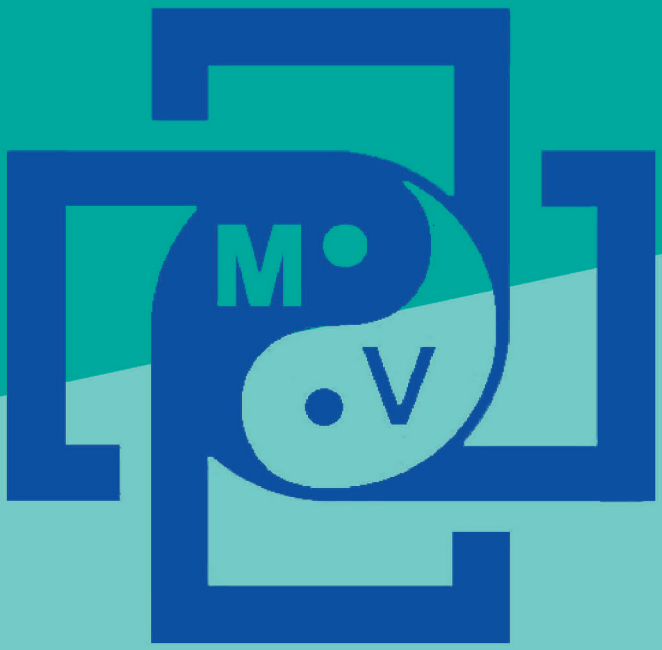
MONGOLIAN VETERINARY MEDICINE

No 6/125 December, 2016 Since 1993



МОНГОЛЫН МАЛ ЭМНЭЛГИЙН ХОЛБООНЫ СЭТГҮҮЛ
УЛААНБААТАР ХОТ

МОНГОЛЫН
МАЛ ЭМНЭЛЭГ

December, 2016 No 6/125 Since 1993

MoVM-

Mongolian Veterinary Medicine

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CONTENTS

Forward by the Manager of the Animal Health Project

Our project team has successfully implemented the "Animal health" project, with the financial support from the Swiss Agency for Development and Cooperation from 2012 to 2016.

Healthy animals mean health and food security for all Mongolians and livelihood security for a quarter of the Mongolian population.

The World Organization for Animal Health (OIE) has done its Performance, Vision and Strategy (PVS) and Gap analysis in the service performance and legislation of the Mongolian veterinary sector and recommended that Mongolia should have an integrated State Veterinary Service that regulates veterinary policy, implementation and inspection with a clear line of authority between the Chief Veterinary Officer and the local personnel who must deliver essential state veterinary services.

Furthermore, in 2011 the National Security Council of Mongolia recommended that the Government of Mongolia should establish a national veterinary authority with integrated administration of veterinary policy, inspection and services in order to put it in line with the international standard based on the OIE recommendation and experts' conclusion.

Based on the above recommendations and proposals of the national specialists, the AHP has supported the development of an independent law on "Animal Health" with the aim to put Mongolian veterinary services in line with the international standard and ensure rapid and smooth response against any animal diseases, and developed the "FMD" and "Brucellosis" control strategies as a model to effectively control transboundary and zoonotic diseases approved by the Ministry of Food, Agriculture and Light Industry. With the help of AHP, undergraduate veterinary curriculum has been revised and started to be implemented from the 2015/2016 academic year.

We would like to express our gratitude to veterinarians, state veterinary and research professionals, the Swiss and national veterinary partners who have effectively cooperated with us during the project implementation and who have greatly contributed to the project achievements.

Manager of "Animal Health" Project S. Batsaikhan

INTRODUCTION TO THE "ANIMAL HEALTH" PROJECT

Requested by: The Government of Mongolia
Period: 2012-2016
Donor: Swiss Agency for Development and Cooperation
Budget: 5.9 million CHF
Outreach: National level

Mongolian partners:

- Ministry of Food, Agriculture and Light Industry
- Ministry of Health
- Ministry of Education, Culture, Science and Sport
- Veterinary and Animal Breeding Agency
- State Central Veterinary Laboratory
- Institute of Veterinary Medicine
- School of Veterinary Medicine
- National Center for Communicable Diseases

Swiss partners:

- Swiss Federal Food Safety and Veterinary Office, Bern, Switzerland
- School of Agriculture, Forest and Food Sciences, HAFL, Zollikofen, Switzerland
- SAFOSO AG, consulting firm, Bern, Switzerland
- Swiss Tropical and Public Health Institute, University of Basel, Basel, Switzerland

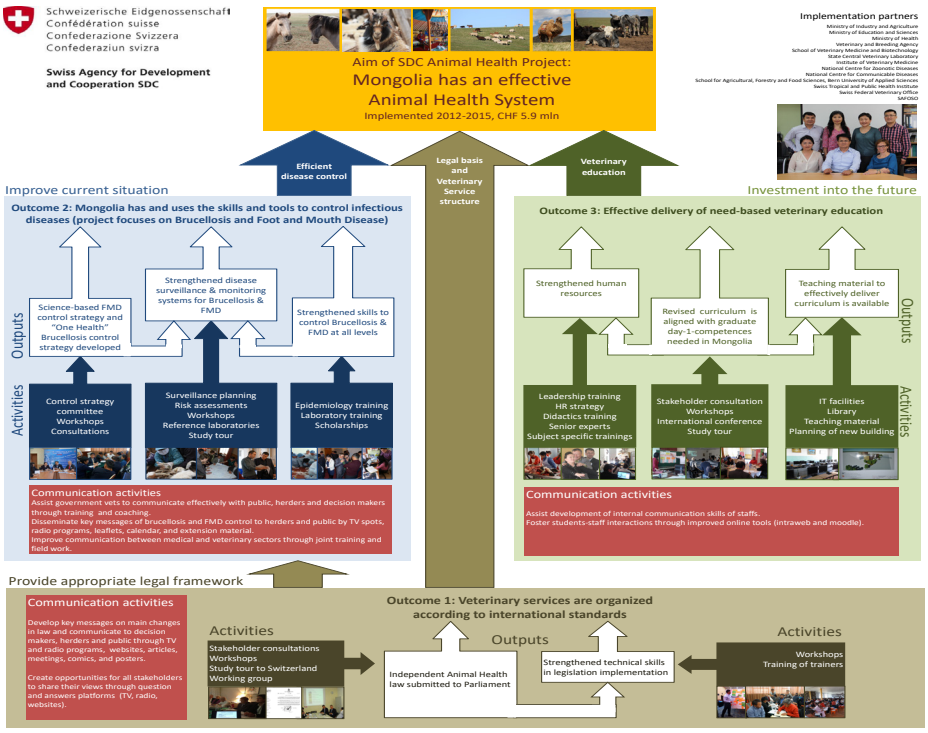
International partner:

- Royal Veterinary College, University of London, UK

With the aim of improving the national animal health system, the project has been implemented through three components shown in the figure below:

Abbreviation

AHP	Animal Health Project
UN-FAO	Food and Agriculture Organization of the United Nations
FMD	Foot and mouth disease
HAFL	School of Agriculture, Forest and Food Sciences, Switzerland
GoM	Government of Mongolia
SGKh	State Great Khural
IVM	Institute for Veterinary Medicine
MoES	Ministry of Education, Culture, Science and Sport
MoH	Ministry of Health
MoF	Ministry of Finance
MoFALI	Ministry of Food, Agriculture and Light Industry
MULS	Mongolian University of Life Sciences
NCCD	National Centre for Communicable Diseases
NGO	Non-Governmental Organization
PIU	Project Implementation Unit
OIE	World Organization for Animal Health
SCVL	State Central Veterinary Laboratory
SDC	Swiss Agency for Development and Cooperation
SVM	School of Veterinary Medicine
STPHI	Swiss Tropical and Public Health Institute, Basel
VABA	Veterinary and Animal Breeding Agency
EAEVE	European Association of Establishments for Veterinary Education



PART I

IMPROVEMENT OF VETERINARY LEGISLATION

Based on the recommendations of OIE and the National Security Council of Mongolia and experts' opinion, an "Animal health" law was developed and submitted to the General Session of the Mongolian Parliament on the 20th of May, 2016.

Law on "Animal health"

The current law on "Livestock gene pool and animal health protection" was approved in 1993, amended in 1995, 1996, 2010 and 2011, and revised in 2001 and 2007. The current law regulates both veterinary and animal breeding issues.

The current law lacks regulation of the following issues:

- livestock disease diagnostics
- surveillance
- disease free assurance, financing
- public health protection
- infection protection of veterinary personnel
- biosafety
- social security of the veterinarians
- involvement, rights and responsibilities of private veterinary units, livestock owner, entrepreneurs and NGOs
- definition of liabilities and consequences for violation of the law.

Based on the facts listed above and in order to improve the animal health protection regulated by the current law on "Livestock gene pool and animal health protection", an independent law on "Animal health" including aspects of animal and public health, and freedom of trade, was developed and submitted to the Parliament of Mongolia.

National brucellosis control strategy and action plan are approved

Brucellosis is a zoonotic disease, which is transmitted from animals to humans. In the framework of the "Mongolian Livestock" National Program, approved by the Mongolian Parliament in 2010, a mass vaccination of livestock was launched in 2011. In 2015, the "National brucellosis control strategy and action plan" were approved by the resolution A-154 from the Minister of Food and Agriculture. Thus, policies and approaches of the Government of Mongolia to control livestock brucellosis till 2021 has been determined. According to the approved strategy, it is planned to vaccinate newborn animals (female calves, lambs and kids) every year, which is considered the most cost-effective and feasible method for the Mongolian condition.

МОНГОЛ УЛСЫН
ХҮНС, ХООДОЙ АЖ АХУЙН САЙДЫН
ТУШААЛ

2015 оны 12 сарын 11 өдөр Дугаар А/154 Улаанбаатар хот

Малын бруцеллёзтой тэмцэх стратеги, төлөвлөгөөг батлах тухай

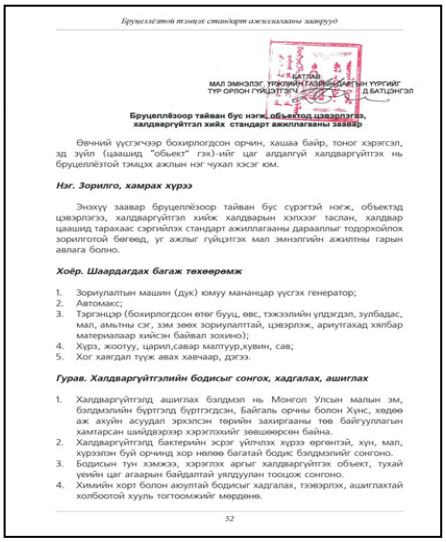
Монгол Улсын Засгийн газрын тухай хуулийн 20 дугаар зүйлийн 5 дахь хэсгийн 13 дахь заалт, Хүнс, хөдөө аж ахуйн сайдын эрхлэлийн 2015 оны 04 дүгээр сарын 15-ны өдрийн хуралдааны 02 дугаар тэмдэглэлийн тус тус үндэслэн Улсын Их Хурлын 2010 оны 23 дугаар тогтоолоор батлагдсан "Монгол мал" үндэсний хөтөлбөрийн 3.3.1.2; 3.3.1.3 дахь заалтыг хэрэгжүүлэх зорилгоор ТУШААХ нь:

1. Малын бруцеллёзтой тэмцэх стратеги, төлөвлөгөөг хавсралтаар батлагдсугай.

2. Малын бруцеллёзтой тэмцэх стратеги, төлөвлөгөөг хэрэгжүүлэх үйл ажиллагаанд шаардагдах зардлыг жил бүрийн төсөвт тусгах арга хэмжээ авч ажиллахыг Стратегийн бодлого, төлөвлөлтийн газар /А.Анунаран/, Мал эмнэлэг, үржлийн газар /М.Галбадрах/-т тус тус үүрэг болгосугай.

3. Тус стратегийн хүрээнд тандалт судалгаа хийх график төлөвлөгөө гарган ажиллаж, стратегийн хэрэгжилтийн үр дүнг жил бүрийн 1 дүгээр сард багтаан Сайдын эзэлөлийн хуралдаанд танилцуулж байхыг Мал эмнэлэг, үржлийн газар /М.Галбадрах/-т даалгасугай.

САЙД Р.БУРМАА



Брүцеллёзтой тэмцэх стандарт ажиллагааны заавруул

БАТЛАВ
МАЛ ЭМНЭЛЭГ, ҮРЖЛИЙН ГАЗРЫН ДАРГЫН ҮҮРГИЙГ
ТҮР ОРЛОН ГҮЙЦЭТГЭГЧ Д.БАТЦЭНГЭЛ

Брүцеллёзоор тайван бус нэгж, объектод цэвэрлэгээ, халдваргүйтгэл хийх стандарт ажиллагааны заавар

Өвчний үүсгэгчээр бохирлогдсон орчин, хашаа байр, тоног хэрэгсэл, эд зүйл (цаашид "объект" гэх)-ийг цаг алдалгүй халдваргүйтгэх нь брүцеллёзтой тэмцэх ажлын нэг чухал хэсэг юм.

Нэг. Зорилго, хамрах хүрээ

Энэхүү заавар брүцеллёзоор тайван бус сүрэгтэй нэгж, объектэд цэвэрлэгээ, халдваргүйтгэл хийх халдварын хэлхээг таслан, халдвар цаашид тархахаас сэргийлэх стандарт ажиллаганы дарааллыг тодорхойлох зорилготой бөгөөд, уг ажлыг гүйцэтгэх мал эмнэлгийн ажилтны гарын авлага болно.

Хоёр. Шаардагдах багаж төхөөрөмж

1. Зориулалтын машин (дүк) юмуу мананцар үүсгэх генератор;
2. Автомакс;
3. Тэрэнцэр (бохирлогдсон өтөг буюу, өвс, тэжээлийн үлдэгдэл, зулбадас, мал, амьтны сэг, зэм зөөх зориулалттай, цэвэрлэх, ариутгахад хялбар материалаар хийсэн байвал зохино);
4. Хүрз, жоотуу, царил,савар малтуур,хувин, сав;
5. Хог хаягдал түүх авах хавчаар, дэгээ.

Гурав. Халдваргүйтгэлийн бодисыг сонгох, хадгалах, ашиглах

1. Халдваргүйтгэлд ашиглах бэлдмэл нь Монгол Улсын малын эм, бэлдмэлийн бүртгэлд бүртгэгдсэн, Байгаль орчны болон Хүнс, хөдөө аж ахуйн асуудал эрхэлсэн төрийн захиргааны төв байгууллагын хамтарсан шийдвэрээр хэрэглэхийг зөвшөөрсөн байна.
2. Халдваргүйтгэлд бактерийн эсрэг үйлчлэх хүрээ өргөнтэй, хүн, мал, хүрээлэн буй орчинд хор нөлөө багатай бодис бэлдмэлийг сонгоно.
3. Бодисын тун хэмжээ, хэрэглэх арга халдваргүйтгэх объект, тухай үеийн цаг агаарын байдалтай уялдуулан тооцож сонгоно.
4. Химийн хорт болон аюултай бодисыг хадгалах, тээвэрлэх, ашиглахтай холбоотой хууль тогтоомжийг мөрдөнө.

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Standard Operating Procedures for Brucellosis Control is approved

It is important to implement the approved "National brucellosis control strategy" as effectively as possible, and provide the professionals with integrated guidelines and respective methodologies.

Therefore, a set of eight "Standard Operating Procedures for Brucellosis Control" were developed and approved by Veterinary and Animal Breeding Agency.

Thus, the activities of the strategy are clear and simple to be understood by anyone.

National FMD Control Strategy and Contingency plan are approved

FMD is a highly contagious viral disease of cloven-hoofed animals such as camel, cattle, yak, sheep, goat, pig, deer and gazelle.

The mid-term National FMD Control Strategy and Contingency Plan were approved by Order A/112 from the Minister of Industry and Agriculture (25.09.2014).

The Strategy includes a new concept to destroy only severely affected animals or the animals with poor prognosis due to co-infection.

This concept has positive effects to the herders' feeling on animal welfare as well as to save the state expenditure devoted for the compensation of destroyed animals.

ҮЙЛДВЭРҮҮ,
ХООДОЙ АЖ АХУЙН САЙДЫН
ТУШААЛ

2014 оны 09 сарын 25 өдөр Дугаар А/112 Улаанбаатар хот

Шүлхий өвчнийг тэмцэх стратеги, бүлэн байдлын үндэсний төлөвлөгөө батлах тухай

Малын удмын сан, эрүүл мэндийг хамгаалах тухай хуулийн 4 дүгээр зүйлийн 4.3.4, 6 дугаар зүйлийн 6.2.2. дахь заалт, Засгийн газрын 2014 оны 07 дугаар сарын 04-ний өдрийн хуралданы 37 дугаар тэмдэглэлийн тус тус үндэслэн ТУШААХ нь:

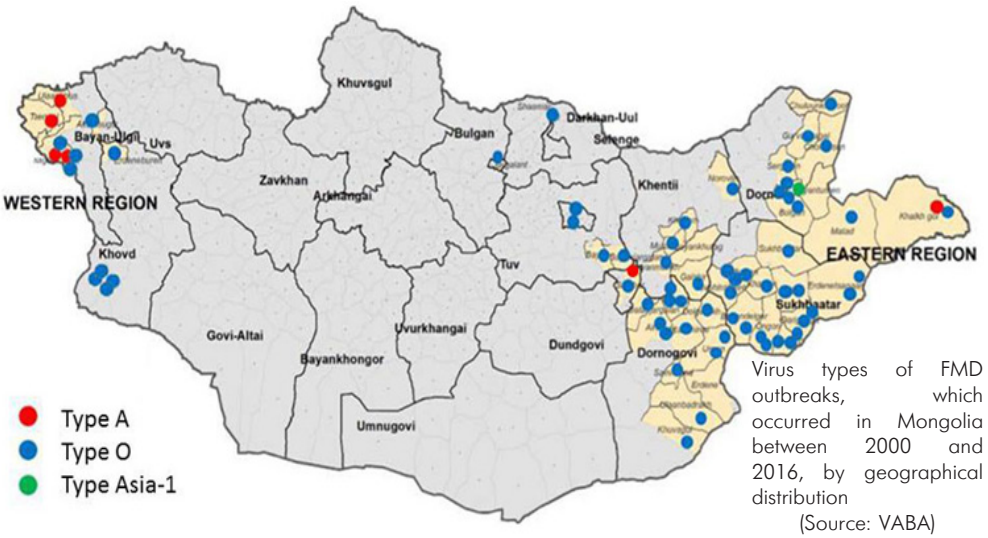
1.Шүлхий өвчнийг тэмцэх стратегийг нэгдүгээр, Шүлхий өвчнийг тэмцэх бүлэн байдлын үндэсний төлөвлөгөөг хоёрдугаар хавсралтаар батлагдсугай.

2.Стратеги, бүлэн байдлын үндэсний төлөвлөгөөний хэрэжилтэд хяналт тавьж, ирүүд, холбогдох байгууллагыг мэргэжил, арга зүйн зөвлөмжөөр хангаж ажиллахыг Мал эмнэлэг, үржлийн газар /М.Галбадрах/-т үүрэг болгосугай.

3.Бүлэн байдлын үндэсний төлөвлөгөөнд нийцүүлэн тухайн нутаг дэвсгэрт мөрдөх Бүлэн байдлын төлөвлөгөөг батлаж, хэрэжилтийг зохион байгуулж ажиллахыг аймаг, нийслэлийн Засаг дарга нарт зөвлөсүгэй.

4.Энэхүү тушаал гарсантай холбогдуулан Хүнс, хөдөө аж ахуй, хөнгөн үйлдвэрийн сайдын 2011 оны А/31 дүгээр тушаалын хавсралтаар батлагдсан Малын гоц халдварт шүлхий өвчнийг тэмцэх бүлэн байдлын үндэсний төлөвлөгөөг хүчингүйд тооцсугай.

САЙД Ш.ТҮВДЭНДОРЖ



Virus types of FMD outbreaks, which occurred in Mongolia between 2000 and 2016, by geographical distribution

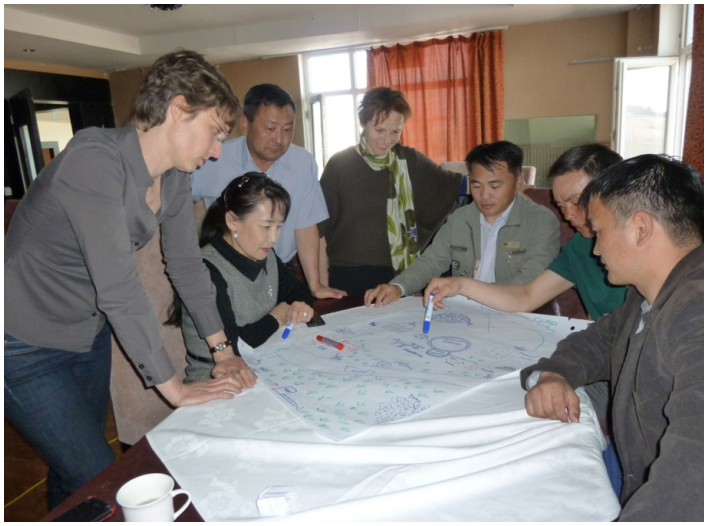
(Source: VABA)

Risk assessment of FMD virus entry, exposure and spread in the Eastern and Western regions of Mongolia

The FMD virus entry, exposure and spread in the Eastern and Western regions of Mongolia were assessed to support the FMD control measures.

The participants of the assessment concluded that entry risk pathways with highest risk estimates were related to livestock movements and in the consequent assessment due to direct contacts.

The result of the risk assessment is published in the following international peer-reviewed journal to provide national and international experts with relevant information:



Certificate of endorsement of Official control programme for FMD of Mongolia by the OIE

Official control programme for FMD is endorsed by the OIE

The official control programme for FMD of Mongolia, which was developed according to the OIE Terrestrial animal health code (2015), was endorsed by the OIE World Assembly of Delegates on the 24th of May, 2016. Mongolia became the 9th member country of the OIE and the 3rd country of the Asia-Pacific region, which has an endorsed FMD control programme.

This shows that the FMD control measures implemented in this country are accepted internationally. Also this document has a value of being a reference for developing concepts of similar disease control programmes.

Mid and long-term strategies for the level-II veterinary laboratories, and standards for the provincial and municipal veterinary laboratories are developed

In order to define the current capacity of the provincial and municipal veterinary laboratories, reveal their strength and weaknesses and guide their further development, an assessment was done on all provincial and municipal veterinary laboratories by a national consultancy team using the UN FAO "Methodology of laboratory assessment". Based on the assessment results, mid-term (up to 2020) and long-term (up to 2030) strategies to develop the level-II veterinary laboratories, and standards to regulate the laboratories, responsible for animal disease diagnostics, surveillance, and testing quality and food safety of animals and animal derived products have been drafted. The drafts are ready for submission to the Ministry of Food, Agriculture and Light Industry, and to the Mongolian Agency for Standardization and Metrology for approval.

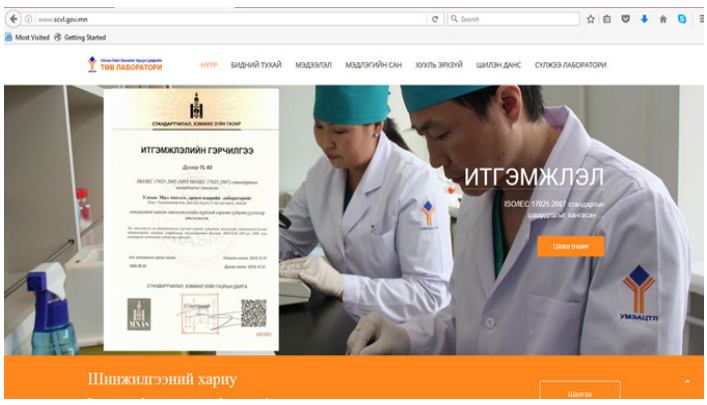
No	Criteria	Percentage of performance		
		2016	2020	2030
1	Laboratory structure and general condition	38.9	63.3	90.0
2	Facility and equipment	18.1	42.3	70.5
3	Performance of laboratory diagnostics and testing	19.3	44.4	74.1
4	Laboratory bio-safety and service quality	20.8	46.0	80.5
5	National and international collaboration	19.5	47.9	70.8

From the draft of the Development strategy of provincial and municipal veterinary laboratories

A veterinary laboratory information management system is established

The SCVL has established an information management system, connecting 21 provincial and municipal veterinary laboratories. The aim is to create a new e-registration and information system using a special software and to network all public veterinary laboratories with a purpose to have a united database. The outcomes are:

a) establish a comprehensive management system of veterinary laboratories, and enhance decision-makers with required information within a short period of time;
b) improve speed and safety of information, and implement rapid animal disease control measures;



c) extend activities of the Mongolian veterinary laboratories, improve their economic efficiency, and exchange information regardless of distance and time;
d) use the same test result sheet throughout the country;
e) create database of need and supply of veterinary laboratory staff;
f) run e-monitoring on the use of diagnostic kits and reagents at SCVL;
g) compile test results in a table within one to three minutes;
h) show disease outbreaks and cases by animal species on a geographical map.

The Animal Health Project made a valuable contribution to the curriculum renovation of the Mongolian University of Life Sciences

Dr. B. Buyanzaya
Vice-Director in charge of curriculum, MULS

The development of the veterinary sector is not only the issue of veterinarians. This sector is important in making the livestock sector capable to support the society and the economy, providing safe and secure food, and creating an economically independent status of the country.

In Mongolia, one veterinarian serves around 35 thousand animals. This country has a huge territory with a continental climate, where nomadic animal husbandry prevails. Everyone knows that protecting animal health is extremely difficult under these conditions.

Therefore, it is required to educate veterinarians, who have knowledge, skills and attitudes, and to sensitize them for society, labor market, nature and climatic conditions.

Based on the initiatives and collaboration of professionals, corresponding institutions and the university authorities, we have moved a step forward in developing a new curriculum adopting the best practices of similar establishments in Japan, Canada, Switzerland and UK, where veterinary services are best developed.

Here we want to emphasize the contribution of the Animal Health Project. This project differs from other projects and programs by the following achievements:

1. The human resource policy of the veterinary sector and the education of veterinary staff were considered as a complex issue comparing veterinary technicians and veterinarians' curricula contents.
2. Consultation was given on how to define Day-one-competencies (D1C) of veterinary graduates involving employers, graduates and professional institutions. The SVM curriculum was developed based on the defined D1C.

3. The best experiences of Royal Veterinary College, University of London, on how to organize an effective veterinary education system was introduced to the management team and lecturers of the MULS and SVM through a series of trainings and discussions.
4. The curriculum revision was not limited to the content and teaching methodology, but was extended to a new student assessment methodology, which can serve as a reference for other schools.
5. In order to enhance the implementation of the new curriculum, including teaching and assessment, the project provided the SVM with a clinical teaching facility, instruments, and furnished the new library and lecture rooms to satisfy up to date and modern requirements.

VETERINARY TIMES

18-24.11.2013

Educator development for Mongolian guests

THE RVC played host to six veterinary teachers from the Mongolian State University of Agriculture.

The visit took place on November 11 and was part of a new model of veterinary educator development introduced by the RVC in which teachers from other countries participate in professional development at the college.

Teachers were given a two-day introduction at the RVC's LIVE Centre on the theoretical basis of teaching and learning before being shown examples of teachers at work at both RVC campuses in Camden, London and Hawkshead, Hertfordshire.

Observations of teachers gave an opportunity for the Mongolian veterinary educators to see how the theoretical aspects are incorporated into different types of sessions, including large and small groups, directed learning and farm or clinical-based sessions.

November 30, 2013 | Veterinary Record | 515

EDUCATION

Mongolian teachers look at new approaches to veterinary education

WITH approximately 40 million livestock and three million people, the veterinary profession is hugely important in Mongolia. However, teaching methods are mostly teacher- rather than student-centred and, to meet current and future animal health challenges, there may be a need to reform the current veterinary curriculum.

To find out more about such teaching methods, a delegation of teachers from the School of Veterinary Medicine and Biotechnology (SVMB) of the Mongolian State University of Agriculture, supported by Swiss Development Cooperation, visited the Royal Veterinary College (RVC) earlier this month. Ayona Silva-Fletcher, together with her colleagues at the centre for Lifelong Independent Veterinary Education, put together a one-week programme covering the theoretical basis of teaching and learning, before the visitors were shown examples of 'teachers at work' at the RVC's Camden and Hawkshead campuses.

The theoretical aspects of the programme covered how students learn, learning preferences and current evidence on teaching methods, communications skills, designing appropriate learning materials, and teaching veterinary basic sciences in a clinical context. The practical observations of teachers gave the Mongolian veterinary teachers an opportunity to see how these theoretical aspects are incorporated into different types of sessions, including learning in large and small groups, directed learning and farm- or clinical-based sessions.

'Thanks to this visit to RVC we have many good ideas on how to improve our school,' commented P. Nyam-Osor, director of the SVMB. 'For example, the clinical skills centre is something we can set up. Also we have seen excellent examples of multipurpose teaching facilities, which is much more cost-effective. Overall we have learnt a lot.'

Veterinary teachers from the Mongolian State University of Agriculture at the RVC's Hawkshead Campus on November 11. The RVC's Ayona Silva-Fletcher (third from left) organised the visit, while Barbara Wieland (third from right) acted as the translator. Dr Wieland is the programme manager for the animal health section within the Swiss Cooperation Office of the Embassy of Switzerland in Mongolia

doi: 10.1136/vr.f6946

The School of Veterinary Medicine received recommendations from the international accreditation organization of veterinary education for the first time

In 2012, with the support of AHP, a consultation team from the EAEVE gave recommendations to the SVM for the further development based on the Self-evaluation report and on-site visit.

These recommendations became the rationale of the SVM curriculum revision.

European Association
of Establishments for Veterinary Education

Association Européenne
des Etablissements d'Enseignement Vétérinaire

REPORT ON THE CONSULTATIVE SITE VISIT TO THE SCHOOL OF
VETERINARY MEDICINE AND BIOTECHNOLOGY,
MONGOLIAN STATE UNIVERSITY OF AGRICULTURE,
ULAANBAATAR, MONGOLIA

October 22 – 26, 2012

by the EXPERT GROUP

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Assessment of needs and supply of veterinarians and veterinary para-professionals is done to guide their further development

B. Otgontugs
Lecturer of anatomy,
Department of Veterinary
basic sciences, SVM, MULS

In 2016, AHP in collaboration with a joint team of national and international consultants has conducted an assessment of needs and supply of veterinarians and veterinary para-professionals.

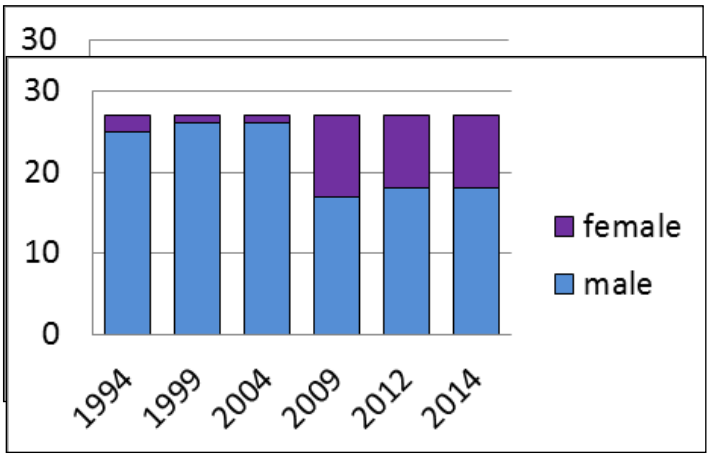
The main achievement of the assessment was the mathematical estimation of the required number of new veterinary students for the coming 10 years to fully enhance the veterinary service needs.

This estimation, based on the current need, will be important in harmonizing the need of the veterinary sector with the number of graduates and increasing employability through better quality education. Also the specific recommendations to the Government, line Ministries and educational institutions will be valuable for them to define the important challenges and the ways to address them efficiently.

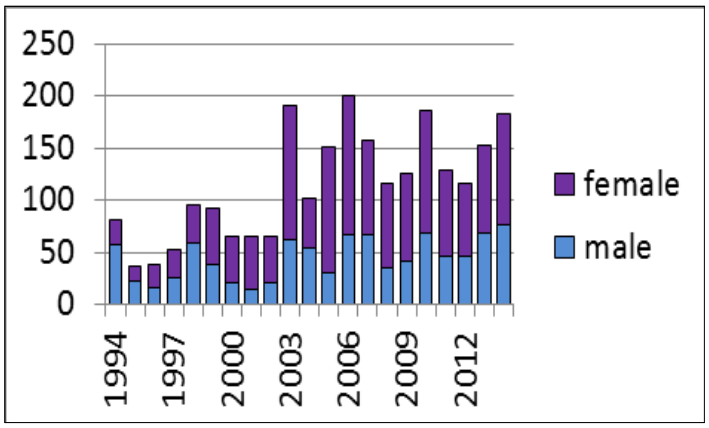
The law on "Animal health" needs to be approved as soon as possible. If the law is approved, the Veterinary Statutory Body (VSB) will be established and function on the regulations of veterinarians and veterinary para-professionals and their education standards. The recommendations from the assessment team will be very important for the VSB activities.

A survey on gender equalities in the veterinary sector is completed

This is the first survey conducted among veterinarians in Mongolia investigating perceptions and beliefs about gender equality. The survey identified interesting facts that need to be addressed to improve gender equality.



Gender distribution in senior management positions in the veterinary sector in Mongolia, 1994-2014



Number of female and male graduates from 1994 to 2013 (source: School of Veterinary Medicine, 2014)

The majority of participants (62.7%) expressed that they have a male boss, but it is worthwhile to note that 25% of participants, without any prompting, made a statement that qualifications and skills are more important than gender when it comes to leadership positions. Results of the 21 statements revealed overall significance but small differences between opinions of men and women and there was little evidence of serious gender inequalities.

Published books

PART II

STRENGTHENING KNOWLEDGE, SKILLS AND ATTITUDE

The roles of the veterinary sector in food supply, and in support to the exports to improve the livelihood of the nation have been increasing from day to day. The efficiency of any sector depends on the human resource knowledge, skills and attitude.

The following success stories show the achievements of different targeted activities of AHP to strengthen veterinarians from the bachelor level onwards:

Summary of trainings conducted by AHP in 2012-2016			
Training subjects	Total man/ day*	Female participants	Male participants
Epidemiology/Disease control (post vaccination surveillance, proper usage of veterinary drugs, data analysis)	4206	2136	2070
Laboratory (FMD and brucellosis diagnostics)	1446	1025	421
Generic skills (English, HR, communication)	3215	1478	1737
Total	8867	4639	4228

*Man days means number of participants times training days

Beneficiary acknowledgements

Result of brucellosis vaccination is being monitored

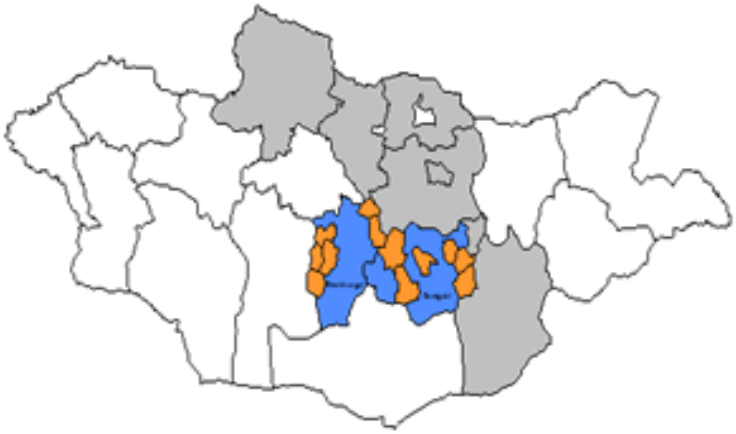
Livestock can be vaccinated to help to minimise the brucellosis spread between animals and from animals to people. In 2012-2016, vaccination of livestock against brucellosis was conducted throughout the country.

Ya. Nomkhon
Senior officer, VABA

To ensure that the vaccination campaign was a success, a post vaccination sero-surveillance was conducted with AHP support to reveal the vaccination coverage.

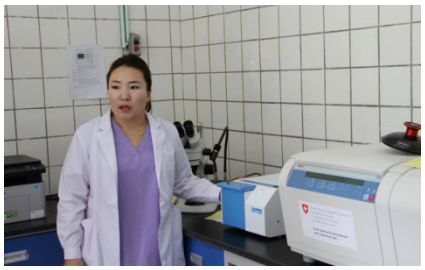
Samples were also taken from herders to determine how many people were infected with brucellosis.

This survey illustrates how vets and medical doctors can successfully work together. This is particularly important when dealing with diseases that can be transmitted from animals to people. It not only improves the knowledge of professionals; it also shows herders the importance of brucellosis control.



Randomly selected aimags and soums for post-vaccination surveillance in 2012 (Source: AHP report 2012)

Brucellosis diagnostic capacity is improved



J. Munkhgerel
Bacteriologist, Unit of Diagnostics and Surveillance for Infectious and Parasitic diseases, SCVL

The establishment of the national reference laboratory for animal brucellosis, based on the Unit of diagnostics and surveillance for infectious and parasitic diseases at SCVL, was supported by AHP.

In the framework of this work, the following activities have been done step-by-step, such as creation of a national reference serum bank, strengthening diagnostic capacity and improving the professional skills.

By establishing the reference laboratory, we are able to define the cut-off of serological tests for brucellosis and also to conduct proficiency testing of provincial veterinary laboratories.

Make sense of data

The application of Health-Info software in the medical sector allows faster data collection on outbreaks of communicable diseases. However, local medical doctors lack the skills to analyze and correlate the collected data and as a result, collected data is not used fully.

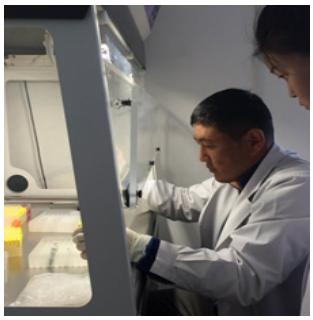
I have successfully attended the theoretical and practical training on "Strengthening epidemiological knowledge of medical doctors and veterinarians", which was organized by the AHP.

In the training, I received knowledge on conducting surveillance, and skills to analyze the collected data. Furthermore, I used the Stata 10 software for analyzing the human infectious disease database of Uvs Province and the result is introduced to decision makers.

Ts. Naranbat
Infectious Disease Specialist, Health Department, Uvs Province

I think if more medical doctors and veterinarians use State 10 software for their daily work, the quality and results of their work would be much better than today.

The molecular level diagnostic capacity of provincial laboratories is strengthened



T. Sansarbaatar,
Bacteriologist, Veterinary Laboratory, Khentii Province

As a result of the AHP and SCVL on-the-job training on Polymerase chain reaction (PCR), the diagnostic capacity of provincial veterinary laboratories has made progress in using molecular level diagnostics for bacterial and some viral diseases.

For instance, before the training only microscopic examination, bacteriology and biochemical tests were used for the anthrax diagnostics. But now we are able to diagnose this disease by using PCR.

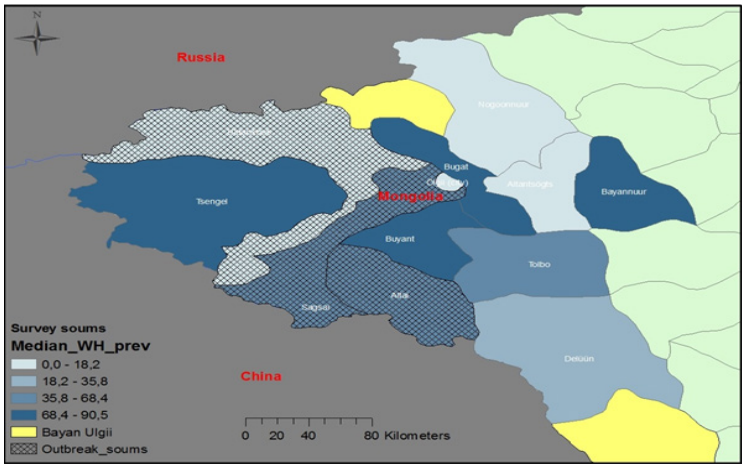
The science based surveillance capacity is strengthened

U. Gerelmaa
Virologist, Laboratory of Transboundary animal disease diagnostics and surveillance, SCVL

Since 2012, SCVL has collaborated with AHP on step-wise training and consultations on epidemiology which led to the increased knowledge of veterinarians on epidemiology and surveillance. Trainees learnt the following methodologies:

- conduct surveys to define the disease source;
- collect data;
- get an appropriate number of samples from proper areas using special software (Epi info 7, ProMESA Statulator-sampling size);
- insert the collected data into the software (SPSS);
- define prevalence rate;
- analyze the test results;
- illustrate them on a map (ArcGIS 10.2).

The trained veterinarians use the obtained knowledge and skills in the disease surveillance programs. This helps to control not only FMD outbreaks but also other transboundary animal diseases in an efficient manner.



Map of FMD surveillance in the western provinces, 2014
(Source: SCVL)

The duration of FMD diagnostic procedure is shortened

D. Batchuluun
Director, SCVL

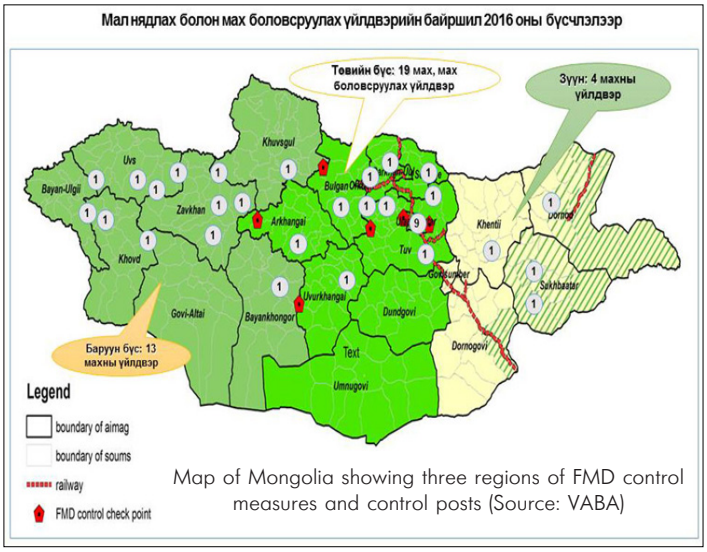
Earlier the FMD diagnosis required 72 hours. But as a result of the AHP investment to the SCVL such as a tissue crusher, diagnostic kits, reagents and other instruments, the FMD diagnosis can be obtained in 6 hours.

Ts. Purevkhuu
Senior officer, VABA

Since 2009, Mongolia has divided the territory into three regions and conducted FMD targeted surveillance.

The financial contribution and consultancy services of AHP have been performed since 2012.

With the help of complex control measures such as science-based serological surveillance, some export bans of cloven-hoofed animals were lifted.



Map of Mongolia showing three regions of FMD control measures and control posts (Source: VABA)

No	The country banned import from Mongolia	Date of the ban	Banned provinces	Date of the ban lift	Provinces where the bans were lifted	Explanation
1	China	2002	Khovd, Bayan-Ulgii, Uvs, Zavkhan, Govi-Altai	2013	Khovd, Bayan-Ulgii, Uvs, Zavkhan, Govi-Altai, Khuvsgul, Bayankhongor	Bayan-Ulgii is banned again due to FMD outbreak
2	China	2013	Due to FMD outbreak in Bayan-Ulgii two provinces were banned. Uvs, Zavkhan, Govi-Altai, Khuvsgul and Bayankhongor were restricted.	2015	Uvs, Zavkhan, Govi-Altai, Khuvsgul, Bayankhongor	Measures have been taken to have the bans lifted in Khovd and Bayan-Ulgii within 2016.
3	China	2014	Khovd was banned due to FMD outbreak. The ban of Bayan-Ulgii continued. Uvs, Zavkhan, Govi-Altai, Khuvsgul and Bayankhongor were restricted.	2015	The meat of cloven-hoofed animals from Uvs, Zavkhan, Govi-Altai, Khuvsgul and Bayankhongor was exported from the audited slaughterhouses.	Measures have been taken to have the bans lifted in Khovd and Bayan-Ulgii within 2016.
4	Russia	2010	Due to FMD outbreaks in the east, certain conditions were required from the central region (Dakhan-Uul, Orkhon, Bulgan, Tuv, Ulaanbaatar).	2013	The central region restriction was lifted and exportation continued normally.	Even though there was restriction in the central region, exports from Khovd, Bayan-Ulgii, Uvs, Zavkhan, Govi-Altai, Khuvsgul and Bayankhongor continued normally.
5	Russia	2015	Khovd and Bayan-Ulgii were temporarily restricted.		Based on the analyses of the surveillance results, exports from the central region continue normally. The required documents for the ban lift are ready to be submitted.	Measures have been taken to have the bans lifted within 2016.
6	Iran	2013	Bayan-Ulgii was banned due to FMD outbreak. Uvs, Zavkhan, Govi-Altai, Khuvsgul and Bayankhongor were restricted.		Information is being exchanged regarding the exports of cloven-hoofed animals from the central region.	Measures have been taken to have the bans lifted within 2016.

(Source: VABA)

Renovation of teaching methodologies

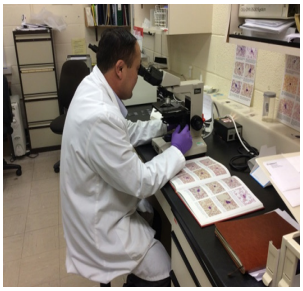
B. Dagvajamts
Lecturer of theriogenology, Department of Internal Medicine, SVM, MULS.

I visited the Royal Veterinary College, University of London, and learned about the international higher education trend and teaching methodologies. Using the obtained knowledge, I have made considerable improvement in reproduction pathology teaching including topics, content and didactics.

Mongolians lack knowledge and information on pig and poultry farming, their care, treatment and disease prevention. There are almost no trained veterinarians in these fields.

Therefore, the pig and poultry training organized by AHP, which involved farm veterinarians and lecturers as a joint audience, were useful for exchange of information regarding practical challenges and veterinary measures.

My involvement in the internship program in Ireland



B. Bayartogtokh
Lecturer of internal medicine, Department of Internal Medicine, SVM, MULS

With the financial support of AHP, I was involved in one-month theoretical and practical training on internal medicine at the Irish equine centre, the OIE Reference Laboratory for Equine Influenza and Herpesviruses, and Troytown GreyAbbey, the horse clinic. Now I have incorporated the obtained knowledge and skills on X-ray and ultrasound diagnostics, and treatment techniques and basic principles into my teaching programme of internal medicine at the SVM.

Study on brucellosis among Mongolian camels

B. Chimedtseren
Lecturer, Department of Infectious Diseases and Public Health, SVM, MULS

A repeated multi-stage cross-sectional study was conducted to assess the epidemiology of camel brucellosis in five selected provinces between 2013 and 2015.

The results of the present investigation indicate that the *Brucella* spp. exists among the camel herds in Mongolia and is closest associated to the infection in cattle.

I am very pleased with scientifically based research work on camel brucellosis in Mongolia that was conducted at the Swiss Tropical Institute and Public Health with the AHP support.

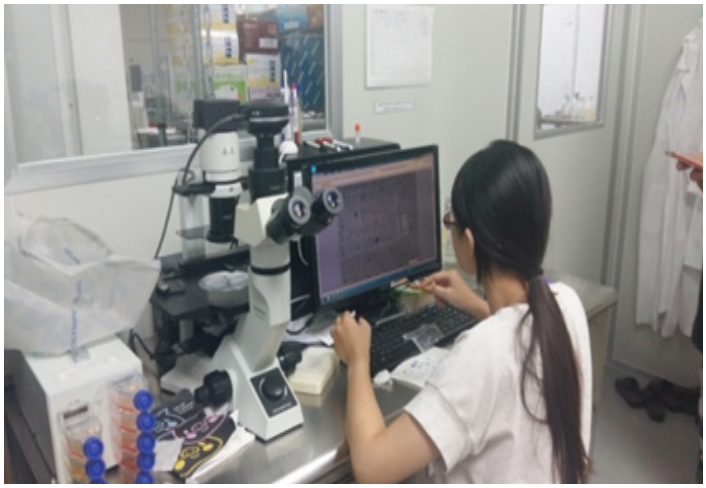
Benefit of learning English

Ts. Undrakhbayar
Researcher, IVM

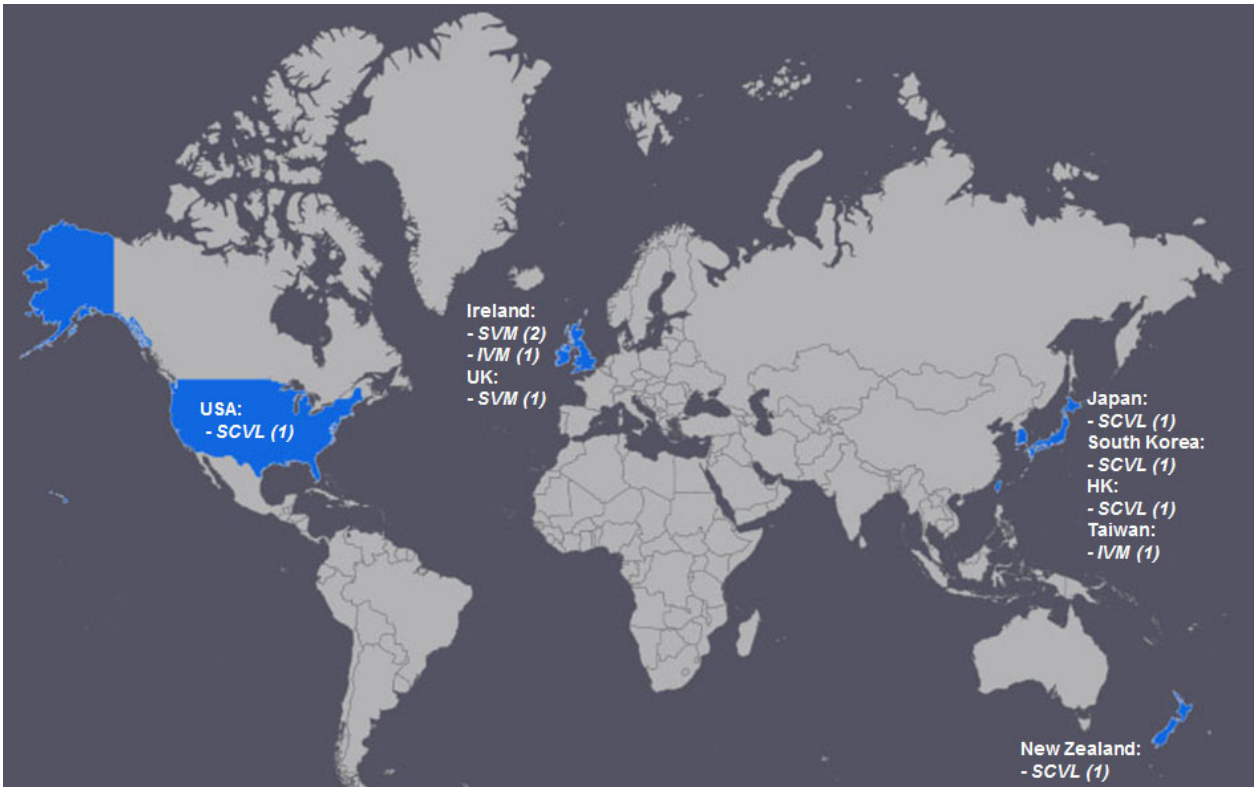
The completion of the courses at "Talk Talk English School" with the financial support of AHP helped me to fulfill the selection criteria for the employment at the IVM.

Also I was involved in the internship program at National Pingtung University of Science and Technology, Taiwan for two months and studied molecular biological methodologies.

Using the obtained knowledge and skills, I have been trying to isolate local strains of bovine viral diarrhea and infectious bovine rhinotracheitis viruses to introduce modern vaccine technology.



VETERINARIANS INVOLVED IN THE INTERNSHIP PROGRAMS, BY EMPLOYERS



Timely human resource management training

B. Battsetseg
Director, IVM

The human resource management trainings organized by AHP for veterinary authorities were timely for me.

Post-training introduction of performance appraisal, staff satisfaction survey and motivation approaches into our institution was useful initiative for defining the achievement level and concept of further activities for the staff, and improving team building.

Jointly organized meetings and conferences

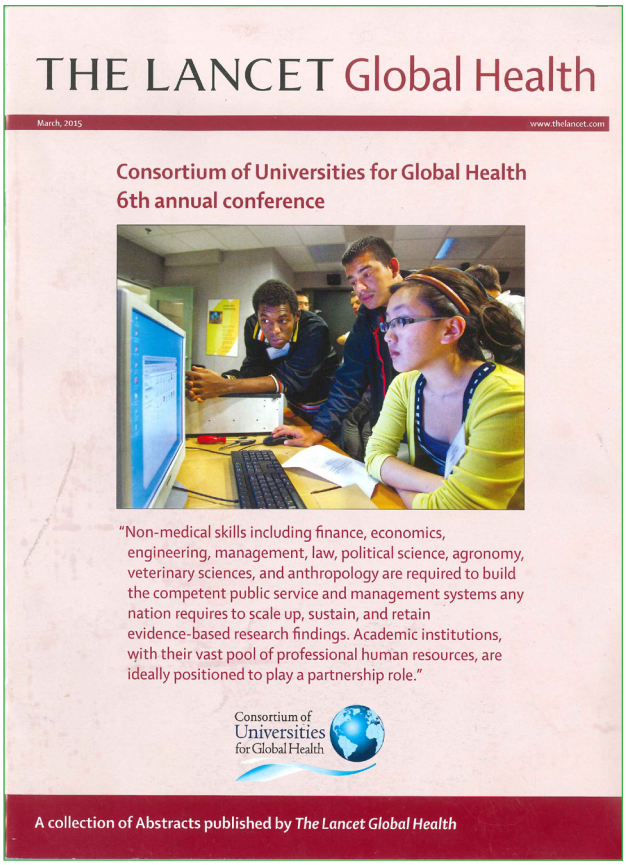
Every year, the veterinary authorities of China, Russia and Mongolia organize a tri-partite consultative meeting. AHP has been supporting this event since 2012.

As a result, challenges regarding bans and restrictions on livestock and livestock derived products between the three countries are being solved accordingly.

Mongolian delegates participated in the OIE Global veterinary education conference twice. The obtained knowledge on the global veterinary education trends and methodologies has been introduced to the SVM curriculum revision.

The SVM delegates presented in the meeting of the Association of Asian Veterinary Schools, and exchanged views with international colleagues. This improved the knowledge of international partners about the SVM leading to the step forward collaboration.

The project team is pleased that abstracts of the trainees on the epidemiology training conducted by AHP have been published in "LANCET", an international renowned professional journal.


THE LANCET Global Health

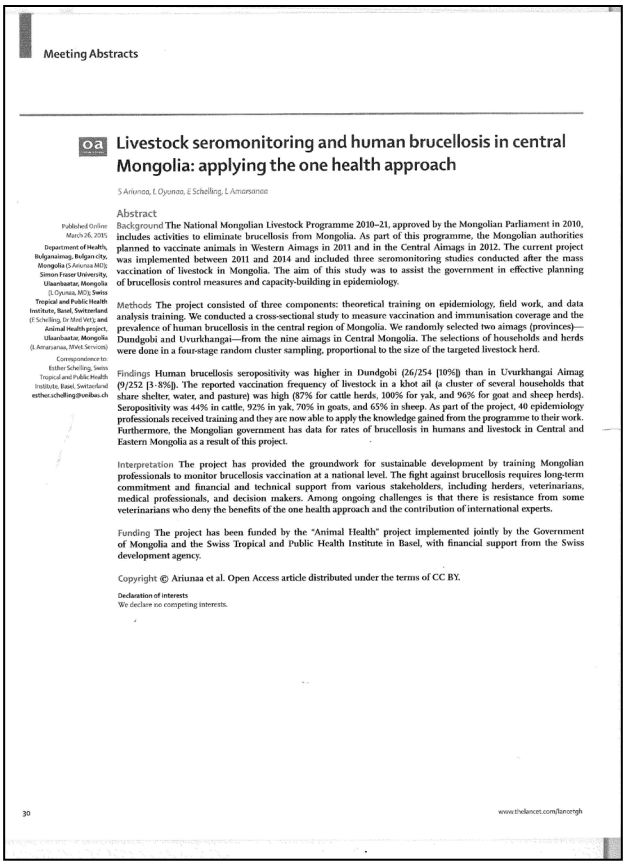
March, 2015 www.thelancet.com

Consortium of Universities for Global Health
6th annual conference

"Non-medical skills including finance, economics, engineering, management, law, political science, agronomy, veterinary sciences, and anthropology are required to build the competent public service and management systems any nation requires to scale up, sustain, and retain evidence-based research findings. Academic institutions, with their vast pool of professional human resources, are ideally positioned to play a partnership role."

Consortium of Universities for Global Health

A collection of Abstracts published by *The Lancet Global Health*


Meeting Abstracts

oa

Livestock seromonitoring and human brucellosis in central Mongolia: applying the one health approach

S Ariunaa, E Oyunaa, E Schelling, E Amarsanaa

Abstract

Background The National Mongolian Livestock Programme 2010–21, approved by the Mongolian Parliament in 2010, includes activities to eliminate brucellosis from Mongolia. As part of this programme, the Mongolian authorities planned to vaccinate animals in Western Aimags in 2011 and in the Central Aimags in 2012. The current project was implemented between 2011 and 2014 and included three seromonitoring studies conducted after the mass vaccination of livestock in Mongolia. The aim of this study was to assist the government in effective planning of brucellosis control measures and capacity-building in epidemiology.

Methods The project consisted of three components: theoretical training on epidemiology, field work, and data analysis training. We conducted a cross-sectional study to measure vaccination and immunisation coverage and the prevalence of human brucellosis in the central region of Mongolia. We randomly selected two aimags (provinces)—Dundgobi and Uvurkhangai—from the nine aimags in Central Mongolia. The selections of households and herds were done in a four-stage random cluster sampling, proportional to the size of the targeted livestock herd.

Findings Human brucellosis seropositivity was higher in Dundgobi (26/254 [10%]) than in Uvurkhangai Aimag (9/252 [3·8%]). The reported vaccination frequency of livestock in a khot ail (a cluster of several households that share shelter, water, and pasture) was high (87% for cattle herds, 100% for yak, and 96% for goat and sheep herds). Seropositivity was 44% in cattle, 92% in yak, 70% in goats, and 65% in sheep. As part of the project, 40 epidemiology professionals received training and they are now able to apply the knowledge gained from the programme to their work. Furthermore, the Mongolian government has data for rates of brucellosis in humans and livestock in Central and Eastern Mongolia as a result of this project.

Interpretation The project has provided the groundwork for sustainable development by training Mongolian professionals to monitor brucellosis vaccination at a national level. The fight against brucellosis requires long-term commitment and financial and technical support from various stakeholders, including herders, veterinarians, medical professionals, and decision makers. Among ongoing challenges is that there is resistance from some veterinarians who deny the benefits of the one health approach and the contribution of international experts.

Funding The project has been funded by the "Animal Health" project implemented jointly by the Government of Mongolia and the Swiss Tropical and Public Health Institute in Basel, with financial support from the Swiss development agency.

Declaration of interests
We declare no competing interests.

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PART III

The project aimed at strengthening the capacity of veterinary organizations and skills of professionals. In order to ensure the sustainability of capacity-building activities, it is important to improve the working conditions of the vets and provide need based equipment and tools.

The following AHP supported investment has been made to the partner veterinary organizations:

TANGIBLE INVESTMENT

Emergency Response Unit at VABA (40 million MNT)

Establishment of a Rapid Response Unit at VABA was financed by AHP, in order to detect transboundary animal disease outbreaks as early as possible, take a rapid response, and improve planning, execution and monitoring of veterinary services.

AHP support to the combat of transboundary animal diseases (330 million MNT)

AHP purchased labour and personal protective clothes, sprayer, needles & syringes and disinfectant that are necessary to combat FMD, peste des petite ruminants and sheep and goat pox, based on the request from the Government of Mongolia dated September, 2016.

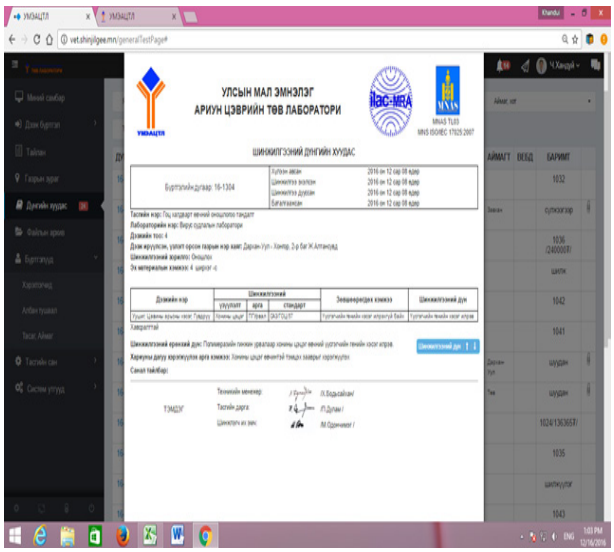
Deep freezer for Brucella culture and serum bank, IVM (14 million MNT)

Mobile fences for brucellosis vaccination to Uvurkhangai Province (10 million MNT)

Investment to the Laboratory of Transboundary animal disease diagnostics and surveillance, SCVL (50 million MNT)

Necropsy instruments, SCVL (11.5 million MNT)

State laboratory information management system (70 million MNT)



Brucellosis reference laboratory, SCVL (200 million MNT)

CO_2 incubator for cell culture, Municipal Veterinary Department (16 million MNT)

Provision of the Gurt Bridge FMD control post with electricity, Khutag-Undur soum, Bulgan Province (20 million MNT)

Architectural plan of the SVM extension, (160 million MNT)

Clinical examination facility, SVM (100 million MNT)

before

after

Equipment and furniture to the library and lecture rooms (120 million MNT)

Necropsy instruments, SVM (11.5 million MNT)

Clinical skill developing instruments, SVM
(110 million MNT)

Forty medical English dictionaries, SVM
(1.6 million MNT)

Turning point, a voting device with 80 response cards and programme, SVM
(11 million MNT)

Notebooks (16 pieces) to the Curriculum development team, SVM (16 million MNT)

The "Animal Health" Project team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