International Consultancy on the export corridor as a component of an upgraded Animal Identification and Recording System (AIRS) in Mongolia

STDF Project Preparation Grant (STDF/PPG/534)

The export corridor - A component of the amended Mongolian AIRS

Report on the work carried out under the PPG (STDF/PPG/534), main activities and results of a mission to Mongolia from 13 to 25 March 2017

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Disclaimer

The opinions expressed in this report are those of the author and do not necessarily reflect the opinions of STDF or any other organisation mentioned in this report. No attempt has been made to verify the consistency between recommendations contained in this report and legal provisions of Mongolia. As a result, this should be verified before implementation of any of the recommendations contained herein.

Table of Contents

Page

LIST OF ACRONYMS

The following terms and abbreviations are used throughout this project:

AIRS	Animal Identification and Registration Scheme
CoCI	Chamber of Commerce and Industry
CVO	Chief Veterinary Officer for Mongolia
EAEU	Eurasian Economic Union
EEC	Eurasian Economic Commission
EU	European Union
DFZ	Disease Free Zone
FAO	Food and Agriculture Organisation of the United Nations
FMD	Foot and Mouth Disease
FTA	Free Trade Agreement
FTZ	Free Trade Zone
GASI	General Agency for Specialized Inspection
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
HACCP	Hazard Analysis and Critical Control Points
ISO	International Organisation for Standardisation
MMA	Mongolian Meat Association
MoFALI	Ministry of Food, Agriculture and Light Industry
MoU	Memorandum of Understanding
OIE	World Organisation for Animal Health
PPG	Project Preparation Grant of STDF
SPS	Sanitary and Phytosanitary Measurements
SR	Small ruminants
STDF	Standard and Trade Development Facility
VABA	Veterinary and Animal Breeding Agency, Mongolia
WB	The World Bank
WTO	World Trade Organisation

List of Annexes

List of Tables

List of Figures

EXECUTIVE SUMMARY

1. Export corridor as a complementary extension of the amended AIRS

Review and GAP analysis of the Mongolian AIRS by E. Rehben resulted in a set of recommendations for upgrading and amendment. The revised AIRS shall be tested by a Pilot Project carried out in three Soums of the Övörkhangai-Aimag. An additional component referring to the export corridor was contributed by STDF. The component shall complement the planning of the coming AIRS as exportation of animals or of animal products is seen as a key commodity of Mongolia's agricultural production.

2. Many factors contributing to significant decline of exports of animals / animal products

Export of Mongolian animals and of animal products has dramatically declined since 2010. Appropriate trend contrasts largely to the overall development of the country's livestock population and impact the issue of overgrazing. The most important constraints for exportation are lack of quality livestock, seasonality of supply, unfavourable slaughterhouse structure, poor utilisation of slaughter capacity, price control/subsidies for domestic consumption, export quota, lack of efficiency in the export certification, lack of access to third countries, currency disparities and tariffs set by importing countries, animal health issues and lack of traceability.

3. Lack of traceability representing the most restricting constraint

Lack of traceability represents the most important constraint as there is no information whether the exported commodity origins from a zone which is known to be healthy or from a zone posing a threat to animal health. Some meat companies try to establish traceability records on the basis of the Animal Health Certificate. However, there is only limited reliability of such confirmation as many animals are not identified.

4. The Veterinary Export Certificate - a key document for exportation

A Veterinary Export Certificate accompanies each consignment on its way to the country of destination. The certification process is specified by the Terrestrial Animal Health Code of OIE, which contains an extra section about trade measures, import/export procedures and veterinary certification. The OIE rules include general provisions for business processes, contents and layout of the certificates. Based on agreed particular export/import requirements, the exporting country may develop specific Veterinary Export Certificates that deviate from corresponding OIE templates in terms of content and format. Lack of a common database, which is shared by all involved stakeholders, makes the issuing of the Veterinary Export Certificate and of other export documents a tedious procedure which could easily be overcome by implementing a more advanced approach.

5. Cumbersome and time-consuming administrative procedure for obtaining exportation permit

Apart from the Veterinary Certificate, which GASI issues approximately ten days after application, the exportation permit requires further documents from other governmental institutions. The administrative procedure for receiving the exportation permit is rather cumbersome and time-consuming. In total, it may take more than two weeks to obtain a permit. GASI, the Mongolian Chamber of Commerce, the national Office for Standardisation and Meteorology and the national Customs

Authority are involved in the administrative procedure, which is still entirely based on paper forms.

6. Certification of deboned meat difficult due to accounting for a batch of animals

Deboned meat comes mostly from a batch of several animals. Due to the big amount of data, it might be difficult to reveal the records of all animals contained in the batch for each package. An alternative option might be the denotation of the Aimags where corresponding animals were born, raised, slaughtered and processed. Such an approach would be comparable to the EU beef labelling scheme.

7. Exportation of live animals requiring particular AIRS movement registration

Live animals intended for exportation must always be identified. Regardless of their intended use either for breeding or for slaughter, they need to undergo a three-week quarantine, taking place at particular quarantine holdings. Movement to the quarantine holding represents a regular movement, whereas the movement from the quarantine to the country of destination represents a particular type of movement which requires the registration of export information.

8. AIRS database supporting the export certification by standardised data interface

Different IT platforms of the users prevent from data exchange through direct system connection. Therefore it is proposed to exchange data between user and AIRS database through standardized interface providing the same format for every user. Data to be transmitted shall comprise traditional features such as animal ID code, sex, breed, date and herd of birth, recent herd, all traceability records and information on preventive measures, but also contain new traits such as antibiotic treatment or the feeding regime. Exchange can be done by formatted reports of the database triggered by appropriate queries indicating the animal ID code(s).

9. Data exchange by dialog and batch processing recommended

The dialog application for the export corridor of the AIRS database should feature a new mask for entering the animal ID code, which – after filling – initiates return of the animal information and offers data download to the local system by “Save as …” or by prompting an error message such as “Animal not found” or – in case of meat – “Animal not yet slaughtered” etc. Similar responses should also account for batch processing of several animals at once. However, in addition to the dialog, there shall be a transfer protocol containing the meta-information of returned AIRS information and error messages in case of errors.

10. Exportation of live animals requiring registration in the AIRS database

Exportation of live animals represents a particular kind of a movement where the animals are ultimately removed from the national animal stock. If the animals were identified by individual ID codes, they must be registered in the AIRS database to prevent so-called “phantom animals”, which only exist in the database but not in reality. “Phantom” animals compromise data integrity and result in deteriorated reliability of the database as it mirrors no longer the reality in the country. Notification of the export needs to be done by the quarantine holding after loading.

11. Low extra costs for programming the AIRS export corridor applications

Based on experience from comparable projects and based on information of the AIRS database developers (from “Interactive SSL”), the development of the AIRS database applications for the export corridor and subsequent training is estimated to amount to around 2 man-months. Programming should preferably be done by the national team of programmers who developed the current database because they are already most familiar with the topic and the structure of the current IT solution. Taking Mongolian fees of 4 million MNT per man-month into account, the extra costs for programming will sum up to an overall amount of 3.300 USD only.

INTRODUCTON

Triggered by the BSE crisis, many OIE member countries implemented functional animal identification and traceability schemes in the recent decades. Increasingly, these systems are becoming essential to enable countries to demonstrate the safety of their live animals and/or animal products in order to gain and maintain access to export markets. Despite being still pending in Mongolia's immediately adjacent countries, in the Russian Federation and in the People's Republic of China, there is already a draft regulation of the Eurasian Economic Commission (EEC)[1] on agreed approaches to the identification, registration and traceability of animals and of animal products.[2] It is assumed that China will develop comparable approaches as well.

Mongolia has spent considerable efforts to establish a country-wide animal identification and traceability scheme (AIRS) for a long time. Advanced field procedures to tag the animals and to capture their data, a functional data flow scheme and a national multi-purpose database were created in 2011. However, due to financial constraints and due to a rather complex multi-purpose approach, the national implementation process came soon to a standstill in the years thereafter. In December 2015, funds of the French government made it possible that Eric Rehben from the French "Institut de l'Élévage" carried out a GAP analysis of the national AIRS. One year later, the World Bank enabled further review by E. Rehben and initiated recommendations on how to overcome existing gaps and constraints by improving the procedural, formal and IT approach. Recommendations for upgrading and amending the existing system were submitted in March 2017[3]. In addition, there was a proposal to test the amended scheme by implementing a pilot project in the Soums of Dzumbayan, Bayangol and Gouchin Us of Övörkhangai-Aimag. The proposals of E. Rehben included the following recommendations:

1. All bovines and camelids should be identified by plastic tags carrying unique individual animal ID codes.
2. A part of equines should be identified by RFID inserts to prevent from horse theft
3. In case of breeding males or other breeding animals belonging to nucleus herds, small ruminants should individually be identified by plastic tags. Animals intended for slaughter should simply be group-wise identified by applying transportation tags which show an official ID code of the relevant herder family[4]. Tagging should be done immediately before sending the animals to the abattoir.
4. Animal tagging and registration of animal data in the national database should be performed by persons authorised to do so by the competent authority. Eligibility should not be confined to particular groups but include privately mandated veterinarians as well as field technicians or herders.

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[1] EEC is the regulatory body of the Eurasian Economic Union (EAEU): Armenia, Belarus, Kazakhstan and Russia

[2] See: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Draft%20EAEU%20Regulation%20on%20Identification%20of%20Animals%20and%20Products_Moscow_Russian%20Federation_4-17-2015.pdf

[3] Title: Specification, implementation plan and cost of a renewed Animal Identification and Registration System in Mongolia

[4] Due to foreseeable difficulties in the supply, assignment and distribution of family-wise printed ear tags, the author of this report recommends the usage of individual animal ID codes here as well.

5. The capturing of mandatory data should be limited to the necessary minimum. Data entry should be speeded up, improved and eased by utilising barcodes and mobile recording device.
6. The renewed AIRS should be implemented within a period of three and a half years. The implementation period should be sub-divided into two phases: a) the pilot phase and b) the extension phase.

The present report about the export corridor for animals and animal products aims to outline a complementary extension of E. Rehben's recommendations. The report is part of a project preparation grant (PPG) approved by the Standard and Trade Development Facility (STDF) in October 2015. Initially focused on developing a pilot project for a new animal identification and traceability system, the scope of work under the PPG was subsequently modified to ensure synergies to the work, supported by France and the World Bank, to assess and review the national AIRS and recommend improvements. Government authorities in Mongolia endorsed the approach to prepare one joint pilot project (based on the findings and recommendations of the work supported by France and the World Bank and STDF) following a joint mission of France, FAO, the World Bank and STDF Consultant in December 2016. The export corridor was seen as the most important complementary AIRS component since exportation of animals or of animal products is seen as a key commodity of agricultural production in Mongolia.

EXPORT OF ANIMALS AND ANIMAL PRODUCTS

Animals and animal products have been exported to many of Mongolia's neighbouring countries. Up to now, the main countries of destination were (in alphabetical order):

- Japan
- People's Republic of China
- Republic of Azerbaijan
- Republic of Iran
- Republic of Kazakhstan
- Republic of Korea
- Russian Federation
- Socialist Republic of Vietnam

Export statistics kept by the Mongolian Statistical Office do not allow for a breakdown of export figures by type of commodity or country of destination. As shown by Table 1, high market volatility can be observed since 2012. That makes it difficult to rank importing countries by importance. The Russian Federation has been the biggest importer of Mongolian meat for a long time. However, new markets such as Iran, Korea, Vietnam and nowadays China have strongly emerged since 2012 and it remains rather unclear, in what direction the current developments will continue.

It should be recalled that Mongolia's territory is entirely landlocked between the Russian Federation and the People's Republic of China. As a consequence, any export to third countries – apart from air transportation – requires transit permission of either Russia or China.

As shown by Table 1, the export of Mongolian animals or animal products has dramatically declined since 2010. This trend contrasts largely with the overall development of the country's livestock population size, which – after disastrous losses due to "dzud" in winter 2009-2010[5] – has shown continuous growth rates since 2011.

Table 1 Mongolian meat exports since 2010 (tons)[1)]

No	Year	Beef	Horse meat	Mutton/ goat meat	Volume of imported meat and offals (USD)		
					Russian Federation	P.R. of China	Japan
1	2010	3806	10847	11417	26250	1486	86
2	2011	5795	3865	505	21185	512	87
3	2012	965	1462	675	6199	672	70
4	2013		2597	403	1201	6206	41
6	2015	847	3856	39			
7	2016		4376	200			

[5] In winter 2009–2010 80% of Mongolia's territory was covered with a snow blanket of 200–600 mm. Extreme cold (night temperatures below −40 °C) remained for almost 50 days in some aimags. Many families suffered from heavy losses of farm livestock or lost even their entire herds. By May 2010, the United Nations reported that eight million, or about 17% of the country's entire livestock, had died (source: https://en.wikipedia.org/wiki/Zud).

[1)] Source: Meat study 2017 of the Mongolian Meat Association

A large number of factors have contributed to this development. According to information of FAO and the Mongolian Meat Association[6], the most important constraints are:

- Lack of quality livestock

  Harsh climate in combination with poor nutrition – in particular during wintertime – results in slow growth and relatively high slaughter age of the animals. Small ruminants are slaughtered at an age between three and four years. Production of high quality livestock that meets the satisfaction of demanding consumers in export markets appears rather difficult under such environment.

  There are some first plans to overcome such constraint by collecting the animals in fenced collection centres (so-called "Agricultural Parks") for a certain time and feeding them up prior to slaughter[7]. Collection centres would also serve for effective health control since the animals can be tested for diseases upon entry to the centre. Insofar they are comparable to quarantine stations allowing for detection of diseases even if they should still be at incubation stage.

- Seasonality of supply

  Seasonal reproduction and poor feeding regime particularly during winter time result in seasonal supply of slaughter animals. The main slaughter season lasts from October to January. Excess carcasses or meat cuts of that period are frequently deep-frozen for later processing. Seasonality does not only result in failing to meet continuous consumer demand, but also in loss of the slaughter staff's working skills due to long-term interruption of the routine working processes. As shown above, there are currently some attempt to overcome seasonality by collecting and finishing the animals continuously in a special environment.

- Unfavourable slaughterhouse structure and poor utilisation rate of slaughter capacity

  There are 48 officially approved and registered abattoirs in Mongolia. Due to the seasonal production none of them operates at full capacity. According to information of the Mongolian Meat Association (MMA), only one abattoir uses 80% of its capacity, another two 50% and another five between 20% and 30%. A total of 36 abattoirs are either idle or operate at a capacity level of less that 10%. Poor utilisation rate does not only result in reduced return on investments but also causes significant loss of professional skills of slaughterhouse staff, which includes very negative impacts on workflow and slaughter hygiene.

6 FAO Study: Enhancing Meat Exports for Mongolia (UTF/MON/009); Meat study of the Mongolian Meat Association

7 Currently, there is a project preparation for the production of high quality slaughter cattle which is funded by USAID Mongolia. The agricultural park shall be located in Bulgan Aimag and will include an own, newly built abattoir. According to discussions with the USAID country coordinator Rick Gurley, there is significant interest for USAID to become involved into the pilot project to be developed through the joint work by France, FAO, STDF and the World Bank. USAID also indicated readiness to share the ear tag costs. According to the author's opinion, such initiatives should be followed up and considered in addition to the proposed pilot regions in Övörkhangai-Aimag since the well controlled environment would allow for excellent testing conditions.

All abattoirs are subjected to initial and ongoing certification which is granted by a State Commission of representatives from the General Agency for Specialized Inspection (GASI), the Mongolian Meat Association (MMA) and the Veterinary and Animal Breeding Agency (VABA) of the Ministry of Food, Agriculture and Light Industry (MoFALI). Three levels of certification are provided reflecting the overall ability to meet the organisational and sanitary requirements set by the competent authority. "A" indicates several deficiencies are to be addressed "AA" means slight deficiencies exist and "AAA" is best. Only abattoirs that are graded "AA" or "AAA" are allowed to export. Statistics of the Mongolian Meat association show that 78 % of operational abattoirs have been classified as "AA" and 22 % as "AAA". Apart from national certification, inspectors from each of the importing countries are also checking and approving the organisational and sanitary slaughter conditions. According to the Mongolian Meat Association, 65% out of 48 abattoirs and 3% out of 120 meat processing plants have finally passed these kinds of checks and have received export permission.

It should be mentioned that poor structure and work organisation does not apply for the entirety of Mongolian abattoirs. There are some meat companies which have achieved remarkable quality management systems based on ISO 9001 or management systems for food safety based on HACCP or even on ISO 220000. Makh Market LLC, which was selected for participation in the pilot project, is one of them.

- Price control/subsidies for domestic consumption and export quota

  The Mongolian government classifies meat as a strategic good which implies public management and control of supply[8]. Occasionally, there are subsides for domestic supply which causes most negative impacts on the competitiveness of meat exports. Despite some recent market liberalisation, public control of domestic meat supply results also in meat export quotas awarded to the exporting companies, i.e. in a maximum amount which may not be exceeded.

- Lack of efficiency in export certification requirements

  As described in a later section, export certification is a cumbersome and time-consuming procedure. The certification process involves several governmental institutions which need to be contacted in succession. Up to now, the procedure is entirely paper-based and it might take more than two weeks until obtaining exportation permit.

- Lack of access to third countries

  According to the meat study of the Mongolian Meat Association, some companies have been approved to export meat to countries other than the Russian Federation and the P. R. of China. However, given difficulties for meat to transit through Russian and/or PRC due to sanitary concerns, these export flows are effectively blocked. Mongolia, Russia and China are members of the WTO. Negotiations with trading partners and transit countries on the basis of corresponding OIE provisions for transit would help to overcome this difficult situation in future.

- Currency disparities and tariffs set by importing countries

  The exchange rate, in particular that of the Russian rouble, results occasionally in limited competitiveness of Mongolian meat and other animal products. In addition, the tariffs imposed by some of the importing countries – especially by those which are not

[8] A national security committee decides on overall exportation amount each year. MoFALI announces the level in media. Meat companies send their application to MoFALI. A commission of MoFALI awards meat company and assigns quota. Awarding criteria are: Abattoir to be graded as AA or AAA, financial health, exportation experience for recent 3 yrs, lacking of tax debts and a contract with the importing country (main criteria).

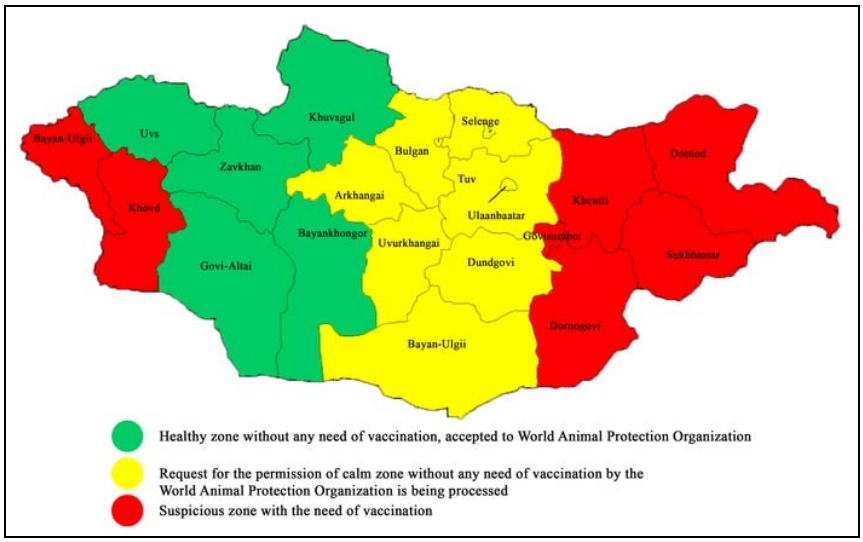
offering IN FULL (GSP) on key commodities – have also a most negative impact on the competitiveness of Mongolian meat.

- Animal health issues

  Animal health issues in combination with lacking traceability represent one of the most restricting constraints for the exportation of animals or animal products. Veterinary preventive measures combating infectious diseases and zoonoses comprise traditional diseases such as anthrax, brucellosis, tuberculosis, leucosis, bovine virus diarrhea and rabies. In correspondence to their disastrous impact, there is however a major focus on Foot and Mouth Disease (FMD), Sheep Pox (SPV) and – since recent – on the Pest of Small Ruminants (PPR).

  Figure 1 shows two risky zones in the very eastern and western provinces where it is necessary to vaccinate the animals against FMD at periodical intervals[9]. The healthy zone – highlighted by green colour – is currently still small. However, there is a request at OIE to acknowledge also the yellow zone as a healthy one. Once the yellow zone has been approved, the biggest part of Mongolia's territory will then belong to the FMD-free zone.

Figur 1 – Zoning for FMD



1) Source: Meat study 2017 of the Mongolian Meat Association

FMD represents an ongoing threat for Mongolia's domestic cloven hoofed animal population. The most recent immediate notification to OIE dated from February 2017 and reported 3 FMD outbreaks affecting 877 cattle, 21 goats and 44 sheep (see: https://www.oie.int/wahis_2/public/wahid.php/Reviewreport/Review?reportid=22811).

Lack of traceability

The geographical distribution of infectious animal diseases underlines the evidence of a functional and reliable national traceability scheme, which is capable of revealing the animals' origin and/or possible contacts with other animals from the risky zone.

[9] Some veterinarians mentioned difficulties in eradicating FMD since the virus seems to persist in the Mongolian wildlife gazelle population.

Despite of lacking AIRS, some of the meat companies (e.g. Makh Market LLC) tried to establish traceability procedures on base of the Animal Health Certificate[10]. The Certificate is issued by the local veterinarian and accompanies the consignment of slaughter animals on its way to the abattoir. Among other information, the certificate indicates the global number of animals and the name and address of the animal's keepers. After arrival at the slaughterhouse, the origin of the animals is captured by the abattoir's IT system and assigned to the relevant slaughter batch. From thereon, the information accompanies the animals through the entire slaughter line until – together with further animal/carcass information – it is printed onto a meat label attached to the carcass or to the meat package.

It should be emphasised that the value of the Animal Health Certificate is rather limited. Apart from the global number of animals, it does not specify the particular group composition, i.e. it remains unknown which animals belong to the relevant batch and which don't (see Annex 2: "Contents of the Animal Health Certificate). Therefore the batch of animals can be recomposed at any time which implies the possibility to subjoin animals from risky areas.

[10] Animal Health Certificates are required for the movement of live animals or carcasses across Soum borders.

VETERINARY EXPORT REQUIREMENTS

A Veterinary Export Certificate accompanies each consignment on its way to the country of destination. Contents and layout of the Export Certificate are agreed among exporting and importing country on base of the export/import requirements. Being the key document for exportation, the certificate is subjected to comprehensive checks by Border Inspection Posts (BIP) of the exporting country, of the importing country and – if applicable – of the transit country.

Initially, there was a hope to enable automated printing of the Export Certificate directly from the AIRS database. However, after becoming more familiar with the complex and cumbersome administrative procedure, which involves several institutions, it became clear that the current procedure could not be replaced at short notice. Therefore the AIRS database can only contribute to revealing the animals' records in terms of traceability and some other traits with potential relevance for exportation. In return, the exportation must be captured by the AIRS scheme to flag the animal as no longer existing in the country (this applies of course only for individually identified animals).

There is a set of requirements which need to be observed for the exportation of animals or of animal products. Usually such requirements are agreed as a MoU between veterinary authorities of the exporting and importing country. Agreed export requirements determine the format and contents of the Veterinary Export Certificate. Templates of current certificates for China and Russia are shown in Annex 2. Though following appropriate OIE rules (see next paragraph), the Export Certificates of both countries differ considerably. As mentioned before, such country-wise variation and the involvement of several national institutions in the application procedure prevents from printing the Veterinary Export Certificate directly from the AIRS database. Instead, records of the AIRS database need to be forwarded to the exporting company to allow their enclosure in the application documents.

Apart from such bilateral specifications, OIE established in Section 5 of the Terrestrial Animal Health Code some general rules applying to export certificates and trade (more details can be found in Annex 1). Section 5, titled as "Trade measures, import/export procedures and veterinary certification", consists of 55 pages and – apart from specifying some general rules – contains a set of templates for the veterinary export certification of animals and of various animal products. OIE member countries, such as Mongolia, are requested to observe OIE rules when establishing the Veterinary Export Certificate for a particular country.

ADMINISTRATIVE PROCEDURES

As mentioned before, veterinary export certification is a cumbersome and time-consuming procedure. The procedure is entirely paper-based and it may take more than two weeks until the applicant finally obtains the Veterinary Export Certificate and other export documents. The procedures for exportation of meat and live animals are slightly different:

Meat

The first step of the administrative procedure is the submission of an export application to GASI. The application consists of an application letter indicating the Aimag of the animals' origin and a set of attached prescribed documents:

a) Results of laboratory testing – according to diseases and traits listed in the Veterinary Export Certificate. Tissue samples are collected by the official Veterinary Inspector who forwards them to the Aimag's veterinary laboratory (there is at least one veterinary laboratory per Aimag).
b) Reference to the domestic Animal health Certificates
c) Written invoice to the importer
d) Packing list of the consignment, including driving route, driver, means of transportation, time of departure, transit point to be passed
e) Permission of transit from Veterinary Authority of transit country
f) In case of horse meat or beef: The governmental Quota Certificate
g) Written confirmation of the importing country to accept import from exporting Meat Company

After receiving the application, GASI appoints a Veterinary Inspector becoming in charge of the export certification process. Signature of GASI's head of Dep. for Border Inspection, for Import and Export completes the certification process of GASI. The processing period takes about 10 days and the service fees amount to 8 USD per certificate.

The Chamber of Commerce becomes involved after completion of GASI procedure by issuing the Certificate of (country of) Origin. The procedure takes about 3 days and service fees amount to 20 USD per certificate.

The third step is an application for Certification of Conformity from the national Office for Standardisation and Meteorology. Issuing takes only 2 hours. The amount of service fees could not be clarified during the mission.

Finally all export documents must be submitted to the national Customs Authority to communicate departure and further export information, as required by customs. At the day of departure, the customs officer again inspects each consignment before loading. He is accompanied by the Veterinary Inspector responsible for tissue sampling who confirmed laboratory testing of the loaded products (based on batch no.). The customs officer checks again and – if necessary – completes all documents and adds the driver data. Finally, the trailer is sealed by seals of the Customs Authority and GASI.

Live animals

Exportation of live animals is a rare event in Mongolia. However, recently there was export of breeding and slaughter horses to China. The administrative procedure for the export of live animals differs only slightly from meat exportation. First of all, there must be a permit of MoFALI allowing the exportation of live animals. In addition to other documents, such permit must be produced to GASI when applying for the Veterinary Export Certificate. There are two different kinds of Veterinary Export Certificates for live animals:

a) Slaughter animals

b) Breeding animals

Exportation of live animals requires preceding quarantine organised by the exporter. The diseases to be tested for are specified by requirements of the country of destination (e.g. 6 diseases for exporting breeding horses to China). Depending on the relevant incubation period, the quarantine period will take from 14 to 21 days. A mandatory Quarantine Protocol, to be maintained during the quarantine, informs about any clinical sign of diseases and contains laboratory test results for each of the animals. The application for Veterinary Export Certificate for live animals from GASI requires the following documents:

a) The application letter indicating the type of certificate (for slaughter animals or for breeding animals)
b) The Quarantine Protocol
c) Testing results of veterinary laboratory
d) Export permission of MoFALI
e) Contract between importer and exporter
f) Registration number
g) Original Movement Certificate issued by the local veterinarian
h) List of ID codes of the animals to be exported (Animal List)

Apart from omitting the Office for Standardisation and Meteorology, the involvement of other governmental institutions is the same as for the exportation of meat. Finally, all exportation documents accompany the consignment and need to be produced to the BIP, who checks the Veterinary Export Certificate and other documents and compares the Animal List with the ID code of loaded animals. Regarding the latter, it was proposed to complete the printed Animal List by corresponding barcodes which could automatically be captured by a Smartphone and – if reasonable – be transferred to the AIRS database to indicate completed exportation.

AIRS AND THE EXPORT CORRIDOR

Regarding the certification procedure, GASI expects AIRS to forward the following information to exporters and to the institutions involved in the certification and control process[11]:

- Animal ID code(s)
- Date of birth (if available)
- Herd of birth (herder name, location)
- Recent herd (if applicable)
- Traceability (movement) records across Soums (entire animal history)[12]
- Kind and date of preventive measures
- Antibiotic treatment
- Feeding regime

Apart from traceability records and preventive measures[13], the AIRS should also account for antibiotic treatment and for the feeding regime applied by the owner. According to the author's opinion, presentation of such records in the Veterinary Export Certificate should also consider highlighting Mongolia's unique organic animal production scheme to domestic and foreign consumers.

Antibiotic treatment (period of treatment) could be taken from the owner's Record Books on Animal Health[14]. In most cases, the applied feeding regime is an unchangeable attribute of the herder's animal handling. Therefore, it can easily be recorded when capturing the herder information. Different types of feeding regimes will need to be defined by the pilot project. In any case, it appears most evident to establish one particular type for the most common scheme, namely traditional feeding purely based on grass and hay. At this time, the format for storing and reporting the aforementioned information is not yet specified. Appropriate tasks need to be solved by the coming pilot project.

Export of meat and comparable animal products

Support of the application for export certification applies not only for live animals but also for meat and comparable animal products. However, for verifying the meat records, the database application needs to check whether slaughter of all animals contributing to the meat package has been registered. In contrast to live animals, AIRS support of meat exportation depends on the kind of processing of carcasses:

- Deboning
- Separating into meat cuts

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[11] The information shown above should not only be made available for the export corridor but also for meat companies supplying the domestic market. According to the author's opinion, appropriate records would enhance, food safety, transparency of the food chain, consumer's trust and consumer's demand for domestic products. Such information could also be the contentual base of a meat labelling system comparable to the EU beef labelling scheme (EU Regulation (EC) No 1760/2000 (see http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32000R1760)).

[12] The author believes that it is not necessary to for export purposes to register animal movements within Soums, provided that a Soum represents the lowest epidemiological unit.

[13] According to Rehben, preventive measures shall in future be recorded by the AIRS

[14] In his report, Eric Rehben uses the term "Health register" instead of "Record Books on Animal Health"

- Leaving the carcass uncut

A certain package of deboned meat might be produced by a batch of identified animals or by one single identified animal[15]. Due to the big amount of data, it might be difficult to reveal the records of all animals contributing to a consignment, which the Veterinary Export Certificate was requested for. It needs to be checked out whether this is practically feasible or whether it becomes necessary to restrict all traceability records, antibiotic treatments and feeding regimes to a reasonable limit. Possibly it will be sufficient to just denote the Aimags where corresponding animals were born, raised, slaughtered and processed. Such approach would be comparable to the EU beef label, where the 4-letter combination of e.g. P/F/B/D means “Born in Poland (P)”, “Raised in France (F)”, “Slaughtered in Belgium (B)”, and “Processed in Germany (D)”. The final format of transmitted data needs still be developed by the Pilot Project.

Export of live animals

According to OIE provisions, live animals intended for exportation must always be identified. Regardless of their intended use either for breeding or for slaughter, they have to undergo a 3-weeks quarantine, which takes place in a particular quarantine station. Movement to the quarantine represents a regular movement, which needs to be registered in the AIRS database.

Support of the application for the Export Certificate is rather the same as described before. Again, animal records should be returned from the AIRS database to the user by either a dialog application of by batch-wise processing. However, in contrast to meat exportation, there are possibly two more steps for utilizing the animal information.

An Animal (Short) List needs to be produced to the Border inspection post when passing the border. Therefore, it appears most reasonable to print such animal list from the AIRS database. The animal IDs should also be printed as 2-dimensional barcodes which can easily be recognized by Smartphone featuring an Android operating system. This would enable the BIP to scan the loaded animals from the animal list for further checking and other purposes.

Moreover, the quarantine records should be stored in the AIRS database to enable quick verification of the results at any time and for the applicant, any of institutions granting exportation permit and the Veterinary Authority. Contents and format of quarantine records to be stored must still be specified by GASI and the veterinary section of VABA.

Database applications

Two major aspects apply for AIRS database in respect of the export corridor:

1. Support of export certification by revealing traceability records of the AIRS database and other traits of interest.
2. Registration of exported live animals in the AIRS database to flag them as non-existing in the country any more

Support of export certification

Apart from directly viewing stored records of the AIRS database (within the limits of agreed privileges), the amended AIRS shall support the export certification procedure by automated data exchange with the users involved in the export corridor. Based on queries containing appropriate animal ID codes, the database shall return the records described in the previous section. Printouts of returned records can then become part of the application for the Veterinary Export Certificate by attaching them to the application letter.

[15] A batch of non-identified animals is left out here since the amended AIRS will always require the identification of commercially slaughtered animals

It is noticeable that interviews with potential users evidenced considerable variety of existing IT platforms. Under such circumstances, it will be impossible to establish data exchange through a direct system connection. Instead, it is proposed to exchange data through **standardized data interfaces** which have the same format for every user. Exchange can be done by formatted reports of the database triggered by appropriate queries submitting the corresponding animal ID code(s).

The practical application should allow for both: Exchange through interactive dialog and exchange through batch-wise data processing. Dialog enables immediate error correction in case of false data entry (if the database responds e.g. "Animal ID code not existing"). On the other hand, the dialog is rather slow and not suitable for processing a bigger number of animals at once.

For the dialog, there should be a database servlet which could e.g. be named ""Transfer Export data". When selecting such servlet after login, a new mask requesting entry of the animal ID code should show up. Once having entered the code, the database should respond by either offering local data download "Save as …" or by prompting an error message such as "Animal not found" or – in case of meat – "Animal not yet slaughtered" etc.

Download of correct data should be made on base of a standard format to be developed. Preferably, the standard interface for returned data should follow the XML scheme as XML particularly supports standardized data exchange across different platforms.

In contrast to dialog, batch-wise processing is of course much quicker due to referring to a batch of animals rather than to a single one. On the other hand, batch processing is more error-prone for the same reason. Batch processing requires a file of animal ID codes to be processed. The database needs to return two reports then:

a. AIRS data of animals that were found in the database and showed no conflict with any of the plausibility checks
b. A transfer protocol containing metadata of returned AIRS data and – if applying – about the kind of error in case of failing return.

Programming of batch-wise processing requires more efforts. However, due to including a bigger number of animals, batch-wise data processing will probably become a standard application for data exchange.

Registration of exports in the AIRS database

Exportation represents a particular kind of a movement where animals are ultimately removed from the national animal stock. If the animals were identified by individual ID codes (cattle, horses or small ruminants intended for breeding), exportation needs to be registered in the AIRS database to flag them as non-existing in the country any more. Otherwise they would persist as so-called "phantom animals", which only exist in the database but not in reality[16]. "Phantom" animals compromise data integrity and result in deteriorated reliability of the database as it mirrors no longer the reality of the country.

[16] "Phantom" animals negatively affect data integrity. In some countries, there are more than 50% phantom animals registered in the AIRS database. There is an inherent risk of becoming a "phantom animal" for any individually identified animal, if the animal's death (slaughter or natural death) was not recorded by the notified. As a consequence, the author strongly recommends to verify the existence/non-existence of live animals on the occasion of preventive measures. Animals found on the spot should be compared with the animals listed from the AIRS database. In case of deviation (missing or surplus animals) the owner should be asked details to enable proper recording of the movement resp. of slaughter.

Slaughter terminates the animal's traceability cycle in case of meat exportation. The meat company needs only to register arrival at the abattoir and subsequent slaughter. Exportation of live animals requires however the registration of two movements:

1. from the herder or farm to the quarantine station and
2. from the quarantine station to the country of destination.

The first movement represents a regular movement which requires movement notification of both, the sender (the herder) and the recipient (i.e. the quarantine holding). However, the second movement is a particular one and requires only notification by the sender. As recently communicated by Ms. Deeshin, the former head of the AIRS Unit, the current software contains already a module for importation and exportation movements, which is designed to record the following:

- (animal ID code)
- (exportation date)
- type of movement (importation/exportation)
- animal's age, sex, breed
- ancestors
- country of origin/destination
- border transition point
- transportation type
- total number of imported/exported animals

The data set contains some redundancies: Sex, breed and ancestors[17] are traits, which are captured in the course of animal registration. The age can be deducted from birth data and exportation date and the total number of imported/exported animals can be deducted from the AIRS database as well. Repeated recording of elements which have already been captured does not only create avoidable extra work but bears the risk of producing data inconsistency.

The border transition point and the transportation type are meaningless for the purpose of AIRS. On the other hand, an essential animal trait seems to be missing in case of importation: The previous animal ID code. The previous animal ID code would be needed in case of joining an international genetic evaluation scheme (as e.g. provided by "INTERBULL"). Imported breeding animals are the necessary ties connecting separate populations and revealing their genetic difference. Tie-animals can only be recognized if their original ID code has been stored.

[17] If necessary, ancestors should be part of a separate Pedigree Certificate

COST ESTIMATION

The report submitted by E. Rehben in March 2017 lines out that many functions and technical features of AIRS data transmission and data processing are outdated and should be replaced by more advanced alternatives. In addition there should be clear distinction between core functionalities and utilization of AIRS for other purposes. In the long term, the authors propose to rewrite the entire application. However, for the experimental phase of the pilot project, there should only be minor modifications of the current software to validate the adequacy of the amended scheme.

Apart from supporting the process of export certification, importation and exportation represents just a particular type of a movement, which – after considering the aforementioned aspects – can easily be integrated into the existing application. However, in the case of software rewriting, it should be observed that three additional traits have been proposed for the purpose of exportation or for utilisation by carcass/meat labelling in general:

1. Antibiotic treatment,
2. Feeding scheme
3. Quarantine protocol in case of live animals

Extra costs for development of the AIRS export corridor apply primarily for database programming and user training. Regardless of software modification or software rewriting, the import/export module would include the following programming components:

1. Data interface for export certification
    a. Dialog
        i. Input forms
        ii. Interface
        iii. Plausibility checks
        iv. Error protocol
    b. Batch
        i. Input forms
        ii. Interface
        iii. Plausibility checks
        iv. Transfer protocol (failure/success)
2. Movement registration for animal exportation
    a. Adaptation of database tables (new/deleted traits)
    b. Dialog
        i. Input forms
        ii. Plausibility checks
        iii. Error protocol
    c. Batch, including transfer protocol
        i. Input forms
        ii. Interface
        iii. Plausibility checks
        iv. Transfer protocol (failure/success)
3. Movement registration for animal importation

a. Adaptation of database tables (new/deleted traits)
b. Dialog
    i. Input forms
    ii. Plausibility checks
    iii. Error protocol
c. Batch, including transfer protocol
    i. Input forms
    ii. Interface
    iii. Plausibility checks
    iv. Transfer protocol (failure/success)

It makes no difference whether such components are programmed as an extension of the current AIRS application or as an integral part of a rewritten version. Some extra money has to be spent in the first case, whereas the overall costs will increase by approximately the same amount in case of rewriting.

Based on experience from comparable projects, and based on information of the AIRS database developers from “Interactive SSL” the development period for appropriate update was estimated to amount to around 2 man-months. The period includes training measure to familiarise all users with the new feature.

The current AIRS application, which was developed by “Interactive SSL” shows that there are experienced and skilled programmers in the country who are capable of extending or rewriting the current application according to specifications commonly developed by programmer and customer. When taking programming fees of about 4 million MNT per man-month into account, the overall costs will amount to approximately 8 million MNT, which is equivalent to 3,300 USD. Due to very low working costs of Mongolian programmers, such amount turns out to be much less than the initial cost estimation.

When discussing the options for database programming, the manager of ”Interactive LLC“ proposed to develop a database application for animal products which – via barcode scanning of the meat label – could automatically inform about traceability and other AIRS records of each package carrying a product label. However, according to the author’s opinion, such development would exceed the purpose of AIRS by far and should not be followed up.

IMPLEMENTATION OF THE EXPORT FEATURES

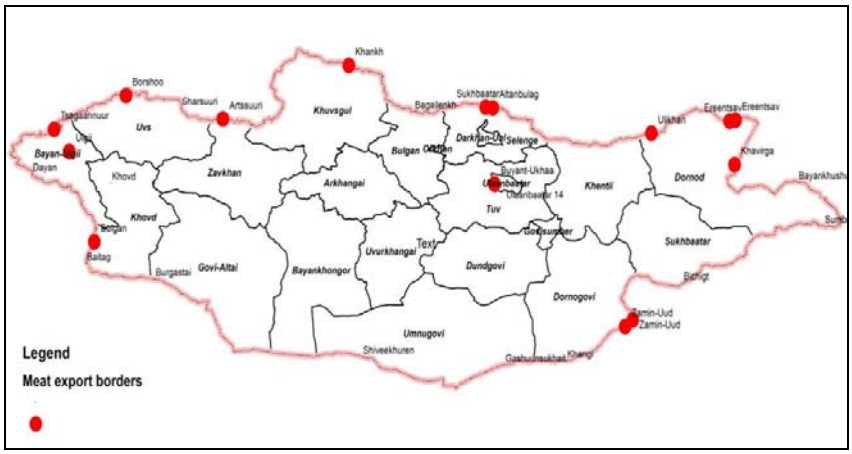
The export corridor aims to be a complementary component of the amended AIRS. Therefore it is strongly recommended to tie its implementation entirely to the planning and activities foreseen for AIRS improvement. This applies in particular for:

1. The pilot region

   The Soums of Dzumbayan,Bayangol and Gouchin Us of Övörkhangai Aimag were proposed as a pilot region. Unfortunately, there is no abattoir in the Aimag. According to information of Mr. Tsengel, head of Aimag Dep. for Livestock Husbandry, there are plans of Chinese investors to resume industrial meat production. However, it is unclear when this will happen. Currently, many herders sell their animals to meat companies operating in Ulaanbaatar. The biggest of them, Makh Market LLC and Makh Impex LLC are approved for meat exportation and intended to participate in the pilot project. In order to avoid batches of animals being composed of identified animals from Övörkhangai Aimag and non-identified animals from other parts of the country, there should be identification and registration of non-identified animals immediately upon arrival at the abattoir. This includes the registration of their owner if not yet contained in the AIRS database.

   In total there are 14 border control ports for the importation and/or exportation of live animals or of animal products and sub-products (see Figure 2). On a case-by-case basis it will not be known, which of the ports will be used for a particular exportation. Therefore, any intended exportation should be inquired from the participating meat companies and followed up to identify the border control point, to simulate border clearance and – if applicable – to record results of the quarantine measures in the AIRS database.

   Figure 2 – Locations of international border control ports



   Source: VABA 2015

2. Time frame and phasing

   According to Rehben, the overall duration of the implementation of the renewed AIRS would be approximately 3 ½ years, which are subdivided into the pilot phase and the roll-out phase. Among others, the pilot phase is intended to check the feasibility of the amended scheme, to develop and test the new information system and to develop a methodology for the implementation in an Aimag. The export sector needs to be addressed in all of these components. The feasibility should be discussed with Makh Market LLC and Makh Impex LLC because there is highly skilled staff operating the

company's IT system and understanding the background of AIRS. Export features need to be addressed in particular to ensure the occurrence of exportation for the AIRS scheme. This applies also for system access and user management of new users, such as staff of the meat companies. Developing and testing the new information needs of course to include all exportation features. Utilization of the data interface by the meat companies requires special support and interaction between IT staff of the meat companies and AIRS program developers. For testing and training, it appears crucial to establish and maintain a test environment which mirrors at least the production environment and contains simulation data to play with. Any kind of erroneous data can then be entered to the database without harming the integrity of real data.

As mentioned before, it will be essential to ensure identification and registration of all animals arriving at the abattoir to prevent from mixed batches of identified and non-identified animals. The procedure needs to be agreed with the meat companies. In addition, it will be most important to follow up if and where exportation will take place to check out whether AIRS sufficiently accounts for all aspects of exportation and importation.

Regarding the question whether or not the pilot could look at how to streamline the export certificate process, it should be brought to mind that frictional losses of the administration procedure are primarily caused by lacking electronic data processing. Set-up of a functional database, accounting for all features of the export sector would be required to overcome that constraint. According to the author's opinion, such a task would exceed the scope of AIRS and its pilot project by far and should no longer be pursued.

ANNEX 1: OIE PROVISIONS

Among others, the OIE's Terrestrial Animal Health Code (Section 5: Trade measures, import/export procedures and veterinary certification) specifies the following:

- The animal health situation in the exporting country, in the transit country(-ies) and in the importing country should be considered before determining the requirements for trade. To maximise harmonisation of the sanitary aspects of international trade, Veterinary Authorities of OIE Members should base their import requirements on the OIE standards.
- Certification requirements should be exact and concise, and should clearly convey the wishes of the importing country. For this purpose, prior consultation between Veterinary Authorities of importing and exporting countries may be necessary. It enables the setting out of the exact requirements
- The import requirements included in the international veterinary certificate should assure that commodities introduced into the importing country comply with the OIE standards. Importing countries should restrict their requirements to those necessary to achieve the national appropriate level of protection. If these are stricter than the OIE standards, they should be based on an import risk analysis.
- The international veterinary certificate should not include measures against pathogens or diseases which are not OIE listed, unless the importing country has demonstrated through import risk analysis, (…) that the pathogen or disease poses a significant risk to the importing country.
- An exporting country should, on request, supply the following to importing countries:
    i. information on the animal health situation and national animal health information systems to determine whether that country is free or has zones or compartments free from listed diseases, including the regulations and procedures in force to maintain its free status[18];
    ii. regular and prompt information on the occurrence of notifiable diseases;
    iii. details of the country's ability to apply measures to control and prevent the relevant listed diseases;
    iv. information on the structure of the Veterinary Services and the authority which they exercise in accordance with Chapters 3.1 and 3.2 (of OIE rules on exportation)
    v. technical information, particularly on biological tests and vaccines applied in all or part of the national territory.
- Veterinary Authorities of exporting countries should:
    i. have official procedures for authorisation of certifying veterinarians, defining their functions and duties as well as conditions of oversight and accountability, including possible suspension and termination of the authorisation;
    ii. ensure that the relevant instructions and training are provided to certifying veterinarians;

iii. monitor the activities of the certifying veterinarians to verify their integrity and impartiality.

- The Veterinary Authority of the exporting country is ultimately accountable for veterinary certification used in international trade

Note: At this time, Export Certificates are not yet issued by VABA, which – by OIE definition – represents the competent authority, but by GASI. There are some first attempts to overcome this conflict by shifting such responsibility to VABA by the next time.

Apart from the recommendations and statements shown above, OIE addresses in particular the protection of the professional integrity of the certifying veterinarian, the qualification of certifying veterinarians and preparation of international veterinary certificates (including electronic certificates).

Note: According to OIE, Certificates require appropriate identification of exported animals and animal products.

By highlighting its role and responsibility, OIE pays particular attention to the SPS Agreement of WTO. According to OIE, it is not necessary that exporting and importing countries share the same kind of sanitary measures. However, there should be a judgement of equivalence revealing comparable results of animal health in both countries. Judgment of equivalence covers several sub-chapters of OIE's Terrestrial Animal Health Code (Introduction; General considerations; Prerequisite considerations; Principles; Sequence of steps to be taken: Sequence of steps to be taken in establishing a zone/compartment and having it recognised for international trade purposes).

In respect of establishing zones or compartments, there is no single sequence of steps which should be followed. The steps will generally depend on the circumstances existing within the both countries and at their borders, and their trading history. OIE recommends the following steps:

1. For zoning
    a. The exporting country identifies a geographical area within its territory, which it considers to contain an animal subpopulation with a distinct health status based on surveillance (compare Figure 1).
    b. The exporting country describes in the biosecurity plan for the zone the measures which are being, or will be, applied to distinguish such an area epidemiologically from other parts of its territory, in accordance with the recommendations in the Terrestrial Code.

A functional animal identification and traceability system will certainly play a key role for zoning as it prevents from mix-up of animals from the zone and those from other parts of the country.

    c. The exporting country provides:
        i. the above information to the importing country, with an explanation of why the area can be treated as an epidemiologically separate zone for international trade purposes;
        ii. access to enable the procedures or systems that establish the zone to be examined and evaluated upon request by the importing country.
    d. The importing country determines whether it accepts such an area as a zone for the importation of animals and animal products, taking into account:
        i. an evaluation of the exporting country's Veterinary Services;

ii. the result of a risk assessment based on the information provided by the exporting country and its own research;

iii. its own animal health situation with respect to the disease(s) concerned; and

iv. other relevant OIE standards.

e. The importing country notifies the exporting country of its determination and the underlying reasons, within a reasonable period of time, being:

i. recognition of the zone; or

ii. request for further information; or

iii. rejection of the area as a zone for international trade purposes.

f. An attempt should be made to resolve any differences over recognition of the zone, either in the interim or finally, by using an agreed mechanism to reach consensus such as the OIE informal procedure for dispute mediation (see Article 5.3.8.).

g. The Veterinary Authorities of the importing and exporting countries should enter into a formal agreement recognizing the zone.

The limited time of the author's stay prevented from further investigation whether the healthy zone shown in Figure 1 (including the planned extension) is recognised by all potential trading partners of Mongolia.

2. For compartmentalisation

Compartments are similar to zones. However, in contrast to zones, compartments comprise an animal subpopulation which is just distributed over one or more establishments operating under common management practices related to biosecurity. The compartment also contains an identifiable animal subpopulation with a distinct health status with respect to specific disease(s). Similar steps as shown before, apply also for compartmentalisation.

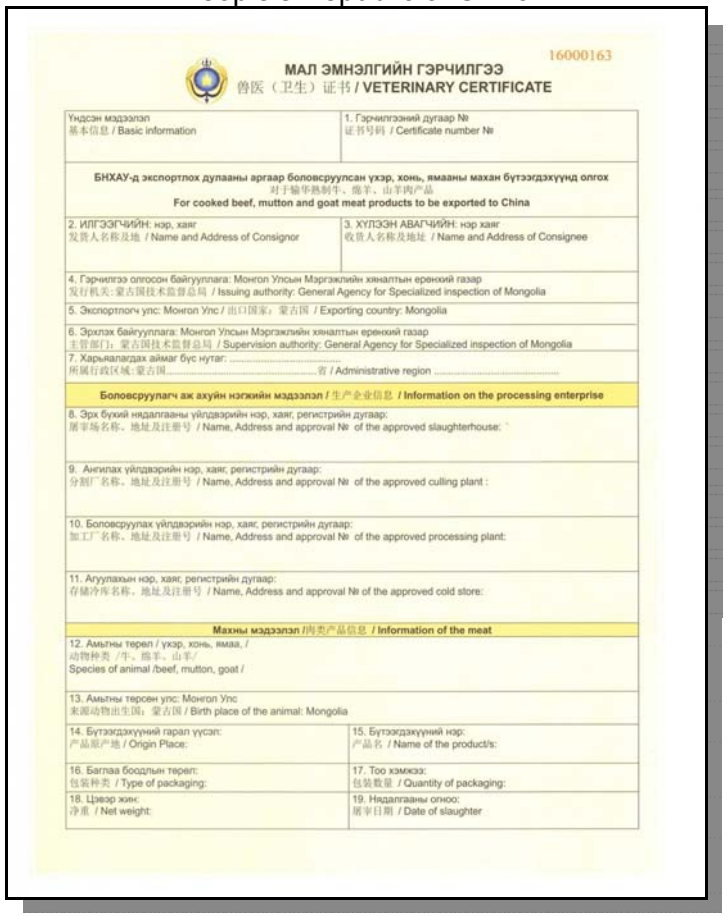
As far as the author got to now, there are currently no compartments in Mongolia. However, there are plan to establish compartments by the next years. Planned fenced areas serving as animal collection and finishing centres (e.g. upcoming "Agricultural Parks"), would also fully meet the technical criteria for compartmentalisation.

Further chapters of the OIE export section refer to the notification in case of possible diseases detected after exportation, the issuing of the International Veterinary Certificate, the export preparation of live animals, the export preparation of products of animal origin, the animal health measures applicable from the place of departure to the place of arrival, the border posts and quarantine stations and animal health measures applicable on arrival. It is noticeable that – in respect of exporting live animals – OIE rules provide that countries should only authorise the exportation of animals which are correctly identified and which meet the requirements of the importing country. The textual provisions are followed by model templates of Veterinary Export Certificates for the exportation of animals and of various animal products.

ANNEX 2: VETERINARY CERTIFICATES

Figure 3 – Veterinary Export Certificates

People's Republic of China

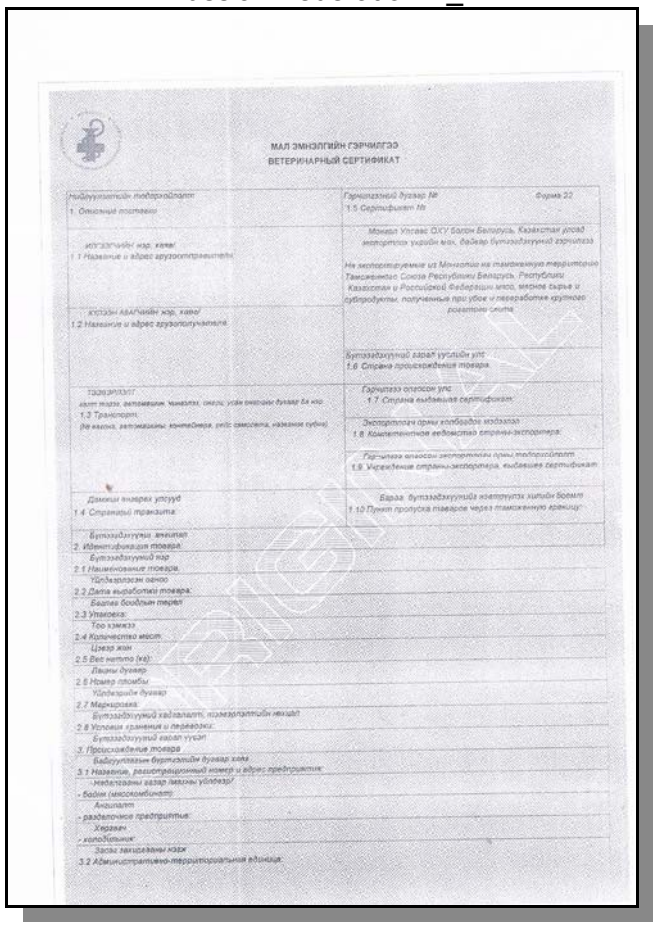


МАЛ ЭМНЭЛГИЙН ГЭРЧИЛГЭЭ
兽医（卫生）证书 / VETERINARY CERTIFICATE

16000163

Үндсэн мэдээлэл 基本信息 / Basic information	1. Гэрчилгээний дугаар № 证书号码 / Certificate number №
БНХАУ-д экспортлох дулааны аргаар боловсруулсан үхэр, хонь, ямааны махан бүтээгдэхүүнд олгох 对于输华熟制牛、羊、山羊肉产品 **For cooked beef, mutton and goat meat products to be exported to China**	
2. ИЛГЭЭГЧИЙН: нэр, хаяг 发货人名称及地 / Name and Address of Consignor	3. ХҮЛЭЭН АВАГЧИЙН: нэр хаяг 收货人名称及地址 / Name and Address of Consignee
4. Гэрчилгээ олгосон байгууллага: Монгол Улсын Мэргэжлийн хяналтын ерөнхий газар 发行机关:蒙古国技术监督总局 / Issuing authority: General Agency for Specialized inspection of Mongolia	
5. Экспортлогч улс: Монгол Улс / 出口国家：蒙古国 / Exporting country: Mongolia	
6. Эрхлэх байгууллага: Монгол Улсын Мэргэжлийн хяналтын ерөнхий газар 主管部门：蒙古国技术监督总局 / Supervision authority: General Agency for Specialized inspection of Mongolia	
7. Харьяалагдах аймаг бус нутаг: ..... 所属行政区域:蒙古国.....省 / Administrative region	
Боловсруулагч аж ахуйн нэгжийн мэдээлэл / 生产企业信息 / Information on the processing enterprise	
8. Эрх бүхий нэдалгааны үйлдвэрийн нэр, хаяг, регистрийн дугаар: 屠宰场名称、地址及注册号 / Name, Address and approval № of the approved slaughterhouse:	
9. Ангилах үйлдвэрийн нэр, хаяг, регистрийн дугаар: 分割厂名称、地址及注册号 / Name, Address and approval № of the approved culling plant :	
10. Боловсруулах үйлдвэрийн нэр, хаяг, регистрийн дугаар: 加工厂名称、地址及注册号 / Name, Address and approval № of the approved processing plant:	
11. Агуулахын нэр, хаяг, регистрийн дугаар: 存储冷库名称、地址及注册号 / Name, Address and approval № of the approved cold store:	
Махны мэдээлэл /肉类产品信息 / Information of the meat	
12. Амьтны төрөл / үхэр, хонь, ямаа, / 动物种类 /牛、羊、山羊/ Species of animal /beef, mutton, goat /	
13. Амьтны төрсөн улс: Монгол Улс 来源动物出生国：蒙古国 / Birth place of the animal: Mongolia	
14. Бүтээгдэхүүний гарал үүсэл: 产品原产地 / Origin Place:	15. Бүтээгдэхүүний нэр: 产品名 / Name of the product/s:
16. Баглаа боодлын төрөл: 包装种类 / Type of packaging:	17. Тоо хэмжээ: 包装数量 / Quantity of packaging:
18. Цэвэр жин: 净重 / Net weight:	19. Нядалгааны огноо: 屠宰日期 / Date of slaughter

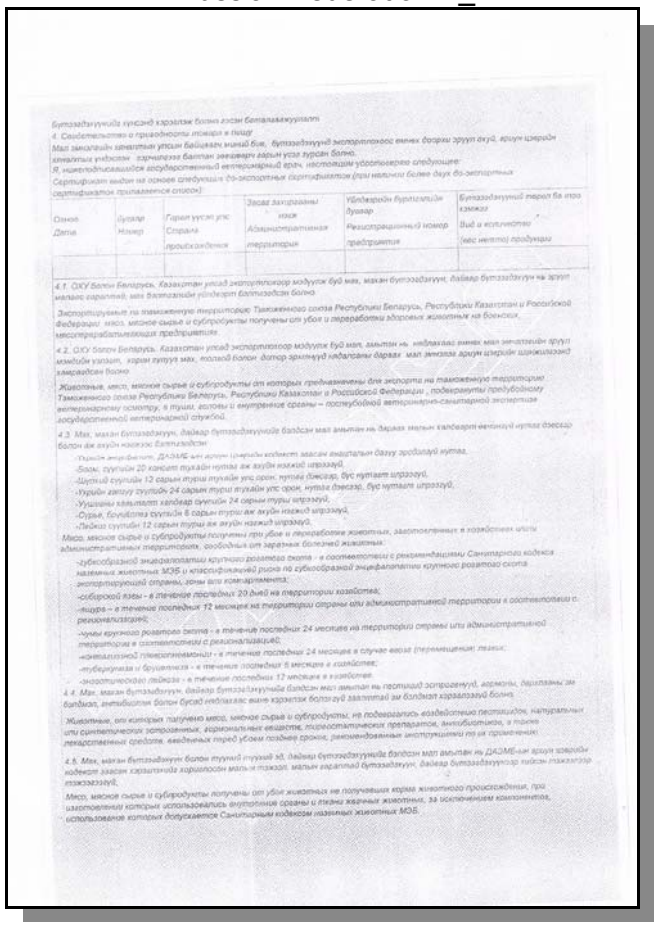
Russian Federation P_1



МАЛ ЭМНЭЛГИЙН ГЭРЧИЛГЭЭ
ВЕТЕРИНАРНЫЙ СЕРТИФИКАТ

Figure 4 – Veterinary Export Certificates

Russian Federation P_2



Russian Federation P_3

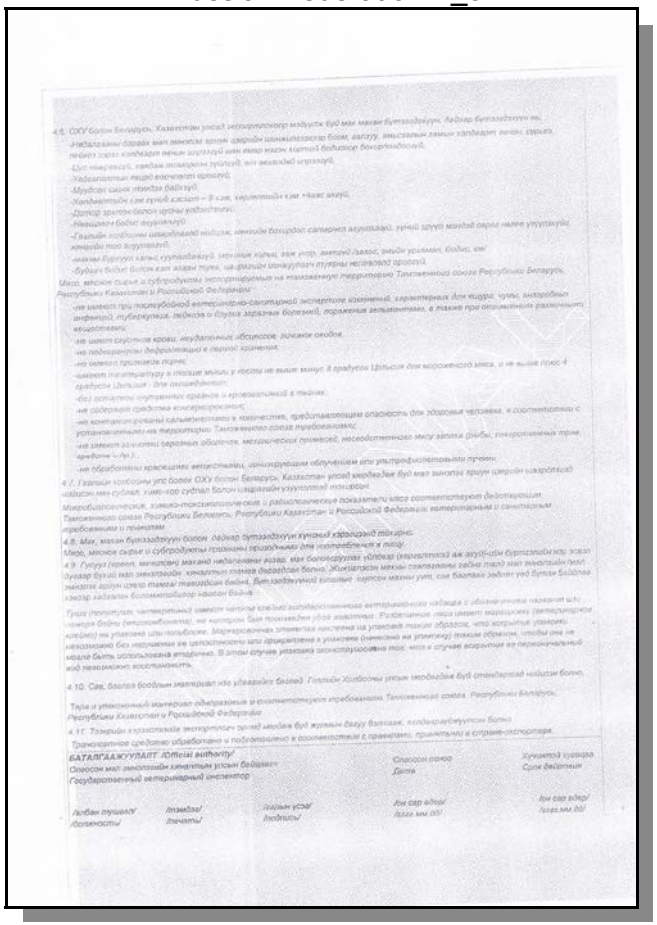


Table 2 Translation of the Russian Veterinary Export Certificate

1. Description of consignment Certificate No
1.1. Name and address of the consignment sender
1.2. Name and address of the Recipient
1.3. Transportation (train, vehicle, container, flight and shipment)
1.4 Country of transit
2. Identification of goods
2.1 Name of goods
2.2 Production date
2.3 packaging type
2.4 amount number
2.5 Net weight
2.6 Seal number
2.7 Marking number
2.8 Condition of storage and transportation
3. Origin of goods
3.1 Name, registration number and address of enterprises

- Slaughterhouse or processing plant
- Classification
- Refrigeration

3.2 Administration unit

4. Certifying suitability for food consumption

I, the undersigned Official veterinarian hereby certify the followings: the certificate is issued on the basis of pre-export certification (if there are more than two pre-export certificates, a list is attached) as:

4.1. Meat and meat raw materials and by-products exporting to the Custom Union's territory of Belarus. Kazakhstan and Russia are prepared from the healthy animals in slaughterhouses and processing plants.
4.2. Animals, meat, meat raw materials and by-products exporting to the Custom Union's territory of Belarus. Kazakhstan and Russia, the animals were passed through anti-mortem inspection; and carcasses, heads and internal organs were passed through post-mortem inspection done by State veterinary inspection authority.
4.3. Animals for meat, meat raw materials and by-products were prepared from the territory of the enterprises which are free following infectious diseases:

- - Bovine BSE – According to the OIE Veterinary Sanitary Codex
- - Anthrax – no outbreak within the last days in territory of the enterprises
- - FMD – no outbreak in the country in last months
- - Rabies – no outbreak in the country and territory of enterprises in last months
- - Contagious pleuropneumonia – in recent 24 months
- - Tuberculosis and Brucellosis – in last 6 months in the enterprises

- Enzootic leukaemia – no outbreak last 24 months in the enterprises

4.4. Animals for meat, meat raw materials and by-products have not been exposed to pesticides. harmony, antibiotics as well as medicines introduced before slaughter later than recommended by instructions for their use
4.5. Animals for meat, meat raw materials and by-products were not fed with animal feed that are prepared by animal originated feed and by-products that are prohibited by the OIE Veterinary Sanitary Codex
4.6. Meat, meat raw materials and by-products declaring to export to the Custom Union's territory of Belarus. Kazakhstan and Russia met the following:

- Post mortem laboratory analysis shows that no positive result for anthrax, rabies, anaerobic infectious, tuberculosis, brucellosis, leukemia and not contaminated with other poisonous substances
- have no blood clots, abscesses and larvae of ovaries
- no defrosted during storage
- deepest freezing degree of temperature is – 8oC and cooling temperature is not more than + 4oC
- no remnants of internal organs and hemorrhages in tissue
- no preservative substances
- no contamination with salmonella and amount of bacteria that can cause negative influence to human health
- no stripping of serious membranes of mechanical impurities and specific smell of meat (fish, medical plants etc.)
- not treated with colouring substances, ionizing radiation or ultra-violet rays

4.7. Microbiological, chemo-toxicology and radiological indicators meet the veterinary sanitary requirement of Custom Union country of Belarus, Kazakhstan and Russia
4.8. Meat, meat raw materials and by-products have been recognized for food consumption
4.9. Carcasses (half-carcasses, quarters) have a clear description of the State veterinary supervision with a designation of name of slaughterhouses and processing plants or sealed number of veterinary inspection. Packaged of meat were sealed with veterinary sanitary inspection.
4.10. Materials used for packaging of meat are disposal use that meets with standard of the Custom Union
4.11. Vehicles and transportation were disinfected according to the rules of exporting country

Certified /Official authority /
Issued by the State Veterinary Inspector Date of issuance
valid date
/Position title/ stamp signature date

Table 3 Contents of the Animal Health Certificate for live animals

Certificate no.

Name and address of citizen and enterprises :

Species and total animal number

Table containing

- Type of identification
- Ear tag no.
- Sex
- Age
- Pregnancy status
- Tattoo
- Body temperature

Origin of the animals:

- Aimag, Soum, Bag
- Herder

Consignment information

- Loading date
- Driver
- Details of transportation vehicle :
- Destination (Aimag, Soum)

Receiver

Result of laboratory test

- Disease name
- Testing date
- Type of Lab test
- Test result
- Lab technician (incl. signature)

Epidemiological status (household related)

- Outbreaks of FMD, PPR, SGP bovine pleuropneumonia, CSF, avian influenza in the recent 12 months
- Brucellosis, Tuberculosis, Glanders or Anaemia in the recent 6 months
- Anthrax, Pasterillosis or Enterotoxaemia in the recent 20 days
- Treatment with antibiotics in the recent 14 days (slaughter animals only)

Table containing vaccination results

- Vaccine
- Date of vaccination

Confirmation of above statements

- Aimag, Soum
- Veterinarian
- Stamp
- Signature
- Date

Reviewed

- Name of reviewer
- Aimag, Soum (District Governor)
- Veterinarian
- Stamp
- Signature
- Date

Inspected

- Name of Inspector
- Aimag, Soum (Inspection Check Point)
- Veterinarian
- Stamp
- Signature
- Date

Name and address of citizen and enterprises :

Species and total number of animals :

Transport

- Plate No.
- Vehicle number
- Name of the driver

Confirmation of issuing after inspection

- Veterinarian
- Signature
- Date

Table 4 Contents of the Animal Health Certificate for carcases

Certificate no.

Name and address of the trader

Market place

Number of display of products

Location of the animals and of the slaughterhouse

Number of origin of certificate

Result of inspection

Confirmation of inspection

- Veterinarian name
- Stamp
- Signature

Validity period (from … to)

ANNEX 3: ITINERARY OF THE MISSIONS PROGRAM

Date Time Organisation	Activity	Stakeholders met (organisations)	Issues/Results/Details
Mo 13.03. 10:00 FAO (UN Building)	Briefing in the FAO office	ET, DG, Mr. Kevin Gallagher (Deputy FAO Representative in Mongolia), Mrs. Aurelia Talvaz (Agric. Attachee, French Embassy)	Introduction of participants, Review of the mission program, planning of the stay
Mo 13.03. 14:00 Mongolian Meat Association	Visit of Mongolian Meat Association	ET, DG Mr. M. Ochirbat (head of Mongolian Meat Association)	Introduction to AIRS project, discussion about AIRS issues, rt requirements, discussion about numbering system in small ruminants, clarification of questions on MMA's Meat Report
Mo 13.03. 15:30 MoFALI	Visit of the MoFALI's AIRS Unit Visit of MoFALI Dep. of Food Policy	ET, DG <u>AIRS Unit:</u> Mr. Davaasuren (VABA officer in charge of AIRS, successor of Ms. Deeshin), Mr. M. Dagvadorj (AIRS IT-assistant) <u>DG of Food Policy Dep.:</u> Mr. Togoo Gantogtokh (head of Food Policy Dep.) Mrs. Tsetsegdari Tseren (officer in charge of meat production)	<u>AIRS Unit:</u> Introduction to successor of Mrs Deeshin <u>DG of Food Policy Dep:</u> Request of Russian import requirements requested, inquiry on slaughterhouse certification
Tu 14.03. 11:00 MoFALI AIRS Unit	Meeting with senior Veterinary Inspector of GASI	ET, DG Mr. Eldev-Ochir (head of Dep. for border inspection, for import and export of GASI) (eldev2002@yahoo.com)	Inquiry on GASI figures, inquiry on certification procedures, discussion about activity and role of GASI
Tu 14.03. 14:00 MoFALI, VABA, Veterinary Division	Meeting with Mongolia's CVO	ET, DG, Mrs. Tsolmon BANDI (head of veterinary division of VABA)	Discussion about Mongolian zoning, discussion about prev. measures, discussion about IT concept
Tu 14.03. 15:00	Meeting with head of VABA	ET, DG, Mr. Gankhuyag Puntsagdorj (head of VABA)	Discussion about funding options of the pilot project, Discussion about role of STDF

MoFALI VABA .			
We 15.03. 10:00 Makh Market	Visit of meat exporting company Makh market	ET, DG, Mrs. Bolor (head of Makh Market), Mrs. Ankhtuya (head of Makh Market Quality Department)	Presentation of slaughterhouse figures, demonstration of meat traceability based on movement certificate
We 15.03. 10:00 Makh Impex	Visit of meat exporting company Makh Impex	ET, DG, Mrs. Baatarmaa Batbayar (head of administration and external relations), Mr. Erkhbayar (production director), Mr. Tamjiddorj (quality manager)m Mrs. Otgon (General Technologist)	Presentation of slaughterhouse figures, demonstration of meat traceability within slaughter chain
We 15.03. 14:00 Mongolian Meat Association	Visit of Mongolian Meat Association	ET, DG Mr. Ochirbat (head of Mongolian Meat Association)	Continuation of discussion about evidence of export sector
Th 16.03. FAO Vehicle Administration building of Arvaikher (capital of Övörkhangai Aimag)	Travel to Arvaikher, capital of Övörkhangai Aimag (planned pilot area Visit of Aimag's Dep. of food and agriculture	ET, DG, Mr. Kadirbek Dagys (FAO short- Term Meat Expert), Mr. Tsedenbaljir Sandui (head of Dep. of food and agriculture)	Brief presentation of Aimag and Aimag's animal production features
Fr 17.03. FAO Vehicle Administration building of Arvaikher (capital of Övörkhangai Aimag) Administration building of Inspectiors Two herder sites	Visit of Aimag's vet. Unit Visit of Dep. of production and trade Visit of Dep. for livestock husbandry Presentation about export corridor to	ET, DG, Mr. Kadirbek Dagys (FAO short- Term Meat Expert), Mr. Nyamdavaa (head of vet. Unit of the Aimag), Mrs Ariuncea (head of Aimag Dep. of Production and Trade), Mr. Tsengel (head of Aimag Dep. for Livestock Husbandry) Mr. Tumurkhuag (herder 1) … (herder 2)	Presentation of veterinary activity of official and private veterinarians, presentation about export corridor to assembly of Aimag's Vet. Inspectors, presentation to assembly of Soum veterinarians, visit of two herder families

	assembly of Aimag's Vet. Inspectors Presentation about export corridor to assembly of Soum veterinarians Visit of two herders		
Sa 18.03. FAO Vehicle Two herder sites	Visit of herder 3 Visit of Herder 4 Visit of private Soum veterinarian Return to Ulaanbaatar	ET, DG, Mr. Kadirbek Dagys, Mr. Altankhuyag (herder 3) Mr. Dorjpurev (herder 4) Mrs. Gereltuya (Soum veterinarian)	Visit of two herder families, visit of Soum veterinarian
Su 19.03. 15:00 Shangri-La Hotel	Meeting with Rick Gurley, USAID	Rick Gurley (USAID Country Coordinator)	Discussion of participation of pilot project in "Agricultural Parks" established by USAID
Mo 20.03. 11:00 Building of IT company Interactive LLC	Visit of IT company Interactive LLC	ET, DG, Mr. Uuganbayar Badamsuren (owner and president of IT company Interactive LLC)	Inquiry about current structure of database application (processing of movement records in particular), discussion of standard interface for traceability records, discussion about programming costs
Tu 21.03. 11:00	Meeting of International partners Presentation of AIRS Export Corridor	ET, DG, Mr. Kevin Gallagher (Deputy FAO Representative in Mongolia), IFC/WB, SDC, Czech Embassy, French Embassy, Canadian Embassy, Mercy Corps, EU Standards/Henk, USAID, FAO, UNDP, ADRA who are working on meat export issues	PPT-Presentation "Animal Traceability for the Export Corridor of Mongolian Meat and Meat Products"
We 22.03. 11:00 Min Foreign Affairs/Trade dept)	Min Foreign Affairs/Trade dept)	Mr.Enkhbold (not met) Meeting skipped (contact person not available)	

Th 23.03. 9:00 Platinum Hotel	Meeting with head of Makh Market Quality Department	ET, DG, Mrs. Ankhtuya (head of Makh Market Quality Department)	Presentation of information flow through slaughter line
Th 23.03. 11:00 Platinum Hotel	Meeting with head of Dep. for border inspection, for import and export of GASI	ET, DG, Mr. Eldev-Ochir (head of Dep. for border inspection, for import and export of GASI)	Demonstration of administrative procedure for issuing the Export Certificate for animal products.
Fr 24.03. 10:00 UN Building	Debriefing	ET, DG, Mr. Kevin Gallagher (Deputy FAO Representative in Mongolia), Mrs. Aurelia Talvaz (Agric. Attachee, French Embassy)	Discussion about AIRS implementation details, Discussion about potential donors, discussion about further steps
Sa 25.03.	Departure		

Abbreviation

DG Mrs. Deeshin Gombosuren (local AIRS expert)

ET Mrs. Enkhee Tumurochir (veterinarian, translation)