CAREC Policy Dialogue on Regional Program for Prevention and Control of Transboundary Animal Diseases [1]
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Draft Concept Note

(This draft concept note will be developed through regional policy dialogues and consultations with the CAREC National Working Groups for Sanitary and Phytosanitary Measures, relevant government agencies and development partners in the region.)

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1 INTRODUCTION

Transboundary animal diseases (TADs) are epidemic diseases that are highly contagious and rapidly spreading, with a potential to cause high socio-economic damage. They cause high morbidity and mortality in animal populations which can lead to major production losses in livestock production. In addition to the ability to cause high damage in animal populations, TADs can threaten the safety of food and thus have consequences on public health.

Examples of TADs include (list is non-exhaustive):

- Foot and Mouth Disease (FMD)
- African Swine Fever (ASF)
- Classical Swine Fever (CSF)
- Contagious bovine pleuropneumonia (CBPP)
- Highly Pathogenic Avian Influenza (HPAI)
- Peste des petits ruminants (PPR)
- Rift Valley Fever (RVF)
- Newcastle Disease (ND)
- Rinderpest (global eradication declared in June 2011)

Because of their ability to spread fast and without the recognition of national borders, TADs have a high impact on animal trade as they can disrupt or hinder national or international trade of livestock and livestock products. The prevention and control of TADs is thus a key factor for the facilitation of trade of live animals and animal products and the access to new markets

The availability of economic evaluations on the control of TADs are limited[Error! Bookmark not defined.]. Most of the published literature is focusing on the economics of a specific country or disease, rather than the effect of regional approaches. The calculation of economic factors is not straightforward and can get complex as it consists of multiple components.

Economic impacts of TADs include[2,3]

- **Direct impact of disease**: Higher mortality and/or morbidity will lead to production losses, such as lower milk/egg yield, poor wool quality or abortions. This leads to reduced farm revenues and increased costs of production.
- **Domestic market disruptions**: Disease outbreaks might cause a sudden fall in consumption of certain products, which will lead to a surplus on the domestic market thereof. The subsequent decrease in price will lead to reduced revenues for the producers. As well, disease outbreaks may lead to a shortage of specific products on the market or an increased demand for alternative products (e.g. poultry meat to replace bovine meat), both leading to increased consumer prices.
- **Trade**: Disease-free countries have the right to apply SPS measures in order to protect their domestic livestock population, which will restrict the access to certain export markets for countries affected by TAD's.

[2] Otte, M.J., Nugent, R., McLeod, R. Transboundary Animal Diseases: Assessment of socio-economic impacts and institutional responses. FAO Livestock discussion policy paper No. 9, 2004
[3] Food and Agricultural Organisation of the United Nations FA0. FAO Production and Health guidelines. Economic analysis of animal diseases, 2016

- **Tourism**: Decrease of tourism due to restricted access to rural areas or discouragement of people visiting an infected country.

Considering the scope of the economic impact of TADs, the dimensions of possible economic benefits as a result of disease control and eradication programs become apparent.

2 INTERNATIONAL STANDARDS AND INITIATIVES

2.1 SANITARY AND PHYTOSANITARY MEASURES IN TRADE

The implementation of SPS measures is necessary to safeguard the life or health of humans, animals or plants within a country. However, such measures might entail restrictions on trade of imported animals or animal products. The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)[4], which entered into force with the establishment of the World Trade Organization in 1995, sets out basic rules for food safety and animal and plant health standards. It lies down that SPS measures should not be arbitrary and should not lead to unjustifiable discrimination between countries with similar or identical health status conditions. Higher SPS measures than those internationally recommended can only be adopted if they can be justified by objective methods such as scientific risk assessments. Article 7 of the SPS Agreement obliges WTO Members to notify changes in their sanitary or phytosanitary measures whenever they are affecting trade.

In 1998, the OIE received the mandate from the WTO to recognise disease-free areas based on the SPS Agreement. The declaration of official disease status is voluntary and can currently be claimed for the following diseases:

- African horse sickness (AHS)
- Foot and mouth disease (FMD)
- Bovine spongiform encephalopathy (BSE)
- Peste des petits ruminants (PPR)
- Classical swine fever (CSF)
- Contagious bovine pleuropneumonia (CBPP)
- Rinderpest (global eradication declared in June 2011)

Declaration of a disease status can be applied at country level or a defined zone within a country. In order to receive official recognition of freedom of disease, the questionnaire laid out in Chapter 1.6. of the OIE Terrestrial Animal Health Code (hereinafter referred to as *Terrestrial Code*) has to be submitted and the requirements specified in the *Terrestrial Code* for disease in question have to be fulfilled.

Countries claiming the internationally recognised disease-free status in livestock will profit from trade benefits by accessing new export markets and by the liberty to trade a wider range of products in existing markets. However, such a claim to substantiate freedom from livestock disease will require high quantity and high quality information on the national animal health status. Where data are not readily available, a monitoring and surveillance system has to be set up in order to gather all

[4] WTO, Agreement on the Application of Sanitary and Phytosanitary Measures, https://www.wto.org/English/tratop_e/sps_e/spsagr_e.htm

animal health data necessary to take the first step towards a disease control program and, as a consequence, a facilitation of trade.

2.2 Global initiatives for prevention and control of Transboundary Animal Diseases

Over the last decades, globalisation and trade liberalization have brought new opportunities to the region. However, infectious livestock disease outbreaks such as FMD, PPR or RVF have repeatedly brought new challenges to cross-border trade. Disease prevention and control is thus no longer a question of national mitigation measures only, but has become substance of regional relevance. The fact that TADs are spreading rapidly with no respect of national borders brings out the need for coordinated regional approaches and frameworks. Experiences in the past have shown that cross-country initiatives have been much more successful and sustainable than efforts solely on the national level. The need for such regional joint efforts and harmonisation of disease prevention and control programs also entailed international organisations to set up supporting initiatives.

2.2.1 The Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs)

The Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs) is a joint initiative of FAO and OIE, established in 2004. Its main goals are to achieve the prevention, detection and control of transboundary animal diseases, by addressing both regional and global dimensions.

GF-TADs covers the regions Africa, Americas, Asia, Europe and Middle East. CAREC program nations are part of the following GF-TADs regions:

- Central Asia: Afghanistan, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Tajikistan, Pakistan
- East Asia: Mongolia, PR China
- Eastern Europe: Georgia, Azerbaijan

GF-TADs lists the following priority diseases for the relevant regions (adapted from the GF-TADs website[5]):

Disease	Europe	Middle East	Asia	Global
FMD	✓	✓		✓
HPAI	✓	✓		✓
PPR	✓	✓		✓
Rabies	✓	✓		✓
CSF	✓			
RVF		✓		✓
Bluetongue		✓		
Glanders		✓		
Brucellosis	✓	✓		
ASF	✓			✓
Sheep & Goat Pox		✓		

Diseases shaded in yellow are in the main focus of the region

[5] GF-TADs website: http://www.gf-tads.org/about/priority-diseases/en/ (last accessed 7 December 2018)

The presence of selected infectious animal diseases in the CAREC region (diseases for which an official OIE disease status exists or that are listed as a priority disease by the GF-TADs) are summarized in Annexes I and II.

2.2.2 Selected regional or global disease eradication programs

- **EU-FMD**: The European Commission for the Control of Foot-and-Mouth Disease (EuFMD) is a European Commission established in 1954. It coordinates activities to prevent the incursion of FMD and to improve emergency preparedness to control FMD. It has 39 member countries, including Georgia as a CAREC member. The Progressive Control Pathway for Foot-and-Mouth Disease (PCP-FMD) was developed by FAO and Eu-FMD and was endorsed by the OIE. The PCP-FMD is a risk management tool that can be used by veterinary authorities to reduce the risks linked to FMD. The pathway recognizes all FMD disease status, starting from "not controlled/no information available" up to "freedom from disease". Following a bottom up approach, it encourages member states to develop their own risk reduction strategies along the pathway[6].
- **Global Strategy for the Control and Eradication of PPR (PPR GCES):** PPR is one of the priority diseases listed by GF-TADs. In response to recommendations of the OIE and the Committee on Agriculture (COAG) of the Food and Agriculture Organization, the GF-TADs Working group has developed the PPR Global Control and Eradication Strategy. This strategy aims to eradicate PPR by the year 2030[7].
- **Standing Group of Experts on African swine fever in Europe (SGE ASF) and Standing Group of Experts on Lumpy Skin Disease in South-East Europe (SGE LSD):** These groups of experts have been formed under the Umbrella of GF-TADs and were launched in 2014 and 2016, respectively. Their aims are to increase transparency, provide a platform for dialogues and harmonize measures in affected countries in the region. CAREC member countries Georgia and Kazakhstan are member states of the SGE LSD. No CAREC member countries are SGE ASF.

3 PROGRAM FOR PREVENTION AND CONTROL OF TADS

An effective disease prevention and control program consists of several integrated components, which are outlined in the following chapters. Reference is made to chapters of the OIE *Terrestrial Code* where applicable.

3.1 REGULATORY FRAMEWORK

A sound and comprehensive legal basis is required to empower the strategies and actions envisaged by the Veterinary Authorities. OIE member states are obliged to notify the occurrence of OIE-listed and emerging diseases to the OIE. Member Countries are also encouraged to provide information on other significant epidemiological disease events. Chapter 3.4. of the *Terrestrial Code* includes recommendations for veterinary legislation that ensures good governance in the veterinary domain, with Article 3.4.9. specifying recommendations in regard to disease surveillance, prevention and control. For the purpose of surveillance, the veterinary legislation should "provide basis for the collection, transmission and utilisation of epidemiological data […]"[8]. Furthermore, the legislation

[6] EU-FMD website: http://www.fao.org/ag/againfo/commissions/eufmd/commissions/eufmd-home/en/ (last accessed 13 December 2018)

[7] World Organisation for Animal Health (OIE), and Food and Agriculture Organization of the United Nations (FAO). GLOBAL STRATEGY FOR THE CONTROL AND ERADICATION OF PPR. 2015, http://www.fao.org/3/a-i4460e.pdf

[8] World Organisation for Animal Health (OIE). Terrestrial Animal Health Code. Twenty-Seventh Edition, 2018.

should provide for animal health measures, a basis for contingency plans and information on the financing of disease control measures. The focus of the defined measures should be on national level, however, the national market should be protected by additional measures that prevent the introduction of TADs through international trade.

3.2 IDENTIFICATION, REGISTRATION AND TRACEABILITY

An effective traceability system is not only crucial to rapidly trace individual animals, herd or flocks in the event of an epidemic disease outbreak, but is also a prerequisite for the implementation of surveillance or disease control programs. Furthermore, an integrated traceability system creates trust among both customers and trading partners. The basis of a traceability system is given by the identification of individual animals or herds/flocks. Identification means may include ear tags, rumen boluses (ruminants), tattoos or microchips. In a second step, the identified units have to be registered in a central database. In order to enable traceability, all animal movements will have to be recorded and linked to the respective individual identification number.

Chapters 4.1. and 4.2 of the *Terrestrial Code* cover general principles of traceability of live animals and the design and implementation of identification systems.

3.3 MONITORING AND SURVEILLANCE

The setup of an animal health monitoring and surveillance system will create the information and data necessary for the design of a disease prevention and control program, and later the evaluation of its progress. Well-established national disease surveillance, detection and response systems are a prerequisite for cross-country control initiatives[9].

A monitoring system will gather information over time without triggering a specific action, whereas a surveillance system will lead to specific actions depending on its purpose. Monitoring and surveillance systems can be implemented and adapted for a variety of objectives, including:

- Rapid detection of disease outbreaks
- Early detection of emerging diseases
- Substantiating freedom from disease
- Evaluation of disease control programs
- Stimulation and information of research
- Definition of priorities for disease control and prevention

Surveillance systems can be passive or active. Passive surveillance makes use of routinely collected health data, for example outputs of mandatory disease notification systems, laboratory reports or findings from meat inspection. In contrast, active surveillance involves active sampling on request of the investigator, such as the conduct of surveys in the field.

Chapter 1.4. of the *Terrestrial Code* is dedicated to animal health surveillance. It includes information on the different purposes and types of surveillance systems, sample collection and sensitivity analysis. Information on surveillance systems to demonstrate freedom from disease or infection is outlined in Article 1.4.6., and requirements for the application to achieve official recognition for

[9] Jebara, K. Ben. "Surveillance, Detection and Response: Managing Emerging Diseases at National and International Levels." Rev. Sci. Tech. Off. Int. Epiz, vol. 23, no. 2, 2004, pp. 709–715

freedom of disease are covered in Chapter 1.7. to 1.12 for each disease. The entire Chapter 1.5 is dedicated to the surveillance of animal disease caused by arthropod vectors.

3.4 CONTROL PROGRAM

Taking into account the current animal health status, the aim of a national disease control program should be clearly defined. A prioritisation of existing TADs might be necessary to overcome a potential lack of personal and/or financial resources and allocate available capacities in the most efficient way. As the eradication of a disease is not always feasible for a variety of epidemiological or socio-economic reasons, control programs can include other mitigation measures which may aim to reduce the socio-economic or animal health and welfare impact. Official control programmes for CBPP, FMD and PPR carried out in OIE member countries can be endorsed by the OIE. Prerequisites to have a control program endorsed are provided in Article 1.7-1.12 of the *Terrestrial Code* for the respective diseases.

The most important elements of a control program include

- Movement restrictions
- Good hygiene and sanitary practices when handling livestock
- Vaccination programs
- Contingency plans
- Vector reduction
- In the case of a disease outbreak: vaccination, zoning, stamping out
- Border control and quarantine

The OIE published a document "Guidelines for Animal Disease Control", which includes information on the rationale, objectives, implementation and evaluation of disease control programs.[10]

3.5 DIAGNOSTIC CAPACITIES

The diagnostic capacities play a key role within the framework of a disease control program, because diagnostic tests will ultimately confirm either presence or absence of disease. Laboratories need to have minimal required capacities, both in terms of personal and technical resources in order to ensure credible test results.

A diagnostic test can either detect disease specific antigens or antibodies. Serological tests that test for antibodies can give valuable information about disease prevalence and past disease exposure of a population. However, it cannot differentiate whether an animal is suffering from acute disease, was previously exposed to a disease or has been vaccinated with a (non-marker) vaccine. Also, antibodies may only become detectable at a later stage in the course of an infectious disease process, which makes a serological test unsuitable for the detection of newly infected animals. In contrast, tests for the detection of antigen will allow to reveal an acute infection, however they may be more time consuming and/or costly.

The *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (*Terrestrial Manual*)[11] contains information on standards for diagnostic laboratories and lists diagnostic techniques for a wide range of animal diseases in detail. Chapter 1.1.1 lies out general standards for the infrastructure, human

[10] World Organisation for Animal Health (OIE). Guidelines for Animal Disease Control. 2014.
[11] World Organisation for Animal Health (OIE). Terrestrial Animal Health Code: Manual of Diagnostic Tests and Vaccines for Terrestrial Animal. 2012.

resources and quality assurance of laboratories. Principles that apply to the collection, submission and storage of samples are outlined in Chapter 1.1.2. Chapter 1.1.5 presents standards on the quality assurance, e.g. accreditation of laboratories and quality assurance of diagnostic test methods. Furthermore, the OIE provides recommendations for diagnostic test kits for a wide range of listed animal diseases that have been certified and thus are considered "fit for purpose" following a validation of their diagnostic and biological test properties.

3.6 BORDER CONTROL

Veterinary border inspections are part of disease control programs, aiming to prevent the incursion of infectious disease into the country through live animals or animal products. Only animals that have been subjected to a health examination by an Official Veterinarian of the exporting country and that are accompanied by an international veterinary certificate should be imported to the national territory (*Terrestrial Code*, Article 5.7.1.). Models of such health certificates are provided in Chapter 5.10 of the *Terrestrial Code*. Furthermore, border inspection points where animals are entering the country should be equipped appropriately in order to apply the measures recommended by the *Terrestrial Code*. Chapter 5.6. outlines the requirement for border inspection posts and quarantine stations handling the import of live animals.

Sanitary mitigation measures implemented at the border should be in line with the risk of introduction of the respective disease. A formal risk assessment approach should be used to base the risk estimation on scientific evidence in accordance with Chapter 2.1. of the *Terrestrial Code*. The OIE has published two handbooks on import risk analysis for animals and animal products, covering qualitative and quantitative risk assessment methods[12,13].

3.7 REGIONAL CONTROL PROGRAMS

As TADs do not respect borders, regional initiatives can substantially increase the efficiency of national control programs. Besides direct economic effects on national level (see Chapter 0), such initiatives will bring the following benefits on regional level:

- **Exchange of information**: Disease awareness can be raised if disease outbreaks are reported to neighbouring countries, which will allow enough lead time to prepare potential preventive measure either on national or regional level. Sharing of data of past and current disease events will help to keep the overview of what is happening in the region at every stage of an emerging disease event.
- **Exchange of experiences:** The exchange of experiences among countries in the region can be highly beneficial, because countries from the same region often share similar animal health status and socio-economic structures.
- **Joint activities**: In order to save costs and make the best use of available knowledge capacities, activities can be organized on regional level. Such activities may include disease awareness training and campaigns, or the development of a regional contingency plan.

[12] World Organisation for Animal Health (OIE). Handbook on Import Risk Analysis For Animals And Animal Products. Introduction and qualitative risk analysis. Volume I, 2nd edition 2010

[13] World Organisation for Animal Health (OIE). Handbook on Import Risk Analysis For Animals And Animal Products. Quantitative risk assessment. Volume II, 1st edition 2004.

- **Diagnostic capacities**: Not all countries may have the necessary laboratory capacities, both in terms of human and technical resources. Sharing laboratory capacities will allow to use complementary resources in a most efficient way.

Overall, regional initiatives can enhance the cross-country support of countries with limited personal or financial resources. If necessary, international assurances and expectations can be substantiated through formalized Memorandums of Understanding (MoU).

4 EXTERNAL SUPPORT

As outlined in the previous chapters, the design and implementation of effective animal disease prevention and control programs needs a substantial amount of resources. As TADs spread without considerations of political borders, joint regional initiatives may strengthen the national efforts taken for disease control and prevention. Priorities in regard to what disease should be controlled may thus be set at a regional level, from where individual countries can then further develop their national strategies.

International institutions such as OIE and FAO may provide financial or technical support to member states, a selection of current initiatives is presented in Chapter 2.2.

Furthermore, FAO provides a number of platforms for animal disease emergency response mechanisms:

- Emergency Prevention System (EMPRES): http://www.fao.org/ag/againfo/programmes/en/empres/home.asp
- Emergency Centre for Transboundary Animal Diseases (ECTAD): http://www.fao.org/emergencies/fao-in-action/ectad/en/
- Emergency Management Centre for Animal Health (EMC-AH): http://www.fao.org/emergencies/how-we-work/prepare-and-respond/emc-ah/en/
- Emergency Prevention System for Animal Health EMPRES-AH: http://www.fao.org/ag/againfo/programmes/en/empres/home.asp
- The joint FAO-OIE-WHO global early warning system (GLEWS) http://www.glews.net/

Further online resources that provide information on TADs:

- ProMED: https://www.promedmail.org/
- Healthmap: https://www.healthmap.org/en/
- World Animal Health Information Database (WAHIS) Interface: http://www.oie.int/wahis_2/public/wahid.php/Wahidhome/Home
- Global Animal Disease Information System (EMPRES-i): http://empres-i.fao.org/eipws3g/

Annex I

Reported disease situation of CAREC countries for which an official OIE disease status recognition exists or that were listed as a priority disease by the GF-TADs (Data of 2017 unless indicated otherwise[14])

Disease	Afghanistan	Azerbaijan	People's Republic of China	Georgia	Kazakhstan	Kyrgyz Republic	Mongolia	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
African Horse Sickness	NR	NR	NR	NR	D- in 2017	NR	NR	D- since 1959	NR	NR	NR
African Swine Fever (ASF)	NR	D- since 03/2008	*D+ (since 2018)*	D- since 2007	D- in 2017	NR	*D+ (since 2019)*	N/A	NR	NR	NR
Bovine spongiforme encephalopathy (BSE)	NR	NR	NR	NR	D- in 2017	NR	NR	NR	NR	D- in 2017	NR
Brucellosis (Brucella abortus)	D+	D+	D+	D+	D+	D+	D+	D+	D+	D+	D- in 2017
Brucellosis (Brucella melitensis)	D+	D+	D+	D- since 1992	D+	D+	D+	D+	D+	D+	D- in 2017
Classical Swine Fever	NR	NR	D+	D- since 1984	D- in 2017	NR	D- since 01/2016	N/A	D- since 1991	D- in 2017	D- since 1979
Contagious bovine. pleuropneumonia	N/A	NR	D+	D- since 1932	D- in 2017	absence in 2017	D- since 1973	D- since 1997	NR	NR	NR

[14] World Animal Health Information Database (WAHIS) Interface: http://www.oie.int/wahis_2/public/wahid.php/Wahidhome/Home

Foot and mouth disease	D+	D- since 06/2001	D+	D- since 2002	free, vacc+/-	absence since 09/2014	D+	D+	D- since 11/2013	N/A	D- since 1991
Glanders	D- since 12/2012	D- in 2017	N/A	D- since 1960	D- in 2017	D- in 2017	D- since 12/2012	absence since 12/2015	N/A	D- in 2017	absence in 2017
Highly pathogenic influenza A viruses (infection with) (non-poultry including wild birds)	D-	D- since 02/2006	D+	D- in 2017	D+	N/A	D- since 06/2010	absence since 06/2008	D- in 2017	NR	NR
Peste des petits ruminants	D+	NR	D+	D- since 03/2019	D- in 2017	NR	D+	D+	D- in 2017	NR	NR
Rabies	D+	D+	D+	D+	D+	D+	D+	D+	D+	D+	D+
Sheep pox and goat pox	D+	D- since 04/2009	D+	D- since 1997	D- since 08/2015	D- since 06/2015	D+	D+	D- since 03/2014	D- since 06/2014	D- since 1996
Rift Valley Fever (RVF)	N/A	NR	N/A	NR	D- in 2017	NR	NR	NR	NR	NR	NR

N/A: no information provided
D+: Disease present
D-: Disease absent
NR: never reported
Italic Font: Recent emergence

Annex II

Current officially recognized disease status of countries in the CAREC region (status December 2018)[15]

	Azerbaijan	China, PDR	Kazakhstan	Kyrgyzstan
FMD			FMD free zone without vaccination FMD free zone with vaccination	
BSE		Zone with negligible BSE risk		
CBPP		Country free from CBPP		
AHS	Country free from AHS	Country free from AHS		Status currently suspended

Global eradication of rinderpest was achieved in 2011.

[15] http://www.oie.int/animal-health-in-the-world/official-disease-status/