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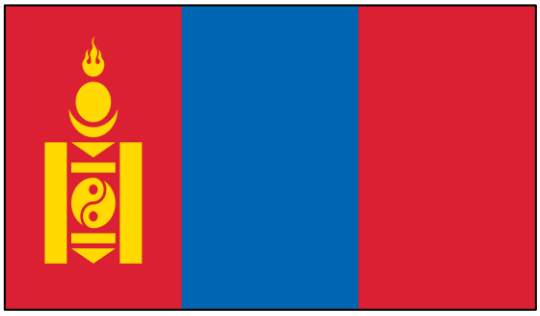

National Bridging Workshop on the International Health Regulations (IHR) and the Performance of Veterinary Services (PVS) Pathway

15-17 June 2022

Ulaanbaatar, Mongolia

Organized by MoH, MoFALI, WHO, FAO and WOAH

Acknowledgments

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ABBREVIATIONS & ACRONYMS

AI	Avian Influenza
AMR	Antimicrobial Resistance
ATLASS	FAO Assessment Tool for Laboratories and Antimicrobial resistance Surveillance Systems
DG	Director General
DPM	Deputy Prime Minister
EOP	Emergency Operation Point
FAO	Food and Agriculture Organization of the United Nations
FP	Focal Point
GASI	General Agency for Specialized Inspection
GAVS	General Authority for Veterinary Services
HQ	Headquarters
IHR	International Health Regulations (2005)
IT	Information technology
JEE	Joint External Evaluation
MEF	Monitoring and Evaluation Framework
MoET	Ministry of Environment and Tourism
MoFALI	Ministry of Food, Agriculture and Light Industry
MoH	Ministry of Health
MoU	Memorandum of Understanding
NAPHS	National Action Plan for Health Security
NBW	National Bridging Workshop
NCCD	National Center for Communicable Diseases
NCPH	National Center for Public Health
NCZD	National Center for Zoonotic Diseases
NEMA	National Emergency Management Agency
PH	Public Health
PHEIC	Public Health Event of International Concern
PVS	Performance of Veterinary Services
SCVL	State Central Veterinary Laboratory
SDGs	Sustainable Development Goals
SOP	Standard Operating Procedures
SPAR	State Party Self-Assessment Annual Report
TOR	Terms of Reference
TWG	Technical Working Grup
WCS	Wildlife Conservation Society
WHO	World Health Organization
WOAH	World Organisation for Animal Health

INTRODUCTION

BACKGROUND

- The World Health Organization (WHO), the World Organisation for Animal Health (WOAH) and the Food and Agriculture Organization (FAO) are the main international organizations responsible for proposing references and guidance for the public health and animal health sectors respectively. The Tripartite has been active promoters and implementers of an intersectoral collaborative approach between institutions and systems to prevent, detect, and control diseases among animals and humans.

- WHO Member States adopted a legally binding instrument, the International Health Regulations (IHR, 2005), for the prevention and control of events that may constitute a public health emergency of international concern. Various assessment and monitoring tools have been developed by WHO such as the IHR Monitoring and Evaluation Framework (MEF), which includes inter alia the State Party Self-Evaluation and Annual Reporting (SPAR) and the Joint External Evaluation (JEE) Tool.

- WOAH is the international organisation responsible for developing standards, guidelines and recommendations for animal health and zoonoses; these are laid down in the WOAH Terrestrial and Aquatic Animal Health Codes and Manuals. WOAH has also developed the Performance of Veterinary Services (PVS) Pathway, which is composed of a range of tools to assist countries in the evaluation of the capacities of their veterinary services and in addressing the main weaknesses.

- The FAO promotes One Health through works on food security, sustainable agriculture, food safety, antimicrobial resistance (AMR), nutrition, animal and plant health, fisheries, and livelihoods. The application of a One Health approach is critical for achieving the UN 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs).

- The WHO IHR-MEF and the WOAH PVS Pathway approaches provide the ability for countries to determine strengths and weaknesses in their respective functions and promote prioritization and pathways for improvement. Furthermore, they engage countries in a routine monitoring of their overall level of performance and help to determine their needs for compliance with internationally adopted standards.

- The joint use of WHO IHR-MEF tools and PVS Pathway can result in better alignment of capacity building approach and strategies between human and animal health services of a country. The IHR-PVS National Bridging Workshop (NBW) is a three-day workshop which brings together stakeholders from different sectors to work on the linkages between these frameworks and develop joint planning to improve their collaboration.

- The workshop follows a methodology developed by WHO and WOAH and tested in more than thirty countries. The method used is very dynamic and interactive, based on group exercises with a gamified

approach and user-friendly materials which enables the identification of synergies, the review of gaps and the development of a joint roadmap between the two sectors.

In Mongolia,

- a PVS Evaluation Follow-up mission was conducted in 2019
- a Joint External Evaluation (JEE) was conducted in 2017

OBJECTIVES OF THE WORKSHOP AND EXPECTED OUTCOMES

The main objectives of the IHR-PVS NBW are to provide an opportunity to human health, animal health and environmental services of hosting countries to review their current collaboration gaps in key technical areas of One Health. Next, to develop a joint road-map of corrective measures and strategic investments to improve the collaborative work at the animal-human-environmental interface in the prevention, detection and control of zoonotic diseases, food-safety and control of antimicrobial resistance.

In this Mongolian NBW, representatives from the environmental sector were involved with the preparations and actively participated during the three-day workshop. Inclusion of the environmental sector was considered appropriate in the Mongolian context.

The IHR-PVS NBWs focus on the following strategic objectives:

- Increased awareness and understanding on the IHR-MEF and the WOAH PVS Pathway, their differences and connections;
- Understanding of the contribution of the veterinary services in the implementation of the IHR (2005) and how the results of the PVS Pathway and IHR-MEF can be used to explore joint strategic planning;
- **Diagnosis of current strengths and weaknesses** in the collaboration between animal, human health and environmental services for 15 key technical areas;
- **Identification of practical next steps** and activities and development of a joint national roadmap to strengthen collaboration and coordination between the three sectors.

The agenda of the Workshop is available at Annex 1.

The NBW roadmap poster illustrates the processes in which actors from relevant sectors joint efforts to go through the IHR-PVS NBW to achieve the development of a a joint One Health workplan

REPORT ON THE SESSIONS

From 15 to 17 June 2022, the National Bridging Workshop (NBW) on the International Health Regulations (IHR) and the Performance of Veterinary Services (PVS) Pathway for Mongolia was held in Ulaanbaatar. The Workshop was hosted at the kind invitation of the Government of Mongolia, with organizational support from WHO, FAO and WOAH.

The Workshop was attended by 118 participants from key national institutions addressing One Health actions (MoH, NCZD, GAVS, SCVL, MoFALI, MoET, WCS, among others) as well as representatives of provincial and local district levels. The workshop used an interactive methodology and a structured approach with user-friendly material, case studies, videos and facilitation tools. All participants received a *Participant Handbook* which comprised of all necessary information such as the objectives of the workshop, instructions for working group exercises, expected outcomes of each session etc. Sessions were structured in a step-by-step process as follows:

OPENING SESSION

Welcoming of the participants and opening remarks were provided by Dr B. **Bayardbold** (Head of Public Health Department, MoH), Dr L. **Enkhsaikhan** (Head of Infectious Disease Department, MoH), Dr T. **Gangtogtokh** (Director of Administration Division -MOFALI), Dr D. **Batchuluun** (Director General /Chief Veterinary Officer, GAVS), Dr N. **Tsogbadrakh** (General Director of NCZD), Dr J. **Kayamori** (Regional Office for Western Pacific, WHO), Dr H. **Kugita** (Regional Representative for Asia and the Pacific, WOAH) and Dr V. **Ahuja** (FAO Country Representative of Mongolia).

They highlighted the importance of the One Health approach and much needed fruitful collaboration between Human, Animal and Environmental health, identifying gaps in order to progress towards a better coordination, collaboration, and development of a One Health roadmap to build the sustainable bridge between the sectors. Everyone highlighted that the NBW was organized on right time and expressed the strong need to strengthen coordination and collaboration amongst the key sectors to better manage future pandemics based on the lessons learnt from COVID-19 pandemic, large die-off of Saiga antelopes in Mongolia, and prevention and control of important zoonotic diseases like brucellosis, rabies, anthrax and zoonotic avian influenza virus affecting Mongolia.

SESSION 1: THE ONE HEALTH CONCEPT AND NATIONAL PERSPECTIVES

A documentary video introduced the One Health Concept, its history, rationale and purpose and how it became an international paradigm. The video also introduced the workshop in the global and national context by providing high level background information on the collaboration between WHO, WOAH and FAO.

The workshop approach and methodology were explained, and the participant handbook was presented.

Three key sectors in Mongolia presented their structure, priorities and challenges, as well as ongoing One Health activities and collaboration as follows:

Human health services and One Health:

Dr N. **Tsogbadrakh** (NCZD) presented on the unique situation of Mongolia, highlighting that it was a high-risk zone for emerging infectious diseases (EIDs) with a very wide territory and 30 times more animals than human beings. Priority diseases have been identified, with 7 endemic, 12 imported and 26 neglected ones. Dr Tsogbadrakh presented charts and maps showing the impact of zoonotic diseases over the recent years. The structure of the human health services of Mongolia were then described, as well as some examples of how One Health approach is being used at the provincial level through joint surveillance, joint response and joint scientific work to name a few.

Veterinary services and One Health:

Dr D. **Batchuluun** (GAVS) presented the figures relative to the livestock populations in Mongolia. He then described the chronology of One Health initiatives in Mongolia since 2010, as well as the priorities that have been identified for the future, regarding information sharing, central laboratories, database for pesticides and additives, drug registration and certification, antimicrobial use, surveillance and risk assessment. Priority zoonotic diseases such as anthrax, rabies, brucellosis were touched upon and a rapid situation review (epidemiological update, ongoing activities and future plans) was given for each one.

Environmental services and One Health:

Dr P. **Tsogtsaikhan** (Division of Fauna, Flora and Natural Resources, MoET) started by presenting the structure of the departments and workforce of the environmental services under the Ministry of Environment and Tourism. The environmental specificities of Mongolia were discussed, including the incredible fauna diversity and the large populations of some wildlife species, such as Saiga antelopes, highlighting once again the unique context of the country. The high level of interactions between humans, livestock, wild animals and the environment, means that a good balance of the ecosystem is essential to sustain a healthy environment for humans and animals alike. The case study of a recent massive die-off of Saiga antelopes and its ongoing investigation was then presented.

A second documentary video provided participants with concrete worldwide examples of intersectoral collaboration in addressing health issues at the human-animal interface.

Outcomes of Session 1:

At the end of the session, the audience agreed that:

- Multisectoral collaboration between animal and human health sectors happens, but mainly during outbreaks; with a better coordination mechanism and preparedness, much more could be done at the human-animal-environment interface.
- The three sectors have common concerns and challenges and conduct similar activities. Competencies exist and can be pooled. This needs to be organized though a collaborative approach;
- WHO, WOAH and FAO are active promoters of One Health and can provide technical assistance to countries to help enhance inter-sectoral collaboration at the central, local and technical levels.

SESSION 2: NAVIGATING THE ROAD TO ONE HEALTH – COLLABORATION GAPS

Participants were divided into six working groups of mixed participants from different sectors and levels (Central, Provincial, District). Groups were provided with a case study scenario (Table 1) based on diseases relevant to the local context (Brucellosis, Salmonellosis, Rabies, Anthrax, Disease X and AMR) developed in collaboration with national representatives.

Table 1: Scenarios used for the different case studies

1. Brucellosis During the last month three dairy cows all belonging to a herder in Selenge aimag aborted. The private vet applied a Milk Ring Test on the three animals which had aborted and found them all to be positive for Brucellosis. Concurrently, a local health center reported that few herders came with undulating fever, chronic headache, back pain and general weakness. Two persons amongst the patients tested positive to Brucella using Rose Bengal test.
2. Salmonellosis Ninety people in Erdenet sought medical attention when they suffered high fever, nausea, diarrhea and severe abdominal pain, 12-36 hours after eating breakfast at a prominent hotel. Of these, 7 (5 children and 2 elderly) were hospitalized. All recovered within a week. The Managing Director of the hotel said that it sourced its eggs from a reputable supplier, and that the hotel stored its eggs according to food safety standards.

3. Rabies

A case of rabies which was confirmed in a dairy cow recently inseminated and regularly milked, causes panic in the Arvaikheer. A stray dog which was known to have bitten two cows and was behaving aggressively towards people was reported to have bitten some children in the same area. It was shot dead by Police in outskirts of Arvaikheer two days ago. The carcass of the dog was destroyed before the Aimag Veterinary authorities were able to take the head of the dog for confirmation of diagnosis.

4. Anthrax

Nine people are showing identical anthrax-like lesions reported in a soum hospital close to a border post. One of these patients is a worker at the local meat processing establishment. The typical signs observed were cluster of blisters with swelling around the sore and itching sensation, painless skin ulcers characterized by typical black center (eschar) that appeared after developing blisters.

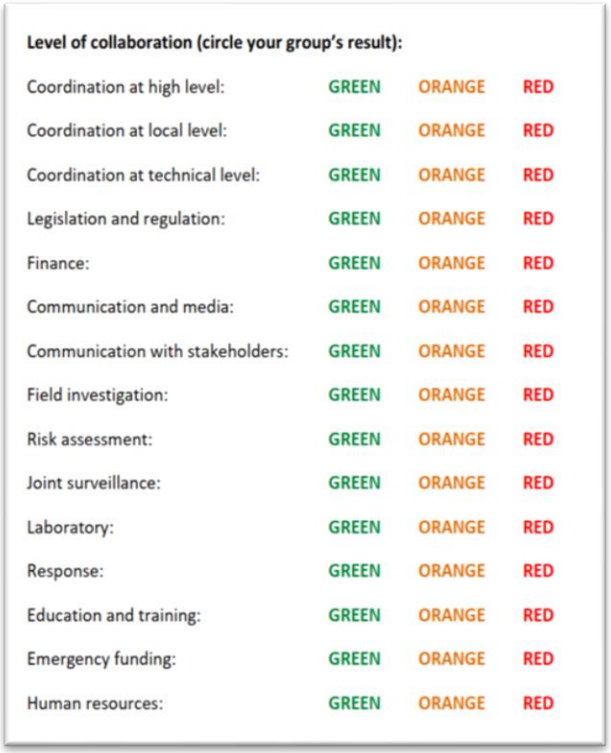
5. Disease X (wildlife Saiga die-off and reports of sick people who are in contact)

During Naadam holidays (July), multiple posts in social media appear with images of dead and decomposing carcasses of Saiga in the natural habitat of Saiga covering parts of Gobi-Altai, Khovd and Uvs. These posts spread very quickly. While Saiga die-off has been reported earlier, recently small ruminants have also died of similar symptoms, including a farmer who has died of hemorrhagic and unusual pneumonia symptoms. The community health worker who treated the farmer is now experiencing similar symptoms and has been isolated at the Khovd province's Regional Diagnostic and Treatment Center hospital. Testing for known pathogens were all negative. News media reported that the local people are scared about risks to their health.

6. Antimicrobial Resistance (AMR)

National Center for Communicable Diseases Laboratory is detecting increasing number of co-occurrence of Colistin Resistance (mcr-1) and extended-spectrum β-lactamase encoding genes in *Escherichia coli* isolated from urinary tract infection in humans in Ulaanbaatar city. A veterinary laboratory in UB also reported increasing number of similar resistance pattern in E. coli associated mastitis in dairy cow in two commercial dairy farms located in UB.

Using the experiences from previous outbreaks of zoonotic diseases, the groups discussed how they would have realistically managed these events, and evaluated the level of collaboration between the veterinary and the public health services for 15 key technical areas: coordination, investigation, surveillance, communication, etc. These activities/areas of collaboration were represented by color-coded *technical area cards*: green for "good collaboration", yellow for "some collaboration", and red for "collaboration needing improvement" (Figure 1).



Level of collaboration (circle your group's result):

Coordination at high level:	GREEN	ORANGE	RED
Coordination at local level:	GREEN	ORANGE	RED
Coordination at technical level:	GREEN	ORANGE	RED
Legislation and regulation:	GREEN	ORANGE	RED
Finance:	GREEN	ORANGE	RED
Communication and media:	GREEN	ORANGE	RED
Communication with stakeholders:	GREEN	ORANGE	RED
Field investigation:	GREEN	ORANGE	RED
Risk assessment:	GREEN	ORANGE	RED
Joint surveillance:	GREEN	ORANGE	RED
Laboratory:	GREEN	ORANGE	RED
Response:	GREEN	ORANGE	RED
Education and training:	GREEN	ORANGE	RED
Emergency funding:	GREEN	ORANGE	RED
Human resources:	GREEN	ORANGE	RED

Figure 1: Participants working on a case study scenario and evaluating the level of collaboration between the sectors for 15 key technical areas.

During a plenary session, each group presented and justified the results of their work. Output 1 summarizes the results from the five diseases and AMR groups. We can see that for the four known diseases (brucellosis, anthrax, salmonellosis and rabies) there is a good distribution of colors, highlighting that some ad-hoc collaboration is ongoing in the case of these diseases, but several areas require improvements. Disease X shows significantly more gaps, this could be due to the stronger involvement of the environmental sector in this scenario, and the fact that collaboration mechanisms with this sector remain insufficient. Lastly, almost all technical areas were scored as a red for AMR. This may be explained by the fact that this is a newer issue at the human-animal-environment interface compared to the zoonotic diseases and highlights the urgency to address the gaps in this domain.

Outcomes of Session 2:

- Areas of collaboration were identified and joint activities discussed.
- Level of collaboration between the two sectors for 15 key technical areas was assessed (Output 1).
- The main gaps in the collaboration were identified.

SESSION 3: BRIDGES ALONG THE ROAD TO ONE HEALTH

Documentary videos introduced the international legal frameworks followed by human health (IHR 2005) and animal health (WOAH standards) as well as the tools available to assess the country's capacities: the annual reporting and JEE tools for public health services and PVS Pathway for veterinary services. The differences and connections between these tools were explained. A large matrix (IHR-PVS matrix), cross-connecting the indicators of the IHR MEF (in rows) and the indicators of the PVS Evaluation (in columns) was set-up and introduced to the participants (Figure 2).

Through an interactive approach, working groups were invited to plot their *technical area cards* onto the matrix by matching them to their corresponding indicators. A plenary analysis of the outcome showed clear gap clusters and illustrated that most gaps were not disease-specific but systemic.

Figure 2: Mapping of the gaps by positioning the selected technical area cards on the IHR-PVS matrix.

The main gaps (clusters) identified were discussed, this time on a systemic level (all diseases combined). Overall, we could see that only two areas scored (slightly) above average: field investigation and laboratory. This highlights the fact that there are significant gaps in the collaboration across most technical areas. Notably, some key areas such as finance, coordination at the high level, risk assessment and education and training gathered the lowest scores, with almost exclusively red cards.

New working groups were made for the second half of the workshop, this time by technical area, to try and cover all aspects of collaboration where improvement is needed:

- Group 1: Coordination, Legislation and Finance
- Group 2: Surveillance and Laboratory
- Group 3: Response and Field Investigation
- Group 4: Risk communication and Risk assessment
- Group 5: Human resources, Education and Training
- Group 6: AMR

Outcomes of Session 3:

- Understanding that tools are available to explore operational capacities in each of the sectors was improved.
- Understanding of the contribution of the veterinary sector to the IHR was improved.
- Understanding of the bridges between the IHR MEF and the PVS Pathway was improved. Reviewing together the results of capacities assessment might help in identifying synergies and optimize collaboration.
- Understanding that most gaps identified are not disease-specific but systemic was ascertained.
- Identified the broader but related technical areas to focus on during the next sessions.

SESSION 4: CROSSROADS – PVS PATHWAY AND IHR MEF REPORTS

New working groups with representation from all previous groups were organized for each of the six priority technical areas (Figure 3).

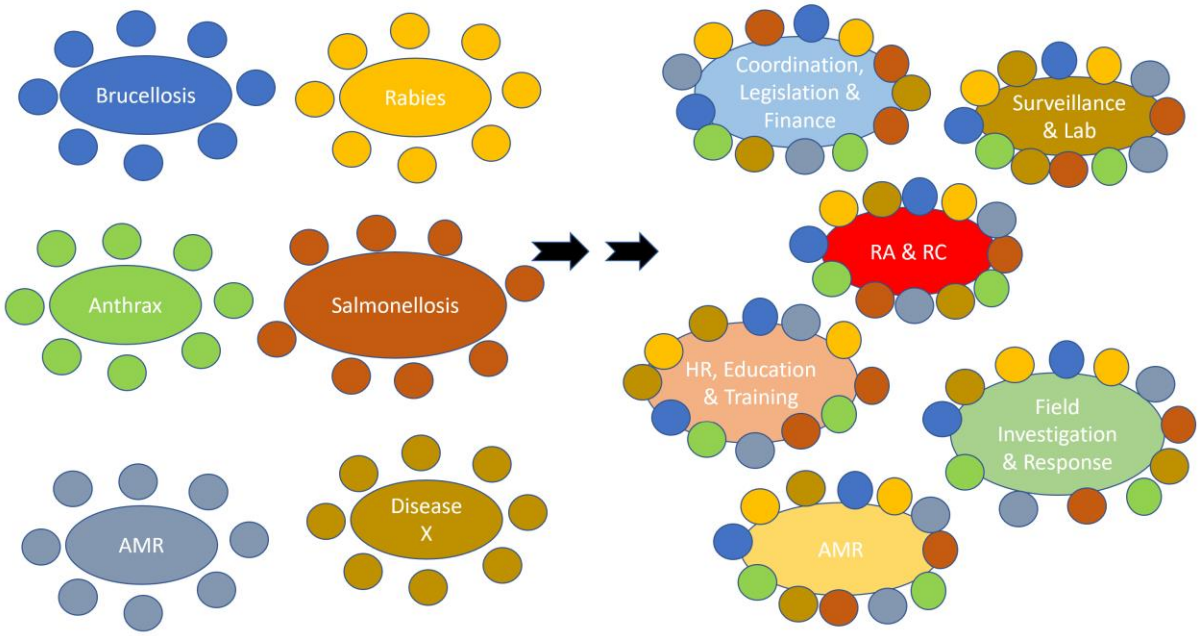


Figure 3: Generic graph describing the organization of working groups for Session 2-3 (left) and Session 4-5 (right).

The matrix was used to link the identified gaps to their relevant indicators in the IHR MEF and in the PVS Pathway. Each working group then opened the assessment reports (JEE, PVS Evaluation) and extracted the main findings and recommendations relevant to their technical area (Figure 4).

Figure 4: Participants extracting results from the PVS and JEE reports.

Outcomes of Session 4:

- Participants got a good understanding of the assessment reports for different sectors, their purpose and their structure.
- The main gaps relevant to each technical area and related to coordination and collaboration between sectors were extracted.
- Similarly, main recommendations from the existing reports were extracted

SESSION 5: ROAD PLANNING

Using the same working groups as for the previous session, participants were asked to identify, for each technical area, up to 7 priority activities that the sectors should implement in order to improve their collaboration in the future. This brainstorming used several items as information sources:

- the report sheets from Session 2, which highlight the key gaps for all technical areas and for the different diseases / case studies used;
- the key gaps and recommendations extracted from the JEE and PVS reports during Session 4;
- the technical activity cards, which give several examples of possible joint activities;
- the experiences of all the participants in working on a daily basis in the human health, veterinary and environmental health sectors of Mongolia.

Figure 5: The group working on "Human Resources and Training" is using the results of the previous sessions to identify joint activities to improve the collaboration between the three sectors in this domain.

Outcomes of Session 5:

- Clear and achievable activities were identified to improve multisectoral collaboration between the three sectors for all discussed technical areas.

SESSION 6: FINE-TUNING THE ROADMAP

After activities had been discussed and validated with international and national facilitators, participants were asked to fill the *Activity Cards* for each activity, detailing the desired date of implementation, the responsible lead focal points, as well as the detailed process of implementation of each activity, the importance of the identifying an activity that is as operational as possible, with very clear and precise actionable steps (Figure 6).

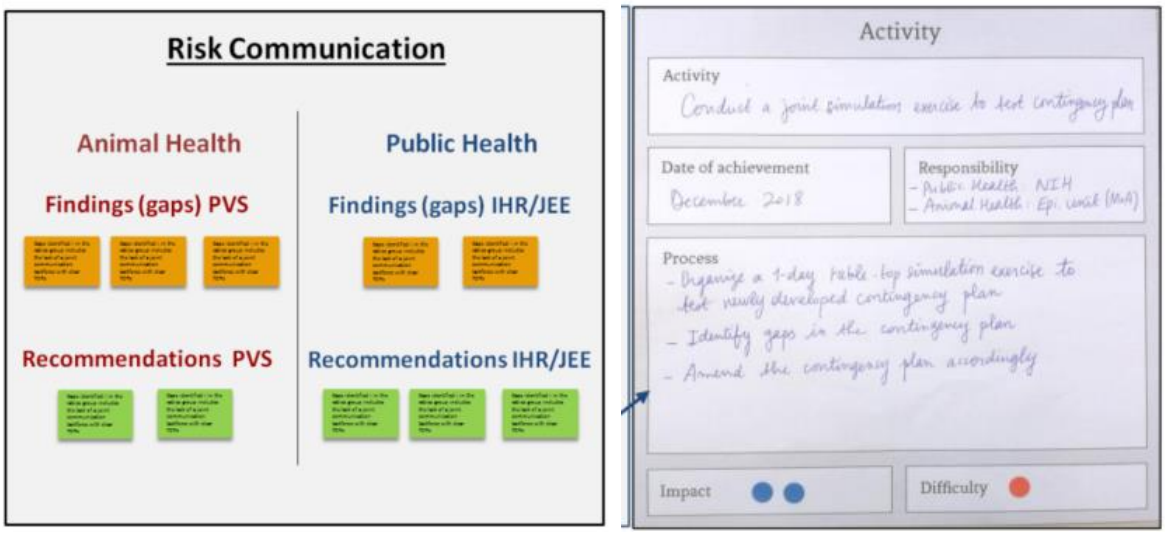


Figure 6: Examples of extraction of gaps and recommendations from PVS country evaluation report and JEE country report and identification and development of activities

The difficulty of implementation and the expected impact of each activity were evaluated using red and blue stickers respectively using a semi-quantitative scale (1 for less difficult to implement or less impact to 3 for most difficult to implement or high impact).

Activity cards that were linked (by theme, or by process) were then regrouped under one *Objective card*, to start structuring the roadmap. For example, Activity 6.1 on "Establishing joint surveillance teams[…] for chemical contamination" and Activity 6.2 on "Developing integrated surveillance protocols for chemical contaminants and conduct training to members" were regrouped under a common Objective "To initiate and institutionalize integrated surveillance for chemical contaminants".

A World Café exercise was then organized to enable participants to contribute to the action points of all technical areas (Figure 6). Each group nominated a rapporteur whose duty was to summarize the results of their work to the other groups. Each group rotated between the different boards to contribute and provide feedback on all technical areas. Rotating groups used the post-it note pad to leave their comments on the objectives and activities of other groups when they felt that an amendment or a clarification was necessary.

At the end of the World Café, each group returned to their original board and the rapporteur summarized the feedback received. Groups were given 20 minutes to address changes or additions suggested by the other participants. Objectives and activities were fine-tuned accordingly.

Overall, the six groups identified a total of 15 key objectives and 37 activities. The detailed results are presented in Output 2.

Prioritization of Objectives

To prioritize the objectives identified by the technical working groups, participants were given five small white stickers each, to identify which five objectives (and their constituting activities) they considered as of highest priority.

A total of 84/114 (73.7%) participants voted. The result of the prioritization is shown in Figure 8. The top three objectives voted are to institutionalize and enhance integrated surveillance for zoonotic diseases (74%), to enhance the high-level coordination for risk assessment and risk communication (74%) and to institutionalize One Health governance and coordination at national and subnational levels (57%). Full results of the vote can be found in Output 3.

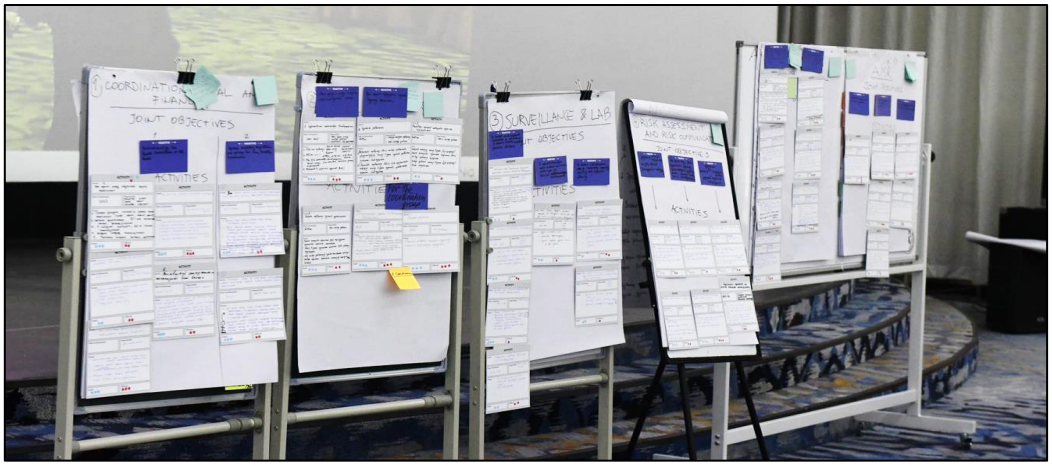


Figure 7: The final roadmap is displayed, and participants could vote for the five objectives they believe are of highest priority

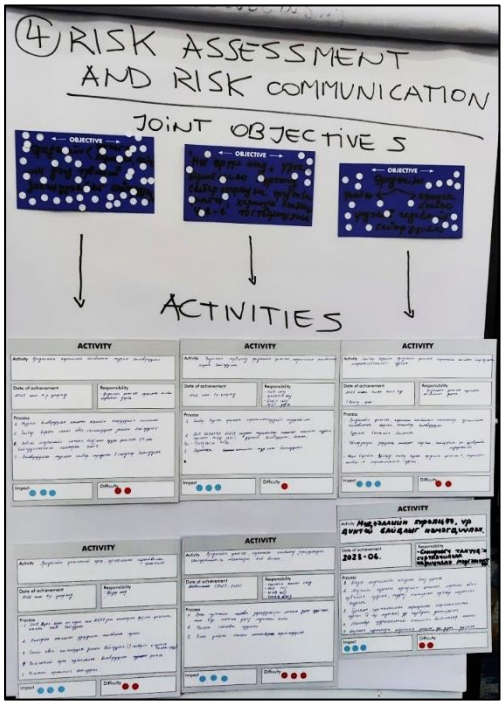


Figure 8: Example of the Roadmap section on 'Risk assessment and Risk communication', which is composed of 3 objectives and 6 activities.

Outcomes of Session 6:

- A harmonized, concrete and achievable roadmap to improve the coordination and collaboration between the animal health, human health and environmental sectors in the prevention, detection and response to zoonotic diseases and food safety outbreaks as well as AMR was developed.
- Buy-in and ownership of all participants who contributed to all areas of the roadmap was confirmed.
- Prioritization of the activities was conducted.

SESSION 7: WAY FORWARD

Results of the prioritization vote were presented and discussed. A final plenary session was organized to discuss on the way forward, and to give all participants a chance to express themselves on the resulting roadmap and how they seemed would be the best way to start its implementation. This session was entirely facilitated by national stakeholders.

Dr Enkhtuvshin Shiilegdamba, Country Program Director of Wildlife Conservation Society of Mongolia provided a brief presentation on 'Guidelines for the Control and Prevention of Peste des Petits Ruminants (PPR) in Wildlife Population.'

Furthermore, a brief presentation was made by Mr Sitaramachandra Machiraju, Senior Agriculture Economist, Agriculture and Food Global Practice, East Asia and Pacific Region of The World Bank and highlighted the importance of One Health in mitigating risk of emergence of future pandemics as well as controlling zoonotic diseases that have huge socio-economic impact. In addition, he emphasized the need to generate evidence on risks and drivers of emerging infectious diseases and build robust One Health system in Mongolia. He also stated that The World Bank is interested to support funding in the implementation of One Health activities in Mongolia.

Key points discussed and expressed by the participants were:

- Every participant expressed the satisfaction with the workshop stating that the NBW was organized at right time in highlighting the value of One Health given the lessons learnt from COVID-19 pandemic.
- The need to strengthen multisectoral coordination and collaboration in Mongolia was emphasized given Mongolia is also identified as high-risk 'hotspot' for emerging zoonotic diseases given huge livestock population (~70 million) and prevalence of many zoonotic diseases, and recent reports of large die-off of Saiga antelopes.
- A very good and realistic One Health roadmap was developed through this workshop and everyone should try to implement these activities to obtain tangible results.
- A strong foundation of One Health was laid since 2010 when a MoU was signed between human health and animal health to work together for prevention and control of zoonotic avian influenza in the wake of epidemic outbreaks of H5N1 virus. Subsequently, the two sectors

worked in collaboration for other zoonotic diseases like anthrax, brucellosis, rabies, etc. However, the coordination and collaboration is not optimal and effective and this must be strengthened in future.

- Importance of strengthening One Health approach at field levels (province, Aimag and Soum levels) was also emphasized.
- The importance of operationalizing One Health approach in food safety has also been highlighted.
- The environment sector informed that it was the first workshop on One Health for them and realized the importance of One Health not only for protection of human and animal health but also wildlife conservation and environment health.
- Everyone expressed the need to review regulations and amend them to incorporate enabling legislations and regulations to make multisectoral One Health approach legally binding. This will enable all sectors to cooperate and work together effectively.
- The need to amend Regulation No. 08 related to disaster management including disaster related to PHEIC events and outbreaks of epidemic diseases was emphasized.
- Measures taken to address and reduce the development and spread of AMR are relatively new and not many policy and decision makers understand its impact. This is true to most scientists and professionals also. Therefore, the need to rigorously implement Mongolia's multisectoral national action plan on AMR (MNAP 2022-2025) using One Health approach was highlighted.The floor was informed of ATLASS (FAO Assessment Tool for Laboratories and Antimicrobial Resistance Surveillance Systems) meeting take place in the subsequent week.

Outcomes of Session 7:

- Way forward for the implementation of the roadmap was presented and discussed.
- Ownership of the workshop results by the country was confirmed.

CLOSING SESSION

Three speakers, Dr P.Tsogtsaikhan, Director of Division of Fauna, Flora and Natural Resources from MET, N.Tsogbadrakh, Director General of NCZD, and Dr Batsukh Basan, Head of Veterinary Hygiene and Assurance Department of GAVS provided the workshop closing remarks.

Following were the gist of closing remarks made by the three speakers:

- They extended the appreciation and gratitude of Government of Mongolia to WHO, WOAH, and FAO for supporting the organization of the NBW, and thanked the international facilitators for providing excellent technical expertise and facilitation of the workshop, local organizers of the workshop, interpreters, IT experts, and participants for actively participating in the workshop, and coming up with the excellent roadmap for One Health capacity building in Mongolia.

- They also extended their appreciation and thanks to the funders of the NBW such as WHO, WOAH, FAO, Livestock Commercialization Project, Japan Trust Fund, and The World Bank.
- The workshop was organized at a right time as One Health approach is gaining worldwide importance, particularly due to COVID-19 pandemic.
- Over the three-day workshop, everyone from central and subnational levels, particularly professionals working in the field have gained same level of understanding of One Health and its importance to effectively mitigate the risk of future pandemics and in prevention and control of zoonotic diseases and food safety outbreaks as well as AMR.
- Everyone worked hard to build the excellent One Health roadmap for strengthening One Health capacity in Mongolia and everyone from all the sectors must make concerted efforts to work together.
- The NBW has enabled to build network amongst professionals from different sectors and therefore working together will be easier and more effective.
- The establishment of One Health governance through institution of National Multisectoral One Health Committee chaired by the Deputy Prime Minister will enable implementation of the roadmap effective and decisive. There was no multisectoral coordination mechanism for zoonoses at the level of Deputy Prime Minister, and before COVID-19 pandemic the understanding of One Health was much lesser.
- Every participant was urged to spread through their words of mouth on the importance of One Health and how different sectors should work together for prevention and control of zoonotic diseases including other hazards like chemical contamination and food safety.

All the material used during the workshop, including movies, presentations, documents of references, results from the working groups, photos, videos were uploaded on the website of NZCD (accessible at: https://nczd.gov.mn/?p=17587) and the participants were asked to download them from the website.

OBSERVATIONS AND RECOMMENDATIONS FROM THE FACILITATORS

The following observations and recommendations are made by the facilitators:

- A strong foundation of multisectoral coordination and collaboration mechanism has already been laid , particularly between human health and animal health sectors. This mechanism started since 2010 in the wake of outbreaks of highly pathogenic avian influenza. However, no formalized multisectoral governance including engagement of environment and wildlife sector exists currently.
- A strong commitment from all participants of the NBW was visible and a good network amongst professionals from different sectors was developed.
- In the past, the environment and wildlife sectors were not formally engaged in One Health activities except on ad-hoc basis. However, a strong commitment and interest was expressed by the environment and wildlife sector to fully engage in future One Health activities.

- There is a strong need to establish a multisectoral One Health governance system in Mongolia, and should include Aimag and Soum levels that will formalize and sustain One Health initiatives. This initiative was already identified in the Roadmap.
- To operationalize the One Health governance, there is a need to establish a One Health Secretariat with officials appointed from each sector and will serve as secretariat to inter-ministerial committee for One Health that is proposed to be chaired by the Deputy Prime Minister.
- A One Health Strategy Framework or plan needs to be developed to identify and implement One Health activities in a more comprehensive and priority manner, and sustain One Health initiatives.
- Review and amend the relevant policies and legislation to formalize the One Health multisectoral mechanisms.
- The priority activities identified in the Roadmap need to be implemented as soon as possible as to not lose the momentum gained during the NBW, but also because donors and financers are interested to fund One Health activities, borrowing from experiences and lessons learned from the COVID-19 pandemic. The One Health team could use the outputs of the NBW to further apprise their policy makers in the Ministries for mobilization of funds, both from national sources as well as from donors to implement the Roadmap.
- Create an enabling environment by public institutes to change the working environment and inter-institutional arrangements for trained people to use these newly-acquired competencies. When proving difficult, public institutions may use partnerships with private entities, outsourcing certain One Health coordination and collaboration activities in partnership with local and international Quadripartite organizations, WCS and NGOs.

WORKSHOP OUTPUTS

OUTPUT 1: ASSESSMENT OF LEVELS OF COLLABORATION FOR 15 KEY TECHNICAL AREAS

	Brucellosis	Salmonellosis	Rabies	Anthrax	Disease X	AMR	Score
Finance	0	0	0	0	0	0	0
Coordination at high Level	0	0	0	1	0	1	2
Risk assessment	2	0	0	0	0	0	2
Education and training	1	0	1	0	0	0	2
Joint surveillance	1	1	0	1	0	0	3
Human resources	1	0	0	1	1	0	3
Emergency funding	1	1	1	1	0	0	4
Coordination at technical Level	1	0	1	2	1	0	5
Legislation / Regulation	2	2	0	0	0	1	5
Communication w/ media	1	1	1	1	1	0	5
Response	1	1	1	2	0	0	5
Coordination at local Level	1	1	1	2	1	0	6
Communication w/ stakeholders	1	0	1	2	1	1	6
Field investigation	2	1	1	1	2	0	7
Laboratory	2	2	2	2	0	0	8

For each disease, the performance of the collaboration between the human health and the animal health sectors is color-coded: green for "good collaboration", yellow for "some collaboration", and red for "collaboration needing improvement". The score uses a semi-quantitative scale (2 points for a green card, 1 for a yellow card and 0 for a red card).

OUTPUT 2: OBJECTIVES AND ACTIONS IDENTIFIED PER TECHNICAL AREAS (ROADMAP)

Action	Timeline	Difficulty (1-3 scale)	Impact (1-3 scale)	Responsibility	Process
I. COORDINATION AND LEGISLATION					
Objective 1: To institutionalize One Health governance and coordination at national and sub-national levels					
1.1. Establish National One Health Secretariat/ Multisectoral Technical Working Group	2022	+	+++	NZCD of MoH, GAVS of MOFALI, GASI, City Health Department, Environment and Natural Resources Management Department of MoET	a) Identify relevant members for TWG b) Develop TOR and meeting procedures c) Seek approval from the government and issue appointment executive order d) Convene the meeting to brief on TOR and meeting procedures to the members e) Organize meetings f) Develop yearly action plan and assign responsibilities a) Seek budget for meetings and workshops
1.2. Establish National One Health Committee (NOHC)	2022	++	+++	NZCD of MoH, GAVS of MOFALI, GASI, City Health Department, Environment and Natural Resources Management Department of MoET	b) Establish a multisectoral Technical Working Group (NCZD, NCPH, NCCD, GAVS, etc) c) TWG develops NOHC TOR, meeting procedures and government draft decree d) Introduce the proposal for establishment of NOHC to the Deputy Prime Minister and obtain his consent to be the Chair of the NOHC e) Seek the approval of the government f) Issue governmental decree g) Formally establish NOHC h) Organize meetings i) Develop yearly action plan and assign responsibilities j) Seek budget for meetings and workshops
1.3. Establish One Health committee at provincial and county (Soum) levels	2022	++	++	Provincial and Soum level offices of MoH, MoFALI, GASI, Environment and Natural Resources offices	a) Establish a multisectoral TWGs of Provincial and Soum levels b) TWG develops Provincial and Soum OH committee TORs and Meeting Procedures c) Appoint members of One Health Committee d) Organize meetings e) Develop yearly action plan and assign responsibilities f) Seek budget for meetings and workshops
1.4. Develop National One Health Strategy Framework	2022-2023	+++	+++	NZCD of MoH, GAVS of MOFALI, GASI, Environment and Natural Resources Management Department of MoET	a) Seek funding to organize 4-5 day workshop to develop the overall national One Health strategy framework b) Seek international consultant to facilitate the workshop for the development of One Health strategy framework c) Circulate the draft framework to stakeholders for the comment d) Organize 2-day consultative meeting to endorse the framework e) Submit the strategy framework for government approval f) Circulate the approved strategy framework to all stakeholders g) Conduct sensitization workshop at subnational levels

1.5. Create sustainable funding mechanism to implement One Health activities	2022-2023	++	+++	National One Health TWG	a) Develop proposal for yearly budget proposal for conducting essential meetings of One Health committees and TWGs b) Seek government approval for yearly budget to operationalize and sustain One Health Committees meetings and workshop c) Develop project proposals to seek donors as per the strategy plan d) Deliver request to local development funds, ensure funding e) Develop and sign MoU between stakeholders to share budget to collaborative activities
Objective 2: To empower implementation of One Health coordination and collaborative activities through reviewing and developing enabling legal and other instruments					
2.1 Review and harmonize existing legislations related to zoonoses, AMR, food safety, biosecurity, wildlife and environment to improve coordination and implementation of joint activities	2023-2024	++	+++	National One Health TWG	a) Identify key policies and legislations relevant to multi-sectoral or sector specific legislations b) Identify key clauses, review and develop amendment to align it with requirements of One Health multisectoral approach and IHR and PVS c) Submit the amendment for endorsement by the National One Health Committee and approval by the government or parliament d) Circulate the legislation to all stakeholders e) Conduct orientation on new legislations at national and subnational levels f) Ensure One Health is reflected in all the relevant laws for all new legislations
2.2 Develop guidelines on multisectoral coordination and collaboration for wildlife disease prevention and response	2024	++	+++	Environment and Natural Resources Management Department of MoET, NZCD, GAVS	a) Conduct analysis on wildlife disease registry and health issues b) Organize 3-5 day workshop to develop the guideline c) Circulate the draft guideline to all stakeholders d) Present final draft to the NOHC for approval e) Print and circulate the guideline f) Conduct orientation and training on the guideline
II. HUMAN RESOURCE AND EDUCATION					
Objective 3: To inculcate values and importance of One Health approach in education (schools and tertiary education related to human health, animal health, food safety and environment health)					
3.1 Incorporate One Health topics in the curricula of school and university level (both at degree and postgraduate levels) in human health, animal health, food safety, environmental studies	2024-2025	+++	+++	TWG and University representatives	a) Organize consultative meetings/workshop with schools and university curriculum development officers b) Identify One Health topics and determine credit hours c) Validate the curricula d) Seek approval of the academic board e) Implement the One Health education program
3.2 Initiate One Health Field Epidemiology Training Program (FETP) for in-service professionals of human health, animal health, food safety, environment (combined training program)	2025-2026	+++	+++	National University of Mongolia (Public Health/Epidemiology of Veterinary sciences) and One Health TWG	a) Organize consultative meetings/workshop with the relevant university professors b) Seek funding to support FETP c) Develop FETP curriculum in Mongolian context d) Consult international One Health education experts to review and validate curriculum e) Conduct ToT for FETP f) Seek approval of the academic board g) Implement the FETP h) Announce application for the interested candidate

3.3 Conduct national One Health workshop and regional workshop yearly	2024	++	+++	TWGs and University representatives	a) Seek funding to conduct the workshops b) Organize consultative meeting to identify topical topics for the workshop including some workshop can cover short topic like disease outbreak investigation and response taking One Health approach, QGIS training, Data analysis training workshops, etc c) Conduct the workshop
Objective 4: To enhance One Health human resource capacity					
4.1 Conduct One Health human resource capacity mapping and gap analysis, and recruitment plan at national and subnational level	2025	++	+++	TWG and One Health Committee and HR officers of the relevant agencies	a) Develop human resource capacity mapping and gap analysis toolkit b) Collect data c) Analyze the data d) Develop recruitment plan e) Organize consultative workshop f) Present the findings and plan to NAOH g) Implement HR training and recruitment plan
4.2 Develop merit based incentive and motivational packages and strategic plan to retain One Health professional workforce in province, Aimag and Soum	2024	+++	+++	TWG and One Health Committee and HR officers of the relevant agencies	a) Conduct job satisfaction and career growth survey b) Review the relevant laws and clauses of civil service and assess how effectively they are implemented c) Organize consultative workshop to develop the incentives and packages d) Seek the government approval e) Conduct regular monitoring and evaluation f) Generate data how One Health workforce contribute to saving lives of humans and animals and protect environment, and contributes to economic growth to motivate government to provide appropriate incentives and better career growth
III. SURVEILLANCE AND LABORATORY					
Objective 5: To institutionalize and enhance integrated surveillance for zoonotic diseases					
5.1 Develop joint and coordinated surveillance strategy plan for zoonotic diseases and chemical contaminants	2022	+	+++	NCZD, GAVS, Environmental department	a) Organize consultative TWG meetings b) Hire international consultant for leading and guiding the development of the strategy plan c) Identify high priority zoonotic diseases including new emerging infectious diseases, neglected zoonotic diseases, chemical contaminants of environment for surveillance d) Organize 3-5 day workshop to develop the strategic plan for joint surveillance e) Seek endorsement of the joint surveillance strategic plan by NOHC f) Circulate the approved plan, guidelines and protocols to all stakeholders g) Conduct orientation and training of the staff
5.2 Develop integrated protocol/SOP for sharing of surveillance results between stakeholders	2022-2024	++	++	NCZD, GAVS, DET	a) Appoint SOP development TWG b) Organize 3-day workshop to develop the integrated protocol and SOP for sharing surveillance results and outbreak information c) Seek approval of the protocol and SOP from NOHC d) Circulate the Protocol and SOP e) Provide orientation and training to staff on the protocol and SOP

5.3 Develop online disease outbreaks and surveillance information sharing electronic platform (preferably hosted on One Health website)	2023-2024	+++	+++	NCZD, GAVS, Environmental department	a) Conduct analysis on multisectoral information/communication b) Identify priority EIDs and zoonotic diseases c) Organize workshop to develop methods and process of disease information sharing on web platform d) Contract the work to IT firm for developing electronic platform e) Provide training on the use of the platform f) Pilot test and launch the platform
5.4 Establish and train One Health Joint Surveillance team	2022-2024	+	+++	NCZD, GAVS	a) Organize meetings between 4 sectors (NCZD, MOH, MOFALI, DET-MET) and identify members b) Develop TOR c) Seek approval from the NOHC and government d) Issue executive order for establishment of the Team e) Organize trainings to appointed teams (national, 5 provinces, regional) f) Conduct joint surveillance, assess results
Objective 6: To initiate and institutionalize integrated surveillance for chemical contaminants					
6.1 Establish joint surveillance team to conduct surveillance of chemical contamination (environment, food, drugs used for wildlife)	2022-2026	+	+++	DET, NCZD, GAVS, WCS	a) Organize meetings between 5 sectors (NCZD, MOH, MOFALI, Food Safety, DET-MET) and identify members b) Develop TOR c) Seek approval from the NOHC and government d) Issue executive order for establishment of the Team
6.2 Develop integrated surveillance protocol for chemical contaminants and conduct training to members	2023-2024	++	+++	DET, NCZD, GAVS, WCS	a) Organize meetings between 4 sectors b) Develop integrated surveillance guidelines or protocol for chemical contaminants (hiring of international consultant may be required). For this 5 day workshop will be need to develop the protocol c) Seek approval of the NOHC or ministries d) Train the professional on the protocol e) Initiate the surveillance on chemical contaminants and assess results
Objective 7: To enhance collaboration in laboratory capacity building and resource sharing					
7.1 Review and develop harmonized laboratory testing methods and SOPs priority zoonotic pathogens including for AMR organism between human and animal health	2022-2023	++	++	NCZD Lab and GAVS Lab	a) Organize meeting between laboratory officials and conduct mapping of laboratory testing protocol for priority zoonotic diseases b) Organize workshop (5 days) to discuss and develop harmonize lab testing methods and SOPs c) Seek approval from NOHC or ministries d) Circulate and train the laboratory officials on new harmonized testing methods and SOPs
7.2 Develop and sing MOU/agreement between human and animal health labs for sharing resources (experts during emergency, equipment and conducting advance tests like gene sequencing in lab equipment with the facilities)	2023	+	++	NCZD, GAVS, SCVL	a) Organize meeting to develop MoU for sharing laboratory resources) including capacity building training b) Sign MoU/Agreement

IV. RISK ASSESSMENT AND COMMUNICATION					
Objective 8: To enhance the high level coordination for risk assessment and risk communication					
8.1 Establish national multisectoral risk assessment and risk communication teams	2022 (Q4)	++	+++	NZCD, DLD, DET-MoET, DPM	a) Organize consultative workshop between MOH, MOFALI, MET RA and RC TWG b) Identify and designate RA and RC representatives from each sector c) Organize consultative meetings and develop TORs for both the teams d) Seek endorsement of RA and RC committees from NOHC e) Approve committee regulations through MOH, MET, MOFALI ministerial order (NEMA to support) f) Issue executive order for establishment of RA and RC committees g) Provide briefing and orientation to the members of RA and RC
Objective 9: To ensure that Risk Assessment and Risk Communication are conducted effectively and efficiently through multisectoral coordinated and collaborative manner taking the One Health approach					
9.1 Review and improve existing risk assessment methodology into an integrated risk assessment methodology taking One Health approach	2022 (Q4)	++	+++	Risk Communication Division of NZCD, DCCD, GAVS, Environment and Natural Resources Management Department of MoET	a) Organize consultative workshop of RA TWG/Committee (MOH, MOFALI, MET) to review existing RA methodology and develop guidance and plan for integrated RA b) Seek approval of the integrated RA methodology, guidance and plan from NOHC or from the government ministries c) Circulate the approved integrated RA methodology and guideline Train members on integrated RA methodology
9.2 Develop integrated and coordinated risk communication guideline and SOP	2023 (Q2)	++	++	Risk Communication Division of NZCD, DCCD, GAVS, Environment and Natural Resources Management Department of MoET	a) Organize consultative workshop of RC TWG/Committee (MOH, MOFALI, MET) to develop integrated and coordinated risk communication guideline and SOP b) Seek approval of the integrated RC guideline and SOPs from NOHC or from the government ministries c) Circulate the approved integrated RC guideline and SOP d) Train members on integrated RC guideline and SOP
Objective 10: Enhance the professional capacity on Risk Assessment and Risk Communication					
10.1 Conduct training for RA professionals from each sector on RA	2023 (Q2)	++	+++	Risk assessment Divisions of NZCD, DCCD, GAVS, Environment and Natural Resources Management Department of MoET	a) Hire national or international consultant on RA b) Develop training workshop program for RA c) Identify professionals to be trained d) Conduct training e) Submit report of the training workshop
10. 2 Conduct training for RA professionals from each sector on RC	2023 (Q2)	++	+++	Risk Communication Division of NZCD, DCCD, GAVS, Environment and Natural Resources Management Department of MoET	a) Hire national or international consultant on RC b) Develop training workshop program for RC c) Identify professionals to be trained d) Conduct training e) Submit report of the training workshop

10.3 Increase the availability of risk communication materials to effectively disseminate risks prevention and control measures on priority diseases	2023 (Q2)	++	+++	Risk Communication Division of NZCD, DCCD, GAVS, Environment and Natural Resources Management Department of MoET	a) Identify the key risk communication materials based on the priority diseases b) Identify target audiences c) Identify key risk communication platform to be used (mainstream media, radio spot, video spot, etc) d) Develop the risk communication materials e) Validate and pilot test it f) Conduct risk communication
V. OUTBREAK INVESTIGATION AND RESPONSE					
Objective 11: To enhance coordination and multisectoral prevention and response to outbreaks of zoonotic diseases					
11.1 Establish specialized multisectoral zoonotic disease outbreak investigation and response teams at national and subnational levels consisting professionals from MOFALI, MET, MOH	2022 (Q4)	++	+++	MOFALI, MOH, MoET (animal research division)	a) Establish revision committee for MOFALI and MOH orders (A-449/A-541) b) Revise joint PH committee on zoonotic diseases regulations c) Establish Multisectoral Zoonotic Disease Outbreak Investigation and Response Teams at National and Provincial levels by expanding the members of existing TWG members d) Develop TOR and draft executive order and issue the executive order
11.2 Develop generic multisectoral disease outbreak investigation and response guideline, protocol and SOP for zoonotic diseases	2023 (Q3-Q4)	++	+++	MOH, MOFALI, MoET, GAVS, PH departments, NCZD (PH, surveillance, emergency operations department), NEMA, SCVL, NCPH EOP	a) Organize retreat workshop to develop generic multisectoral guideline, protocol and SOP for disease outbreak investigation and response b) May need to hire international/national consultant to help in drafting the documents c) Seek approval from the NOHC or ministries d) Implement it by training the members of disease outbreak investigation and response teams
11.3 Conduct training of joint and coordinated outbreak investigation and response management based on the generic guidelines and SOPs on zoonotic diseases (1 national, 22 provincial levels)	2023 Q2-4	++	+++	-NCZD EOP -NCCD surveillance department - SCVL -GAVS livestock health protection department - MoET division responsible for animals	a) Organize training workshops (1 national and 22 provincial and city levels) on joint coordinated outbreak investigation and response management on zoonotic diseases (taking One Health approach) b) May need to hire international experts to train on scenario-based disease outbreak investigation and response management including data analysis skills c) Develop training program and have it approved TWG d) Conduct this workshop on yearly basis to sustain and scale up the training
11.4 Conduct field simulation exercises for preparedness and response management of zoonotic diseases and potential future pandemic event taking One Health multisectoral approach (once every 2 years)	2023 (Q2)	+++	+++	GAVS, NCZD, NEMA, MoET, GASI, MOH	a) Develop field simulation exercise scenarios and program b) Obtain budget or funding to conduct the field simulation exercises c) May need to hire national or international experts to facilitate the field simulation exercises d) Conduct the field simulation exercises e) Report results f) Organize future field simulation exercises based on timeline
Objective 12: To establish and institutionalize the preparedness and response capability to chemical hazards					
12.1 Establish National Chemical Hazard Detection and Response Team for chemical contamination	2022 (Q4)	+++	+++	MoET, Department of Public Health, GAVS,	a) Organize consultative multi-sectoral meeting and develop TORs b) Identify professionals from different sectors and nominate them for the team

				Department of Agriculture, Food Safety Agency, NEMA	c) Seek approval for the establishment of the Team d) Issue Government order for the establishment of the team (inter-ministerial order) e) Develop working regulations for Team on eradicating priority sources of chemical contaminants
12.2 Develop multisectoral response guidelines and regulations for reducing chemical contamination and poisoning	2023	+++	++	MET, Department of Public Health, GAVS, Department of Agriculture, Food Safety Agency, NEMA	a) Organize workshop to develop generic multisectoral guidelines and regulations on monitoring, detection and response to chemical contamination hazards b) May need to hire national or international hazard c) Seek approval from the NOHC or ministries d) Circulate the guideline to all members of the stakeholders e) Issue regulation after seeking the government or parliament approval
12.3 Organize workshop to train the multisectoral teams to train on the guideline and regulation and how to prevent, monitor, detect and respond the chemical contamination hazards	2024, yearly	+++	+++	MET, Department of Public Health, GAVS, Department of Agriculture, Food Safety agency and NEMA	a) Seek funding or budget from the government b) Develop training workshop program for ToT c) Organize the training workshops at national and subnational levels d) Assess the impact of training workshop and generate report e) Sustain the training by conducting it yearly once after setting the deadline for next workshop and budget availability
ANTIMICROBIAL RESISTANCE					
Objective 13: To institutionalize AMR governance and coordination mechanism					
13.1 Establish National multisectoral AMR governance committee	2023 (Q1)	+++	+++	-GAVS -Department of Drugs and Medical Equipment Management	a) Organize NAP introduction workshop for MOH and MOFALI in Q4 2022 b) Approve joint order to establish multisectoral National AMR committee c) Appoint committee members (MOH, MOFALI, MET, Codex National Council) d) Develop TORs and action plan for committee members
Objective 14: To improve the understanding of AMR and AMU risks					
14.1 Develop AMR and AMU risk communication strategy plan and have it approved	2023 Q1	++	+++	Joint AMR committee	a) Organize workshop to develop joint AMR and AMU risk communication strategy plan b) Hire international and national experts to develop the strategy plan c) Organize consultative meetings and workshops d) Receive input from implementing partners e) Approve strategic plan f) Introduce plan to implementing partners and direct implementation
14.2 Develop a joint AMR surveillance system for priority antimicrobials and pathogens, and risk assessment and monitoring plan	2023-2025	+++	++	GAVS -Drug and Medical Equipment Management Agency -AMR joint committee	a) Organize workshops to develop joint AMR surveillance plan b) Hire international and national experts to develop the joint AMR surveillance plan c) Develop AMR database and analysis and reporting system (e.g. WHONet) by contracting to IT firm (software developers) d) Conduct training to the relevant professionals e) Pilot test the system f) Continuously develop system
14.3 Conduct AMR awareness baseline study	2023 (Q1-Q2)	+	++	Joint AMR committee and laboratories	a) Develop questionnaire to assess level of AMR understanding from key partners b) Conduct survey in each sector c) Analyze and report the findings d) Develop results based strategies to create awareness and education

Objective 15: To enhance the capacity of AMR laboratories on testing and surveillance					
15.1 To equip laboratories of human health and animal health to conduct AMR testing and surveillance	2023 (Q3)	+++	+++	SCVL, NCCD, SDCLVD	a) Develop list of necessary equipment for AMR testing (phenotypic or genotypic testing) and cost (equipment, antimicrobial disks and other reagents) b) Source the funding c) Establish AMR lab unit (NCCD, GAVS) d) Ensure lab unit personnel are reflected in central hospital structure and operational standards
15.2 Review and develop harmonized AMR testing methods and surveillance in human health and animal health and food safety laboratories	2023 (Q4)	++	+++	SCVL, NCCD, SDCLVD	a) Organize workshop to review the existing AMR testing methods in the two sectors and develop harmonized methods of testing and interpretation of test results b) Agree whether to follow CLSI or EUCAST guidelines for the interpretation of the results c) Develop AMR testing SOPs d) Seek approval of the harmonized AMR testing methods and SOPs e) Circulate to all the laboratories for implementation
15.3 Conduct training of the laboratory staff of human health and animal health, and food safety sectors on AMR testing and surveillance	2023 (Q3)	++	+++	SCVL, NCCD, SDCLVD	a) Invite international consultant and organize the training workshop for laboratory officials on AMR testing methods taking ToT approach b) Train laboratory officials on harmonized AMR methods of testing, quality control and assurance, and interpretation of the results c) Sustain the training by conducting similar training on yearly basis

Difficulty of implementation: *Low +, Moderate ++, Very difficult +++* ***Impact:*** *Low impact +, Moderate impact ++, High impact +++*

OUTPUT 3: PRIORITIZATION RESULTS

All participants were asked to vote individually using white sticker (provided 5 per person) to select which five of the identified objectives they considered as the highest priority. A total of 84/114 (73.7%) participants voted. The result of the prioritization is shown in Figure 8. The top three objectives voted are to institutionalize and enhance integrated surveillance for zoonotic diseases (74%), to enhance the high-level coordination for risk assessment and risk communication (74%) and to institutionalize One Health governance and coordination at national and subnational levels (57%).

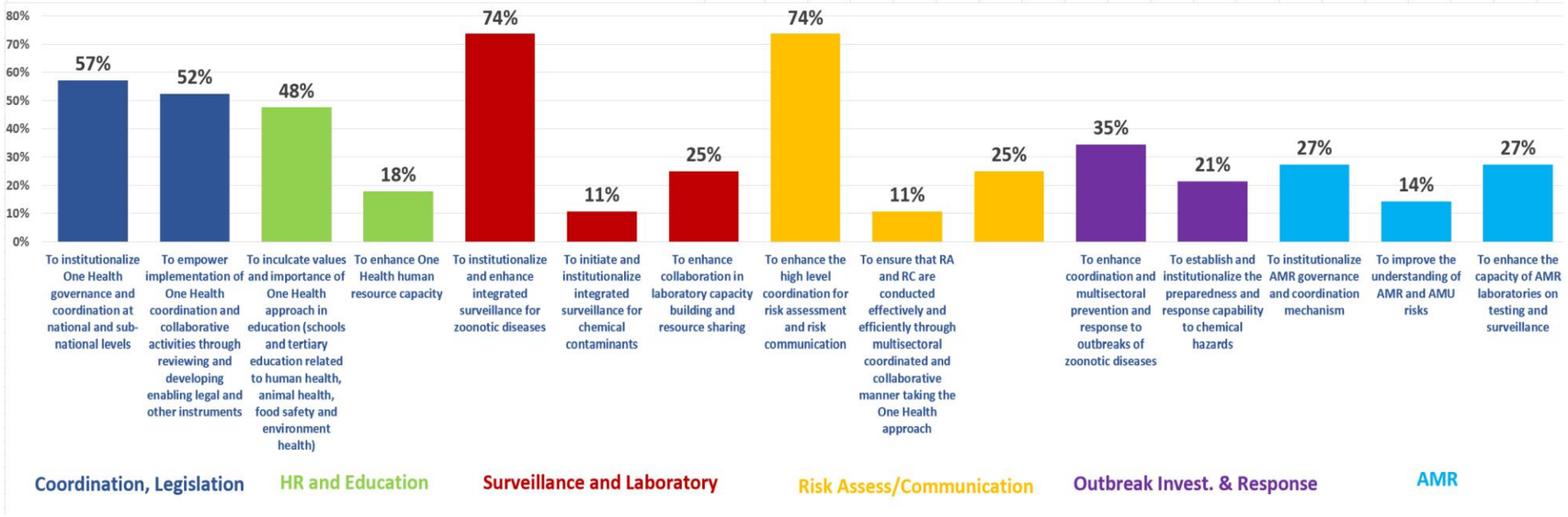


Figure 8. Results of the prioritization of joint roadmap objectives and activities to be implemented in forthcoming coming years in Mongolia

WORKSHOP EVALUATION

An evaluation questionnaire was completed by 82/114 (71.9%) participants in order to collect feedback on the relevance and utility of the workshop.

Tables 2-5: Results of the evaluation of the event by participants (82 respondents)

Workshop evaluation	'Satisfied' or 'Fully satisfied'	Average score (/4)
Overall assessment	**100%**	**3.5**
Content	100%	3.5
Structure / Format	100%	3.5
Facilitators	100%	3.5
Organization (venue, logistics, …)	100%	3.4

Participants had to choose between 1=Highly unsatisfied – 2=Unsatisfied – 3=Satisfied – 4=Highly satisfied

Impact of the workshop on…	'Significant' or 'Major'	Average score (/4)
Your technical skills / knowledge	100%	3.3
The work of your unit/department	99%	3.4
The intersectoral collaboration in Mongolia	100%	3.7

Participants had to choose between 1=No impact at all – 2=Minor impact – 3=Significant impact – 4=Major impact

Satisfaction rate for each session						
Session 1	**Session 2**	**Session 3**	**Session 4**	**Session 5**	**Session 6**	**Session 7**
99%	100%	96%	98%	100%	100%	99%

Would you recommend this workshop to other countries?	
Absolutely	56%
Probably	44%
Likely not	0%
No	0%

APPENDIX

ANNEX 1: WORKSHOP AGENDA

DAY 1	
08:30 – 09.00	Registration of participants
09.00 – 10.00	**Opening Ceremony** ▪ S.Enkhbold Minister of Health (3') ▪ Z.Mendsaikhan Ministry of food, Agriculture and Light industry (3') ▪ Dr Sergey Diorditsa, WHO Representative in Mongolia (3') ▪ Dr Hirofumi Kugita, World Organization for Animal Health (3') ▪ Vinod Ahuja, FAO Representative in Mongolia (3') **Introduction of participants** ▪ N. Tsogbadrakh, General director of National Center for Zoonotic Diseases – Moderator (5') ▪ B. Batsukh, Head of Veterinary hygiene and assurance department of General authority for veterinary services, Government implementing agency ▪ Group photo (5') ▪ Tea break **10' /09:50/**
10.00 – 12.00	**Session 1: Workshop Objectives and National Perspectives** • Workshop approach and methodology – PPT (10') • MOVIE 1: Tripartite One Health collaboration and vision (15') - One health introduction in Mongolia - Human health Services and one health - N.Tsogbadrakh General director of NCZD (20') - Veterinary Services and one health - D.Batchuluun GAVS (20') - Environmental Services and One Health – P.Tsogtsaikhan Director of Division of Fauna, flora and natural resources (20') • MOVIE 2: Driving successful interactions - Movie (25')
Lunch (12:00-13:30)	
13.30 – 17.00	**Session 2: Navigating the road to One Health** Session 2 divides participants in working groups and provides an opportunity to work on the presented concepts. Each group will have central and provincial representatives from both sectors and will focus on a fictitious emergency scenario. Using diagrammatic arrows to represent the progression of the situation, groups will identify joint activities and areas of collaboration and assess their current functionality using one of three color-coded cards (green, orange, red). Coffee break (20')
	• Presentation and organization of the working group exercise – PPT (15') • Case study - Working groups by disease (120') • Restitution (75')

Expected outcomes of Sessions 1 and 2:

- *Understanding of the concept of One Health, its history, its frameworks and its benefits.*
- *Understanding that a lot of areas for discussion and possible improvements do exist and can be operational - not only conceptual.*
- *Level of collaboration between the two sectors for 16 key technical areas is assessed.*
- *Collaboration gaps identified for each disease.*

17.00 – 18.30	**Facilitators and moderators only:** Briefing Session 3-4-5 and compilation of results from Session 2

DAY 2	
08.30 –11.20	**Session 3: Bridges along the road to One Health** Session 3 presents the tools from both sectors (IHR MEF, JEE, PVS) and uses an interactive approach to map activities identified earlier onto a giant IHR-PVS matrix. This process will enable to visualize the main gaps, to distinguish disease-specific vs systemic gaps and to identify which technical areas the following sessions will focus on.
	• MOVIE 3: IHR Monitoring and Evaluation Framework (25') • MOVIE 4: PVS Pathway (25') • MOVIE 5: IHR-PVS Bridging (10') • Mapping gaps on the IHR/PVS matrix (50') + Coffee break (20') • Discussion – Plenary (30')
Expected outcomes of Session 3: • *Understanding that tools are available to explore capacities in each of the sectors.* • *Understanding of the contribution of the veterinary sector to the IHR.* • *Understanding of the bridges between the IHR MEF and the PVS Pathway.* • *Identification of the technical areas to focus on during the next sessions.*	
11:20 - 12:40	**Session 4: Crossroads - IHR MEF, JEE and PVS Pathway reports** Participants will be divided into working groups by technical topic (surveillance, communication, coordination, etc) and will explore the improvement plans already proposed in the respective assessments (IHR annual reporting, JEE, PVS Evaluation, etc.), extract relevant sections and identify what can be synergized or improved jointly.
	• Presentation and organization of the working group exercise (20') • Extract main gaps and recommendations from the PVS and IHR reports (including the JEE), in relation to gaps identified on the matrix (60')
Lunch (13:00-14:00)	
14:00 - 14:30	**Session 4 (continued)**
	• Extract main gaps and recommendations from the PVS and IHR reports (including the JEE), in relation to gaps identified on the matrix (continued, 30')
Expected outcomes of Session 4: • *Good understanding of the assessment reports, their purpose and their structure.* • *Main gaps and recommendations from existing reports have been extracted.* • *A common understanding of the effort needed starts to emerge.*	
14:30–17:15	**Session 5: Road planning**

	Participants will use the results obtained from the case studies and from the assessment reports to develop a realistic and achievable road-map to improve the collaboration between the sectors.
	• Presentation and organization of the working group exercise (15') • Identification of Activities (Working groups by technical topic) (150')
Expected outcomes of Session 5: • *Clear and achievable activities are identified to improve inter-sectoral collaboration between the two sectors for all technical areas selected.*	
17.15 – 19.00	**Facilitators only:** Compilation of results from Session 5 (drafting of the road-map) and preparation of Session 6

DAY 3	
9:00 – 12:30	**Session 6: Fine-tuning the roadmap** The objective of Session 6 is to have all participants contribute to all technical areas and to consolidate the joint-road map by making sure it is harmonized, concrete and achievable.
	• Fine-tuning of the road-map: Objectives and filling out of Activity cards (90') Coffee break (15') • World Café (90') • Presentation of the prioritization vote (10') • Prioritization vote (during lunchtime)
Expected outcomes of Session 6: • *Harmonized, concrete and achievable road-map.* • *Timeline, focal points, needed support and indicators have been identified for each activity.* • *The impact and the difficulty of implementation of proposed activities have been estimated.* • *Buy-in and ownership of all participants who contributed to all areas of the road-map.* • *Prioritization of the activities.*	
Lunch (12:15-13:30)	
13:30 - 15:30	**Session 7: Way forward** In the last session, representatives from the key Ministries take over the leadership and facilitation of the workshop to discuss with participant about the next steps and how the established roadmap will be implemented. Linkages with other mandated plans such as the National Action Plan for Health Security are discussed. This is also where any need from the country can be addressed. This will depend greatly on the current status of the country in terms of IHR-MEF and on the level of One Health capacity.
	• Results of the prioritization vote (15') • Integrating the action points into the IHR-MEF process (30') • Next steps (75') (lead by Ministry representatives)
Expected outcomes of Session 7: • *Linkages with NAPHS.* • *Identification of immediate and practical next steps.* • *Identification of opportunities for other components of the IHR-MEF.*	

15:30 - 16:30	**Closing Session** • Evaluation of the workshop (20') • Closing ceremony (40')
16.30 – 17.00	**Facilitators:** Video interview of some participants

ANNEX 2: LIST OF PARTICIPANTS

SN	**Name**	**Organization**
1	S. Enkhbold	Ministry of Health
2	D. Bayarbold	Ministry of Health
3	L. Enkhsaikhan	Ministry of Health
4	A. Dolgorkhand	Ministry of Health
5	Z. Mendsaikhan	Ministry of Food, Agriculture and Light Industry
6	L. Altangerel	Ministry of Food, Agriculture and Light Industry
7	B. Bat-Erdene	Ministry of Nature, Environment and Tourism
8	P. Tsogtsaikhan	Director of Division of Fauna, Flora and Natural Resources
9	Batsukh Zayat	Institute of Veterinary Medicine
10	Batsukh Basan	General Authority for Veterinary Services (GAVS)
11	Bulgan Boldbaatar	GAVS
12	D. Batchuluun	GAVS
13	T. Tungalag	GAVS
14	S. Ganzorig	GAVS
15	A. Tuvshinbayar	GAVS
16	T. Erdenesaikhan	GAVS
17	B. Bayartungalag	GAVS
18	Ts. Selenge	NCCD
19	J. Baigalimaa	NCCD
20	M. Tsolmon	NCPH
21	B. Bayarmaa	NCPH
22	B. Tuguldur	NCPH
23	B. Uyanga	NCZD
24	N. Tsogbadrakh	NCZD
25	Ts. Enkhbayar	NCZD
26	D. Otgonbayar	NCZD
27	U. Unursaikhan	NCZD

28	B. Amgalanbayar	NCZD
29	P. Altangegel	NCZD
30	O. Daariimaa	NCZD
31	A. Erdenetsetseg	NCZD
32	B. Lhavgasuren	NCZD
33	B. Chimedtsiye	NCZD
34	Kh. Tserensuren	NCZD
35	B. Bayarkhuu	NCZD
36	S.Mungunbagana	NCZD
37	Sh. Enkhtuvshin	Wildlife Conservation Society
38	B. Nyambayar	Wildlife Science and Conservation Center
39	Z. Zundui	Ecological Police
40	N. Odonchimeg	GASI
41	G. Batsuren	GASI
42	М. Мөнгөнбаръяа	NEMA
43	T. Boldbaatar	Ministry of Nature, Environment and Tourism
44	U. Gerelmaa	The State Central Veterinary Laboratory (SCVL)
45	B. Otgonbayar	The State Quality Control Laboratory for Veterinary Drug
46	B. Boldbaatar	School of Veterinary Medicine, Mongolian University of Life Sciences
47	B. Bazarragchaa	The State Central Veterinary Laboratory (SCVL)
48	B. Erdenechimeg	Arkhangai CZD
49	S. Buyanjargal	Bayankhongor CZD
50	Ch. Urjikh	Bayan-Ulgii CZD
51	M. Uransugir	Dundgovi CZD
52	S. Batsaikhan	Gobi- Altai CZD
53	G. Gantsetseg	Khentii CZD
54	Ts. Gerelmaa	Khentii CZD
55	Lh. Baasansuren	Khovd CZD
56	B. Baasandorj	Khuvsgul CZD
57	D. Altanchineg	Umnugobi CZD
58	B. Sukhbaatar	Uvurkhangai CZD
59	J. Munkhtsetseg	Zawkhan CZD
60	D. Enkhtuul	Bayankhongor HD

61	E. Bymbatsogt	Arkhangai HD
62	S. Ariunaa	Bulgan HD
63	L. Ulziijatgal	Darkhan HD
64	N. Oyun-Erdene	Dornod HD
65	B. Saruultsetseg	Dundgovi HD
66	B. Narantsetseg	Gobisumber HD
67	S. Munkhzul	Dornogovi HD
68	D. Sugar	Gobi- Altai HD
69	A. Bilimbek	Bayan-Ulgii HD
70	D. Ulziisaikhan	Khuvsgul HD
71	Kh. Battsetseg	Sukhbaatar HD
72	P. Otgonbileg	Orkhon HD
73	H. Altan-Ochir	Tuv HD
74	D. Erdenbileg	Uvs HD
75	E. Lhagwadulam	Uvurkhangai HD
76	N. Naranbayar	Uvs HD
77	B. Sosorburam	Zawkhan HD
78	Ch. Ayushmaa	Dornod VD
79	U. Mungunkhuu	Dornogovi VD
80	B. Nyandorj	Darkhan VD
81	L. Oyun-Erdene	Bayankhongor VD
82	A. Saruuljargal	Arkhangai VD
83	A. Aidinaskhar	Bayan-Ulgii VD
84	G. Odsuren	Bulgan VD
85	I. Javkhlant	Dundgovi VD
86	D. Nayanbuu	Gobi- Altai VD
87	Ch. Otgonsuren	Gobisumber VD
88	N. Ankhbayar	Khentii VD
89	D. Battsengel	Khovd VD
90	P. Erdenejargal	Orkhon VD
91	D. Nyamdorj	Khuvsgul VD
92	P. Odbayar	Umnugovi VD
93	M. Altantsetseg	Uvs VD

94	A. Nyamdavaa	Uvurkhangai VD
95	D. Chimeddorj	Zavkhan VD
96	B. Boldbaatar	Tuv VD
97	A. Narantuya	Ulaanbaatar VD
98	S. Ariuntugs	Selenge VD
99	M. Molorchimeg	Sukhbaatar VD
100	T. Terbish	Khuvsgul VDS
101	P. Tumurtogoo	Khuvsgul VDS
102	N. Erdenebat	Selenge NCD
103	B. Baymbajaw	Umnugobi ND
104	Bolatbek Dauletkhan	World Vision
105	Ganzorig Khurekbaatar	International Finance Cooperation
106	Nyamjargal Gombo	FAO Mongolia
107	Enkhtur Byakharjav	FAO Mongolia
108	Radnaabazar Jargalmaa	FAO Mongolia
109	Erdenejargal Tumurbaatar	FAO Mongolia
110	Battsetseg Gonchigoo	FAO Mongolia
111	Sergelen Munkhuu	FAO Mongolia
112	D. Nyamkhuu	WHO Mongolia
113	B. Dulamragchaa	WHO Mongolia
114	E. Erdenechimeg	WHO Mongolia
115	Guillaume Belot	Facilitator, WHO
116	Jessica Kayamori Lopes	Facilitator, WHO
117	Sithar Dorjee	Facilitator, FAO
118	Kinzang Dukpa	Facilitator, WOAH
119	Mario Ignacio Alguerno	Facilitator, WOAH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