upon project completion, there might have been some outputs that phased out or discontinued and evaluation of such outputs would be practically impossible or unrealistic. Hence, this evaluation placed an emphasis on assessing the impact and sustainability of the project, complementing the final project report published by the WHO which mainly reported on the effectiveness and efficiency of the project.

2. Collaboration with International Organizations

This project was implemented as a multilateral collaboration between KOICA and the WHO. As a result, a sizeable amount of project funding went into overhead costs of the WHO Geneva Headquarters and the Western Pacific Regional Office, lowering the budget for project activities.

Although the overhead costs were used for salaries of project operating staff and honorarium for external consultants in this project, more funding could have been allocated for project activities if this were solely managed by KOICA.

Section iv. Next Steps for Implementation

1. Advancement of Evaluation Tools

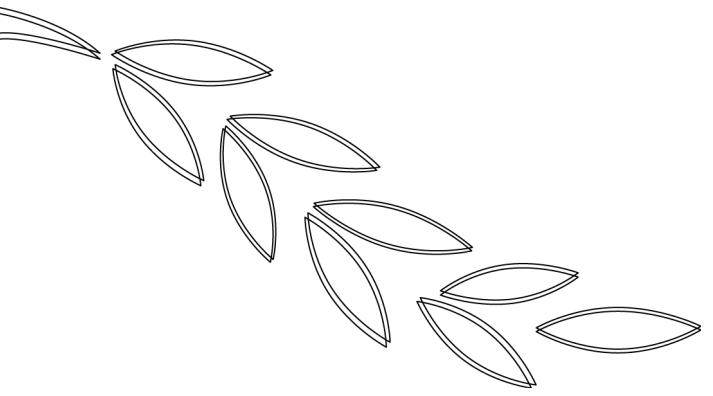
This project confirmed the validity of OECD/DAC evaluation criteria and referenced the indicators for IVM published by the WHO. In addition, this project is thought to have contributed to the advancement of evaluation frameworks in the field of climate change and vector-borne diseases. KOICA will also be able to take the experiential knowledge gained from this project to establish more evaluation frameworks that are unique to each topic and field.

2. Strengthening the Project in Mongolia

Continuous efforts are required to strengthen the project in Mongolia. Refer to section ii for more details.

3. Strengthening Multilateral Collaboration

As it is described in section ii, the multilateral collaboration between the WHO and KOICA for this project led to the achievement of significant outcomes and this model is highly recommended for future collaborations as well. KOICA should continue to invest in developing their internal multilateral experts to allow for more productive collaborations to take place.



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Annexes

<Annex 1. Project Budget for Mongolia>

№	Activities	Timeframe	Implementing organization	Counterparts	Budget (MTG)	Source
	1. Organization					
1.1.	Conduct national stakeholder meeting on theme "Strengthening control of vector borne diseases to lessen the impact of climate change in Mongolia	March, 2011	NCIDNF SCVL	MOH, SCVL NCCD	3'007'500	WHO, KOICA
1.2.	Conduct national stakeholder meeting to present result of project on theme Strengthening control of vector borne diseases to lessen the impact of climate change in Mongolia"	December,2011	MOH, NCIDNF	MoFA & LI, MoEN, NCCD, PHI, State Veterinary and Animal Breeding Department State Veterinary Laboratory, Veterinary Institute	4'210'500	WHO, KOICA
1.3.	Review/update existing guidelines, SOP for outbreak investigation and responses	April to August, 2011	MOH, NCIDNF	State Veterinary Laboratory, Veterinary Institute	6'015'000	WHO, KOICA
Part sum						13'233'000
	2. Coordinated surveillance and response					
2.1.	• Establish sentinel surveillance system in Huder, Altanbulag soum of Selenge	April to October, 2011	NCIDNF	State Veterinary Laboratory, Veterinary Institute, CIDNF of Selenge	12'030'000	WHO, KOICA
2.2.	Field survey on TBD (species, number, distribution, infection rate of tick) in Khuder, Altanbulag soums of Selenge aimags	April to October,2011	NCIDNF Veterinary Institute	Food and Agriculture University, SCVL, CIDNF of Selenge	6'015'000	WHO, KOICA
2.3.	Conduct risk study of TBD among the population of Selenge aimag	April to October, 2011	NCIDNF Veterinary Institute	Food and Agriculture University, State Veterinary Laboratory, CIDNF of Selenge	6'015'000	WHO, KOICA
2.4.	Conduct hospital based surveillance of TBD among the population of Selenge aimag	April to October, 2011	NCIDNF Veterinary Institute	Food and Agriculture University, SCVL, CIDNF of Selenge	6'015'000	WHO, KOICA
2.5.	Conduct studies on effect of climate factors on plague in Gobi-Altai province	March to August, 2011	NCIDNF, Gobi-Altai CIDNF	Meteorology research institute	30'075'000	WHO, KOICA
2.6.	Conduct vector (species, number, distribution, infectible of misquote) control field in Selenge	April to August, 2011	NCIDNF	Veterinary Institute, Food and Agriculture University, State Veterinary Laboratory	6'015'000	WHO, KOICA

Sub-total						66'165'000
3. Supplies and equipment						
3.1.	• Procurement of vector control supplies and equipment	April to August, 2011	NCIDNF	CIDNF of Selenge and Gobi-Altai	24'060'000	WHO, KOICA
3.2	• Procurement of surveillance supplies and equipment	April to August, 2011	NCIDNF	CIDNF of Selenge and Gobi-Altai	24'060'000	WHO, KOICA
3.3.	Procurement of resources for rapid response for VBDs and establish stock for rapid response team supplies, PPE and medica	April to August, 2011	NCIDNF	CIDNF of Selenge and Gobi-Altai	15'000'000	WHO, KOICA
3.4	Procurement of medicines, diagnostics and supplies, etc	April to August, 2011	NCIDNF	CIDNF of Selenge and Gobi-Altai	15'075'000	WHO, KOICA
Sub-total						78'195'000
4. Establishment of database on climate change and infectious diseases						
4.1.	Produce risk map on zoonoses	April to October, 2011	NCIDNF, State Veterinary and Animal Breeding Services	Veterinary Institute, State Veterinary Laboratory, Food and Agriculture University, MoEN, NCCD	4'812'000	WHO, KOICA
4.2.	Set up data management for the early warning system (human, vector and climate parameters) including mapping	April to November, 2011	NCIDNF, State Veterinary Laboratory	Meteorology research institute	4'812'000	WHO, KOICA
4.3.	Set up data management for climate variability on field survey	May to June, 2011	MOH NCIDNF	MoEN, MoH Metereology and Environemntal Research Center, NCCD	4'812'000	WHO, KOICA
Sub-total						14'436'000
5. IEC campaign						
5.1.	• Develop, pilot test and finalize key messages on TBD	May to October, 2011	NCIDNF, State Veterinary and Animal Breeding Services	NCCD, Veterinary Institute	7'218'000	WHO, KOICA
5.2.	Conduct community based social mobilization activities	May to October, 2011	NCIDNF, State Veterinary and Animal Breeding Services	NCCD, Veterinary Institute	7'218'000	WHO, KOICA
5.3.	Conduct IEC campaign among population in Gobi-Altai, Selenge	May to November, 2011	NCIDNF NCCD	Veterinary Institute, State Veterinary Laboratory	6'015'000	WHO, KOICA
5.4.	Conduct. IEC campaign among health worker in Gobi-Altai, Selenge Говь-	May to November, 2011	NCIDNF NCCD	Veterinary Institute, State Veterinary Laboratory	6'015'000	WHO, KOICA
Sub-total						26'466'000
Total						198'495'000 (165,000 USD)

<Annex 2. Stakeholder Survey-Korean>

설문조사자 성명	일자	응답자 성명

KOICA 사업종료평가 설문지

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1. 적절성

단위 : 1-매우 그렇지 않다, 2-그렇지 않다, 3-보통이다, 4-그렇다, 5-매우 그렇다

질문번호	질문내용	매우 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
1	본 사업은 몽골 내 국가 매개체 질병 정책 및 우선순위에 부합한다	1	2	3	4	5
2	본 사업은 몽골 내 사업수행기관의 역량을 고려할 때 적절하고도 실현 가능한 목표를 제시하였다.	1	2	3	4	5
3	본 사업은 몽골 국가기관이 마주한 매개체 질병에 대한 부담을 낮추는데 크게 기여하였다.	1	2	3	4	5
4	본 사업은 몽골 내 관련지역 인구집단에 개입을 목표로 하고 있다.	1	2	3	4	5
5	본 사업은 사업 수혜자를 우선적으로 포함하여 고려하였다	1	2	3	4	5
6	이 사업은 MDGs 달성에 기여한다.	1	2	3	4	5
7	본 사업은 사업 방향이나 정책에 있어 협력기관이 실시한 다른 사업과 겹치는 것이 없었다.	1	2	3	4	5
8	기관과 본 사업의 계획은 논리적이며 지속성을 고려하였다.	1	2	3	4	5
9	본 사업은 기간, 예산, 범위를 고려하였을 때, 적절하고 실현가능한 목표를 세웠다.	1	2	3	4	5
10	본 사업은 몽골의 환경 정책을 고려하였을 때 적절성을 갖고 있다.	1	2	3	4	5

2. 효과성

단위 : 1-매우 그렇지 않다, 2-그렇지 않다, 3-보통이다, 4-그렇다, 5-매우 그렇다

질문 번호	질문내용	매우 그렇다	그렇다	보통 이다	그렇지 않다	매우 그렇지 않다
1	본 사업은 세워둔 목적을 달성하였다.	1	2	3	4	5
2	본 사업은 기존에 계획한 목적을 잘 달성하였다	1	2	3	4	5
3	본 사업을 통해, 최소한의 결함이 있는 물품들이 조달되었다.	1	2	3	4	5
4	조달된 장비는 그들이 원하던 목적에 맞게 사용되었다.	1	2	3	4	5
5	역량교육에 참석한 스태프들에게 기술적 지원이 지속되고 있다.	1	2	3	4	5
6	본 사업은 예산, 기관, 관리를 고려했을 때 전반적으로 효과성을 보이고 있다.	1	2	3	4	5
7	본 사업은 예상치 못한 위험 요소를 관리하는데 있어 효과적이었다.	1	2	3	4	5
8	본 사업은 효과적으로 모성사망률을 낮추었다.	1	2	3	4	5
9	본 사업은 성차별을 완화하고 성평등을 신장하는데 기여하였다.	1	2	3	4	5
10	본 사업의 환경증진을 위한 전략은 몽골에 존재하던 환경정책과 환경보호 노력에 기여하였다.	1	2	3	4	5

3. 효율성

단위 : 1-매우 그렇지 않다, 2-그렇지 않다, 3-보통이다, 4-그렇다, 5-매우 그렇다

질문 번호	질문내용	매우 그렇다	그렇다	보통이다	그렇지 않다	매우 그렇지 않다
1	본 사업은 여러 방법 중 가장 효율적인 자원배분계획을 선택하였다.	1	2	3	4	5
2	본 사업은 사업 예산과 시간에 맞추어 진행되었다.	1	2	3	4	5
3	관련 이해관계자들끼리 건설적인 피드백과 토론을 위해 소통할 수 있는 적절한 통로가 있었다.	1	2	3	4	5
4	사업 관리 컨설턴트는 본 사업의 예산과 일정, 인사를 효율적으로 관리하였다.	1	2	3	4	5
5	사업을 효율적으로 진행하는데 있어 장애물은 거의 없었다.	1	2	3	4	5
6	본 사업은 사업 지역의 지식적 수준과 기술능력에 맞게 도구와 장비를 조달하였다.	1	2	3	4	5

4. 지속가능성

단위 : 1-매우 그렇지 않다, 2-그렇지 않다, 3-보통이다, 4-그렇다, 5-매우 그렇다

질문 번호	질문내용	매우 그렇다	그렇다	보통이다	그렇지 않다	매우 그렇지 않다
1	본 사업은 진행되는 동안 중장기적 목적을 달성하였다	1	2	3	4	5
2	본 사업은 지속성을 확보하는 몽골 내 정책발전과 역량강화에 기여하였다.	1	2	3	4	5
3	본 사업을 통해 매개체 질병과 관련하여 몽골 내에 긍정적 결과를 지속하고 확장할 수 있게 하는 자체적 국가정책을 수립하였다.	1	2	3	4	5
4	본 사업은 적절한 출구전략을 갖고 있다.	1	2	3	4	5
5	몽골 정부기관은 사업을 통해 조달된 기구를 더 제공하거나 기구를 수리해주었다	1	2	3	4	5
6	본사업의 전체적 목적은 장기적인 환경 지속성에 부합한다.	1	2	3	4	5

5. 영향력

단위 : 1-매우 그렇지 않다, 2-그렇지 않다, 3-보통이다, 4-그렇다, 5-매우 그렇다

질문 번호	질문내용	매우 그렇다	그렇다	보통이다	그렇지 않다	매우 그렇지 않다
1	본 사업은 몽골의 공중 보건의 인프라와 국민들의 삶의 질을 증진하고 매개체 질병의 부담을 줄였다.	1	2	3	4	5
2	본 사업은 몽골 내 사업지역의 지역사회 발전을 가져왔다.	1	2	3	4	5
3	본 사업은 지역사회뿐만 아니라 주변 지역사회에 까지 영향력을 미쳤다.	1	2	3	4	5
4	사업 종료 후 매개체 질병 치료와 예방과 관련한 열의가 이어지고 있다.	1	2	3	4	5
5	매개체 질병과 그에 대한 치료방법에 대한 인식을 생각해보았을 때, 모든 사회단계에서 주목할 만한 개선이 있었다.	1	2	3	4	5
6	본 사업은 여성에게 그들의 사회적 위치와 영향력을 증진하는데 더 많은 기회를 제공하였다.	1	2	3	4	5
7	본 사업은 공해를 막기 위한 친환경 활동을 실시하였다.	1	2	3	4	5

설문에 응해주셔서 감사합니다,

<Annex 3. Stakeholder Survey-English>

Surveyor's Full Name	Date	Respondent's Full Name

『KOICA End-of-Project Evaluation Survey』

Thank you for participating in this survey. The purpose of this survey is to evaluate a completed project titled "Strengthen control of vector-borne diseases (VBDs) to lessen the impact of climate change in the Western Pacific Region with focus on Cambodia, Mongolia and Papua New Guinea" using standardized questionnaire.This survey will ask specific questions regarding the project's relevance, effectiveness, efficiency, sustainability and impact in Mongolia.

Please note that your decision to respond to this survey is completely voluntary. If you want to take a break or stop at any point during the survey, you are free to do so. Otherwise, we would like to remind you that your feedback is very important to us.

The information you provide us will not be used against you in any way. Instead, the information we collect will inform the Korean government in planning for future global projects and will not be shared with anyone other than the members of the Korean evaluation team. There will not be any losses or benefits to you as a result of completing this survey.

This survey will take approximately 15 - 20 minutes to complete. Detailed instructions will be provided below. If you have any concerns regarding the questions presented on this survey, please feel free to ask the surveyor. Thank you.

SIGNATURE OF INTERVIEWER : _____

DATE : _____

Survey Instructions

Indicate your answers by CIRCLING the number (1 through 5) that corresponds to the degree to which you agree with the following statements.

Section Ⅰ. Relevance

SCALE : 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

#	Relevance	Disagree ⇔Agree
1	This project was in accordance with Mongolian national VBD policies and priorities.	1 2 3 4 5
2	This project had an appropriate and realizable objective concerning the capacity of the implementing agencies in Mongolia.	1 2 3 4 5
3	This project contributed significantly to lowering the burden of VBD related problems confronted by Mongolian national agencies.	1 2 3 4 5
4	This project targeted its interventions for relevant populations in Mongolia.	1 2 3 4 5
5	This project considered and incorporated the priorities of the project beneficiaries.	1 2 3 4 5
6	This project contributed to the achievement of MDGs (e.g., reduction of neonatal mortality rates, improvement of pregnant mothers' health, etc.)	1 2 3 4 5
7	This project did not overlap with others implemented by partner organizations in terms of project direction and policies.	1 2 3 4 5
8	Organization and planning of this project were logical and consistent throughout.	1 2 3 4 5
9	This project established appropriate and realizable objectives with regards to its duration, budget and scope.	1 2 3 4 5
10	This project was relevant with regards to Mongolia's environmental policies.	1 2 3 4 5

Section Ⅱ. Effectiveness

SCALE : 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

#	Effectiveness	Disagree ⇔ Agree
1	This project achieved its stated objectives.	1 2 3 4 5
2	The project's expected outputs matched the actual outputs.	1 2 3 4 5
3	There were minimaldefective materials procured through the project.	1 2 3 4 5
4	Procured equipment wasused according to their intended purposes.	1 2 3 4 5
5	There is ongoing technical support for staff who attended capacity training sessions.	1 2 3 4 5
6	This project demonstrated overall effectiveness with regards to budget, organization and management.	1 2 3 4 5
7	This project was effective in taking care of unexpected risk factors.	1 2 3 4 5
8	This project effectively reduced maternal mortality rates.	1 2 3 4 5
9	This project contributed to mitigating gender discrimination and promoting gender equality.	1 2 3 4 5
10	The project's strategy for improving the environment contributed to Mongolia's existing environmental policies and protection efforts.	1 2 3 4 5

Section Ⅲ. Efficiency

SCALE : 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 –Strongly Agree

#	Efficiency	Disagree ⇔ Agree
1	This project selected the most efficient resource allocation plan among many options.	1 2 3 4 5
2	This project concluded on time and within the estimated budget.	1 2 3 4 5
3	There was an appropriate channel of communication among relevant stakeholders to allow constructive feedback and negotiation.	1 2 3 4 5
4	Project Management Consultant (PMC) efficiently managed the budget, schedule and human resources of the project.	1 2 3 4 5
5	There were minimal obstacles in operating the project efficiently.	1 2 3 4 5
6	This project procured tools and equipment that are appropriate for the level of technical knowledge and skill in target areas.	1 2 3 4 5

Section Ⅳ. Sustainability

SCALE : 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

#	Sustainability	Disagree ⇔ Agree
1	This project achieved its long-term and midterm objectives laid out during its planning stage.	1 2 3 4 5
2	This project contributed to capacity building and policy development in Mongolia to ensure sustainability.	1 2 3 4 5
3	This project resulted in Mongolia establishing its own national VBD policy to continue and expand positive outcomes realized through the project.	1 2 3 4 5
4	This project had an appropriate exit strategy.	1 2 3 4 5
5	Mongolian government agencies had a procedure for resupplying and repairing tools and equipment procured through project funding.	1 2 3 4 5
6	The project's overall objectives incorporated long-term environmental sustainability.	1 2 3 4 5

Section Ⅴ. Impact

SCALE : 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

#	Impact	Disagree ⇔ Agree				
1	This project improved Mongolia's public health infrastructure, its citizens' quality of life and reduced VBD disease burden.	1	2	3	4	5
2	This project fostered community development in target areas of Mongolia.	1	2	3	4	5
3	This project impacted not only the communities targeted for intervention but their neighboring communities as well.	1	2	3	4	5
4	There is continued enthusiasm regarding prevention and treatment of VBD diseases after project completion.	1	2	3	4	5
5	There is noticeable improvement with regards to awareness of VBD diseases and their treatment methods at all levels of society.	1	2	3	4	5
6	This project allowed more opportunities for women and improved their social status and influence.	1	2	3	4	5
7	This project implemented environment-friendly activities to prevent pollution.	1	2	3	4	5

Thank you for your participation.

<Annex 4. Analysis of Stakeholder Surveys>

1. Relevance

No.	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project was in accordance with Mongolian national VBD policies and priorities.	6 (30%)	13 (65%)	1 (5%)	0 (0%)	0 (0%)
2	This project had an appropriate and realizable objective concerning the capacity of the implementing agencies in Mongolia.	6 (30%)	8 (40%)	1 (5%)	2 (10%)	0 (0%)
3	This project contributed significantly to lowering the burden of VBD related problems confronted by Mongolian national agencies.	7 (35%)	8 (40%)	5 (25%)	0 (0%)	0 (0%)
4	This project targeted its interventions for relevant populations in Mongolia.	9 (45%)	9 (45%)	2 (10%)	0 (0%)	0 (0%)
5	This project considered and incorporated the priorities of the project beneficiaries.	8 (40%)	8 (40%)	4 (20%	0 (0%)	0 (0%)
6	This project contributed to the achievement of MDGs (e.g., reduction of neonatal mortality rates, improvement of pregnant mothers' health, etc.)	3 (15%)	4 (20%)	10 (50%)	3 (15%)	0 (0%)
7	This project did not overlap with others implemented by partner organizations in terms of project direction and policies.	8 (40%)	6 (30%)	3 (15%)	2 (10%)	1 (5%)
8	Organization and planning of this project were logical and consistent throughout.	7 (35%)	13 (65%)	0 (0%)	0 (0%)	0 (0%)
9	This project established appropriate and realizable objectives with regards to its duration, budget and scope.	7 (35%)	8 (40%)	3 (15%)	1 (5%)	0 (0%)
10	This project was relevant with regards to Mongolia's environmental policies.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)

2. Efficiency

No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project selected the most efficient resource allocation plan among many options.	11 (55%)	7 (35%)	2 (10%)	0 (0%)	0 (0%)
2	This project concluded on time and within the estimated budget.	9 (45%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)
3	There was an appropriate channel of communication among relevant stakeholders to allow constructive feedback and negotiation.	3 (15%)	8 (40%)	7 (35%)	1 (5%)	1 (5%)
4	Project Management Consultant (PMC) efficiently managed the budget, schedule and human resources of the project.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)
5	There were minimal obstacles in operating the project efficiently.	6 (30%)	7 (35%)	6 (30%)	0 (0%)	1 (5%)
6	This project procured tools and equipment that are appropriate for the level of technical knowledge and skill in target areas.	7 (35%)	9 (45%)	3 (15%)	1 (5%)	0 (0%)

3. Effectiveness

No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project achieved its stated objectives.	11 (55%)	7 (35%)	2 (10%)	0 (0%)	0 (0%)
2	The project's expected outputs matched the actual outputs.	9 (45%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)
3	There were minimal defective materials procured through the project.	3 (15%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)
4	Procured equipment was used according to their intended purposes.	9 (45%)	8 (40%)	3 (15%)	0 (0%)	0 (0%)

5	There is ongoing technical support for staff who attended capacity training sessions.	6 (30%)	7 (35%)	6 (30%)	0 (0%)	1 (5%)
6	This project demonstrated overall effectiveness with regards to budget, organization and management.	7 (35%)	9 (45%)	3 (15%)	1 (5%)	0 (0%)
7	This project was effective in taking care of unexpected risk factors.	4 (20%)	15 (75%)	0 (0%)	0 (0%)	0 (0%)
8	This project effectively reduced maternal mortality rates.	2 (10%)	6 (30%)	10 (50%)	0 (0%)	1 (5%)
9	This project contributed to mitigating gender discrimination and promoting gender equality.	7 (35%)	7 (35%)	4 (20%)	1 (5%)	0 (0%)
10	The project's strategy for improving the environment contributed to Mongolia's existing environmental policies and protection efforts.	9 (45%)	10 (50%)	1 (5%)	0 (0%)	0 (0%)

4. Impact

No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project improved Mongolia's public health infrastructure, its citizens' quality of life and reduced VBD disease burden.	9 (45%)	9 (45%)	1 (5%)	1 (5%)	0 (0%)
2	This project fostered community development in target areas of Mongolia.	6 (30%)	12 (60%)	2 (10%)	0 (0%)	0 (0%)
3	This project impacted not only the communities targeted for intervention but their neighboring communities as well.	5 (25%)	13 (75%)	2 (10%)	0 (0%)	0 (0%)
4	There is continued enthusiasm regarding prevention and treatment of VBD diseases after project completion.	9 (45%)	9 (45%)	2 (10%)	0 (0%)	0 (0%)
5	There is noticeable improvement with regards to awareness of VBD diseases and their treatment methods at all levels of society.	5 (25%)	12 (60%)	3 (15%)	0 (0%)	0 (0%)

6	This project allowed more opportunities for women and improved their social status and influence.	2 (10%)	11 (55%)	5 (25%)	1 (5%)	0 (0%)
7	This project implemented environment-friendly activities to prevent pollution.	9 (45%)	6 (30%)	5 (25%)	0 (0%)	0 (0%)

5. Sustainability

No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	This project achieved its long-term and midterm objectives laid out during its planning stage.	8 (40%)	11 (55%)	0 (0%)	0 (0%)	0 (0%)
2	This project contributed to capacity building and policy development in Mongolia to ensure sustainability.	8 (40%)	10 (50%)	1 (5%)	0 (0%)	0 (0%)
3	This project resulted in Mongolia establishing its own national VBD policy to continue and expand positive outcomes realized through the project.	7 (35%)	9 (45%)	2 (10%)	1 (5%)	0 (0%)
4	This project had an appropriate exit strategy.	3 (15%)	11 (55%)	4 (20%)	1 (5%)	0 (0%)
5	Mongolian government agencies had a procedure for resupplying and repairing tools and equipment procured through project funding.	1 (5%)	5 (25%)	9 (45%)	2 (10%)	2 (10%)
6	The project's overall objectives incorporated long-term environmental sustainability.	5 (25%)	10 (50%)	3 (15%)	0 (0%)	1 (5%)

<Annex 5. Community Awareness Survey>

Questionnaire for surveillance of tick-borne diseases

I. Demographic Characteristics

Questions	Answer	Step
First Name (Write)		1
Last Name (Write)		2
Age (Write)		3
Sex (Circle)	Male .....1 Female.....2	4
Education (Circle)	Not Educated.....1 Primary (1-3 grade).....2 Secondary(4-9 grade).....3 Secondary education(11 grade).....4 Professional.....5 High.....6	5
Work (Write)		6
Province (Write)		7
Name of Soum (Write)		8
Home Address (Write)		9
Type of Residence (Circle)	Permanent Residence .....1 Temporary Residence.....2 Other.....3	10

II. Knowledge Questionnaire:

Questions	Answer	Step
Are you familiar with the transmission route of tick-borne diseases? (Circle)	It is transmitted by tick.....1 It is transmitted by air.....2 It is transmitted by animal contact.....3 Don't know.....4	11
Do you know how to protect yourself from tick borne diseases? (Circle)	It is best not to be bitten.....1 Use protective clothes.....2 Other .....3 Don't know.....4	12
Do you get vaccine against tick borne encephalitis? (Circle)	Yes.....1 No.....2	13
How do you remove tick if you are bitten? (Circle)	Remove by shaking.....1 Other .....2 Don't know.....3	14
Through what medium do you get information regarding tick borne diseases? (Circle)	By TV.....1 By radio.....2 By newspaper.....3 From medical organization.....4 From medical officer.....5 Internet.....6 From friends.....7 Through speakers.....8 Don't get information.....9	15

III. Attitude and Risk:

Questions	Answer	Step
Do you regularly go to nearby forests? (Circle)	Yes.....1 No.....2	19
If yes, why do you go? (Circle)	To collect nuts and fruits.....1 For lumbering.....2 For gold mining.....3 To collect medical herb.....4 For herding.....5 For hays.....6 For traveling.....7 Other.....8 Never go to forests.....9	20
How often do you go to forests? (Circle)	Once.....1 2-3 times.....2 4-5 times.....3 More than 6 times.....4	21
Do you check your body for ticks when you are in the forest? (Circle)	Yes.....1 No.....2	
Have you ever been bitten by ticks? (Circle)	Yes.....1 No.....2 Don't remember.....3	
If yes, where was the most recent place you were bitten by ticks? (Circle)	In the forest.....1 In the herd.....2 In hay.....3 From animal wool contact.....4 Other.....5 Don't know.....6	

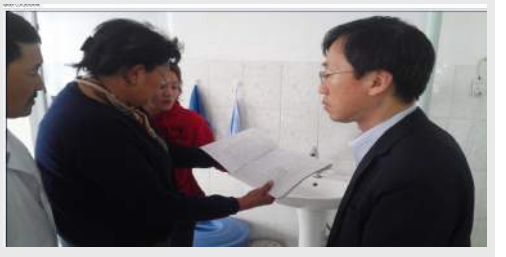
Do you have domestic animals? (Circle)	Dog.....1 Cat.....2 Other.....3 I don't.....4	
Did you develop any symptoms after tick bites? (Circle)	Fever.....1 Headache.....2 Muscle ache.....3 Body rash.....4 Ring rash.....5 Stiff sickness.....6 Other.....7	
Did you visit the doctor after you developed symptoms? (Circle)	Yes.....1 No.....2	

<Annex 6. Field Assessment Pictures>

-First Field Assessment

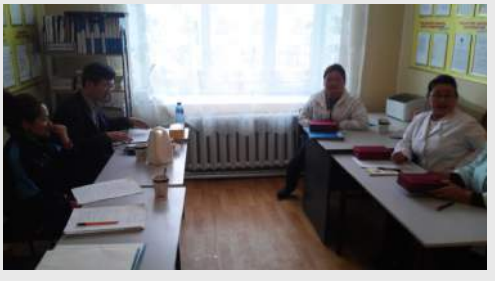
Visiting Center for Zoonotic Diseases, Selenge Branch



Visiting Khuder Soum Hospital


Visiting Altanbulag Soum Hospital

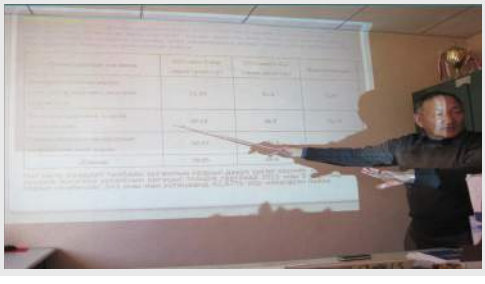



Visiting National Center for Zoonotic Diseases

Interviews with Mongolian Ministry of Health and the WHO

-Second Field Assessment

Visiting Center for Zoonotic Diseases, Gobi-Altai branch

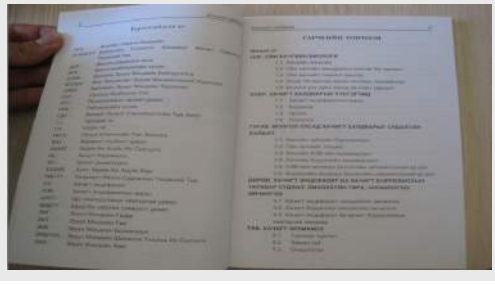


Visiting Tonkhil Soum Hospital




Project-related pictures



Visiting KOICA Mongolia Office - Meeting with the WHO Technical Officer

International Workshop (Reporting for Evaluation)

Joint Evaluation Report on the Project for Strengthen Control of Vectorborne Diseases to Lessen the Impact of Climate Change in Mongolia

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